

Photograph 3: Site access gates



Photograph 4: Southern corner of the site viewed from the adjacent field used for horse grazing located to the south of the site



Photograph 5: View onto the site from Ford Road prior to vegetation clearance



Photograph 6: Drainage ditch located to the east of the access track (viewed from the sluice gate)



Photograph 7: Damage to the site boundary along the south eastern boundary



Photograph 8: Electricity sub-station located along adjacent to the site entrance



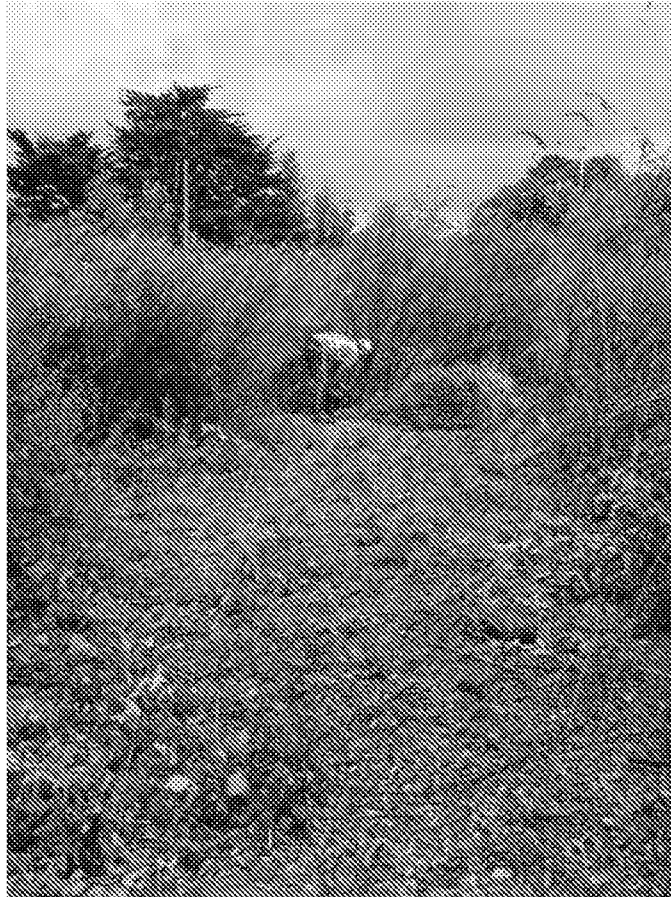
Photograph 9: Tarmac track running through the central portion of the site prior to vegetation clearance



Photograph 10: Tarmac track running through the central portion of the site following vegetation clearance



Photograph 11: Vegetation clearance works



Photograph 12: Location of historical borehole BH5



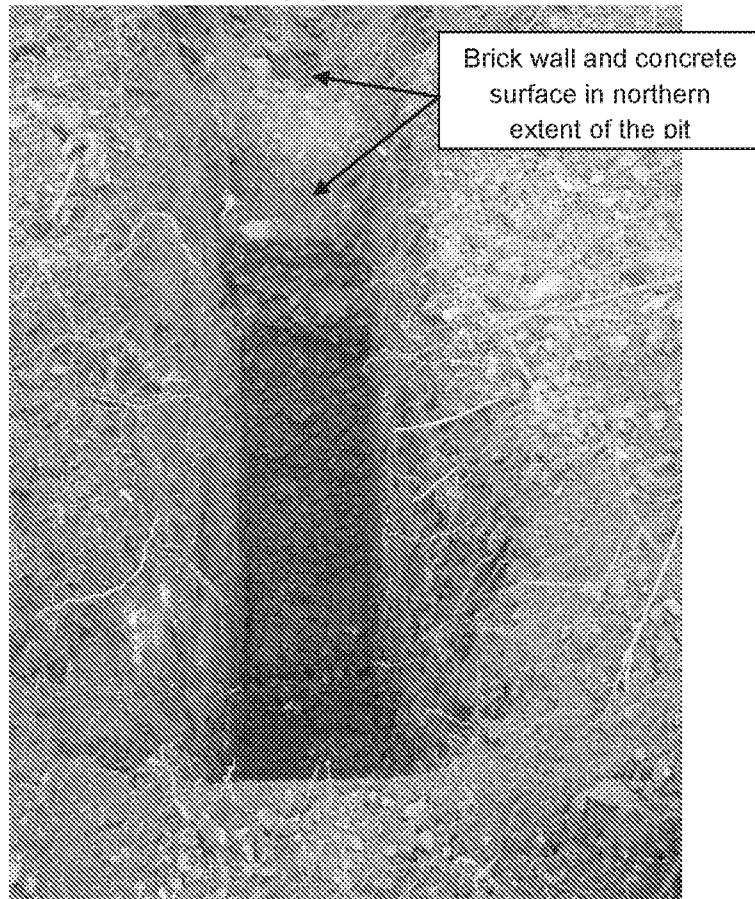
Photograph 13: TP102



Photograph 14: TP102



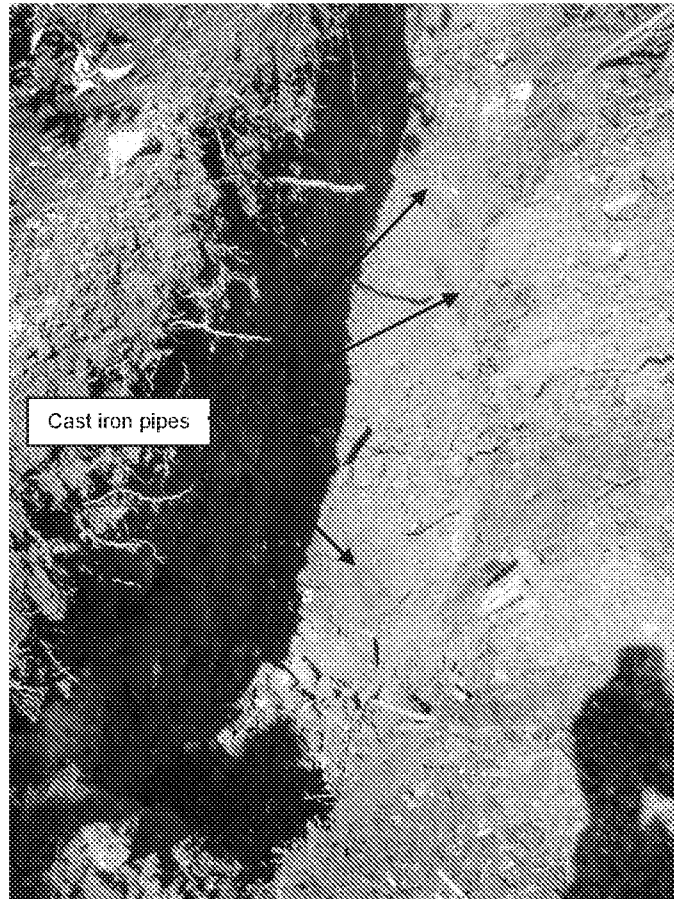
Photograph 15: TP103



Photograph 16: TP106



Photograph 17: TP108A showing three cast iron pipes



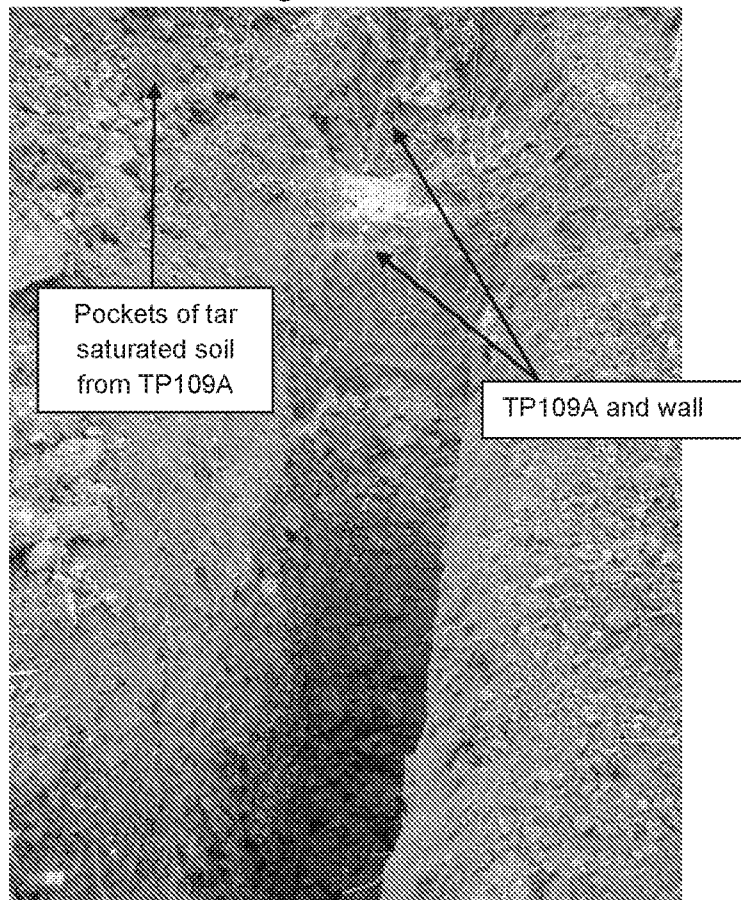
Photograph 18: Spoil from TP108B with pockets of tar saturated clay



Photograph 19: Spoil from TP108B with tar covered brick rubble



Photograph 20: TP109B



Photograh 21: Pockets of tar saturated soils in the Alluvium at TP113



Photograh 22: Spoil from TP113



Photograph 23: Concrete base (former gas holder base) at TP114



Photograph 24: TP114



Photograph 25: Free phase product in the Alluvium at BH101



Photograph 26: Free phase product in the Chalk at BH101



Photograph 27: Black staining (product) in the seams within the chalk cobbles at BH101



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Epsom, Surrey, KT18 5BW



BOREHOLE LOG

Boring Contractor : ESL					Job No : A71430/ 015162		Borehole No : BH1	
Boring method : CFA					Client : Lattice Property		Sheet 1 of 2	
Boring diameter : 100			Casing diameter : 50		Site : Arundel		Ground level : 3.67 (Relative to Ordnance datum)	
Boring equipment :					Project : Arundel Site Investigation		Date commenced : 07/06/2000	Date completed : 07/06/2000
Easting : 501285.29			Northing : 106775.30					
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		3.67		
01	S	1.00			0.80	2.87		Soft to firm brown sandy clay with much gravel and cobble of builders rubble fill. MADE GROUND
02	S	2.00						Firm light brown very gravelly CLAY. Gravel of flint. NATURAL GROUND.
03	S	3.00						Red brown silty sandy with only occasional gravel at 1.3m. Brown without sand/ silt, very gravelly at 2.5m.
04	S	5.00						Soft to firm wet light brown, with occasional fine chalk gravel (not flint) at 2.5m.
05	S	7.00			6.50	-2.83		Soft light grey decomposed CHALK with occasional dark grey staining, slight odour. NATURAL GROUND. With occasional hard core stones at 7.4m.
								Continued Next Sheet
Groundwater Depth to water strike					Remarks :			
Struck (m) : 3.30 Flow Remarks :					Logged By : ESL			

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BOREHOLE LOG

Boring Contractor : ESL					Job No : A71430/ 015162		Borehole No : BH1	
Boring method : CFA					Client : Lattice Property		Sheet 2 of 2	
Boring diameter : 100			Casing diameter : 50		Site : Arundel		Ground level : 3.67 (Relative to Ordnance datum)	
Boring equipment :					Project : Arundel Site Investigation		Date commenced : 07/06/2000	Date completed : 07/06/2000
Easting : 501285.29			Northing : 106775.30					
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		3.67		
06	S	9.00			10.00	-6.33		Soft light grey decomposed CHALK with occasional dark grey staining, slight odour. NATURAL GROUND.
								End of Borehole at 10.00 m
Groundwater					Remarks :			
Struck (m) : 3.30		Flow Remarks :			Logged By : ESL			

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BOREHOLE LOG

Boring Contractor: ESL					Job No: A71430/ 015162		Borehole No: BH2	
Boring method: CFA					Client: Lattice Property		Sheet 1 of 2	
Boring diameter: 100			Casing diameter: 50		Site: Arundel		Ground level: 3.40 (Relative to Ordnance datum)	
Boring equipment:					Project: Arundel Site Investigation		Date commenced: 08/06/2000	Date completed: 08/06/2000
Easting: 501272.21			Northing: 106727.31					
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		3.40		
01	S	1.00			0.20	3.20		Loose light brown coarse gravel fill. MADE GROUND. Soft to firm red/brown very silty CLAY. NATURAL GROUND. Much flint gravel at 0.7m.
02	S	2.00						Soft sandy with only very occasional gravel at 1.8m.
03	S	3.00						Light brown without sand at 4.0m.
04	S	5.00						
05	S	7.00			6.50	-3.10		Soft wet white to light brown completely decomposed CHALK with very occasional flint gravel. NATURAL GROUND. With occasional hard core stones at 7.2m.
Continued Next Sheet								
Groundwater ☒ Depth to water strike					Remarks:		Logged By: ESL	
Struck (m): 2.68		Flow Remarks:						

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BOREHOLE LOG

Boring Contractor : ESL				Job No : A71430/ 015162		Borehole No : BH3	
Boring method : CFA				Client : Lattice Property		Sheet 1 of 2	
Boring diameter : 100		Casing diameter : 50		Site : Arundel		Ground level : 3.22 (Relative to Ordnance datum)	
Boring equipment :				Project : Arundel Site Investigation		Date commenced : 07/06/2000	Date completed : 07/06/2000
Easting : 501295.70		Northing : 106741.54					

Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		3.22		
					0.60	2.62		Soft to firm black /brown sandy CLAY fill, with much gravel and builders rubble. With odour. MADE GROUND
01	S	1.00						Soft to firm light brown CLAY. No odour. NATURAL GROUND Red /brown with flint gravel at 0.8m. Very gravelly at 1.5m.
02	S	2.00						
03	S	3.00						With gravel at 2.8m. Soft light brown light grey with fine chalk gravel (no flint) at 3.0m. Light grey with odour at 3.2m.
04	S	5.00						Light brown with flint gravel (no chalk) and slight odour at 4.3m.
					5.80	-2.38		
05	S	7.00						White very light brown completely decomposed CHALK with occasional hard core stones. NATURAL GROUND
								Continued Next Sheet

Groundwater		Depth to water strike	Remarks :	Logged By : ESL
Struck (m)	Flow Remarks :			
3.20				

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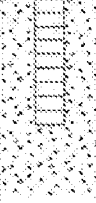
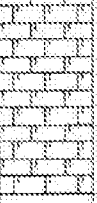
BOREHOLE LOG

Boring Contractor : ESL					Job No : A71430/ 015162		Borehole No : BH3	
Boring method : CFA					Client : Lattice Property		Sheet 2 of 2	
Boring diameter : 100			Casing diameter : 50			Site : Arundel		Ground level : 3.22 (Relative to Ordnance datum)
Boring equipment :					Project : Arundel Site Investigation		Date commenced : 07/06/2000	Date completed : 07/06/2000
Easting : 501295.70			Northing : 106741.54					
Sample Details			Groundwater Details		Depth (mBGL)	Level (mASOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		3.22		
06	S	9.00			10.00	-6.78		White very light brown completely decomposed CHALK with occasional hard core stones. NATURAL GROUND.
								End of Borehole at 10.00 m
Groundwater						Remarks :		
Struck (m) Flow Remarks :						Logged By : ESL		
3.20								

BOREHOLE LOG

Boring Contractor : ESL				Job No : A71430/ 015162		Borehole No : BH4	
Boring method : CFA				Client : Lattice Property		Sheet 1 of 2	
Boring diameter : 100		Casing diameter : 50		Site : Arundel		Ground level : 2.51 (Relative to Ordnance datum)	
Boring equipment :				Project : Arundel Site Investigation		Date commenced : 06/06/2000	Date completed : 06/06/2000
Easting : 501304.21		Northing : 106696.39					
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well			
						2.51	
					0.50	2.01	Firm brown silty gravelly clay fill. MADE GROUND
01	S	1.00					Soft to firm light brown CLAY. NATURAL GROUND
							With gravel at 1.0m.
02	S	2.00					
							Very gravelly at 2.5m.
03	S	3.00					
							Red / brown stiff silty with very occasional gravel at 3.5m.
							Firm light brown and gravelly at 4.2m.
04	S	5.00					
					5.90	-3.39	Soft wet white decomposed CHALK with occasional hard core stones and occasional flinty gravel. No odour. NATURAL GROUND.
05	S	7.00					
							Continued Next Sheet
Groundwater				Depth to water strike		Remarks :	
Struck (m)				Flow Remarks :		Logged By : ESL	
2.28							

BOREHOLE LOG

Boring Contractor : ESL				Job No : A71430/ 015162		Borehole No : BH4		
Boring method : CFA				Client : Lattice Property		Sheet 2 of 2		
Boring diameter : 100		Casing diameter : 50		Site : Arundel		Ground level : 2.51 (Relative to Ordnance datum)		
Boring equipment :				Project : Arundel Site Investigation		Date commenced : 06/06/2000	Date completed : 06/06/2000	
Easting : 501304.21		Northing : 106696.39						
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		2.51		
06	S	9.00			10.00	-7.49		Soft wet white decomposed CHALK with occasional hard core stones and occasional flinty gravel. No odour. NATURAL GROUND.
								End of Borehole at 10.00 m
Groundwater						Remarks :		Logged By : ESL
Struck (m): 2.28		Flow Remarks :						

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BOREHOLE LOG

Boring Contractor : ESL				Job No : A71430/ 015162		Borehole No : BH5		
Boring method : CFA				Client : Lattice Property		Sheet 1 of 2		
Boring diameter : 100		Casing diameter : 50		Site : Arundel		Ground level : 2.55 (Relative to Ordnance datum)		
Boring equipment :				Project : Arundel Site Investigation		Date commenced : 06/06/2000	Date completed : 06/06/2000	
Easting : 501341.00		Northing : 106735.55						
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAOD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well		2.55		
01	S	1.00			0.10	2.45		Asphalt, MADE GROUND
					0.30	2.25		Loose red, grey, brown builders rubble, MADE GROUND.
02	S	2.00						Soft to firm light brown CLAY, NATURAL GROUND.
03	S	3.00						Band of gravel at 1.1m.
04	S	5.00						With much gravel at 2.5m.
								Band of gravel at 3.7m.
								Band of gravel at 4.5m.
								Damp at 5.0m.
05	S	7.00			6.00	-3.45		Soft white light grey decomposed CHALK with occasional hard core stones and occasional flint gravel. Wet with hydrocarbon odour. NATURAL GROUND.
								Continued Next Sheet
Groundwater						Remarks :		
Struck (m) Flow Remarks :						Logged By : ESL		

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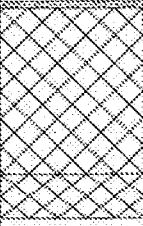


BOREHOLE LOG

Boring Contractor : ESL				Job No : A71430/ 015162		Borehole No : BH5		
Boring method : CFA				Client : Lattice Property		Sheet 2 of 2		
Boring diameter : 100		Casing diameter : 50		Site : Arundel		Ground level : 2.55 (Relative to Ordnance datum)		
Boring equipment :				Project : Arundel Site Investigation		Date commenced : 06/06/2000	Date completed : 06/06/2000	
Easting : 501341.00		Northing : 106735.55						
Sample Details			Groundwater Details		Depth (mBGL)	Level (mAGD)	Key	Description of Strata
Reference	Type (Soil/Water)	Depth (mBGL)	Strike	Well				
06	S	9.00			10.00	-7.45		Soft white light grey decomposed CHALK with occasional hard core stones and occasional flint gravel. Wet with hydrocarbon odour. NATURAL GROUND.
								End of Borehole at 10.00 m
Groundwater						Remarks :		
Struck (m) Flow Remarks :						Logged By : ESL		

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP1	
Project : Arundel Site Investigation		Easting : 501281.30		Sheet 1 of 1	
Site : Arundel		Northing : 106763.75		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.60		07/06/2000	07/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.05	3.55		Loose light brown gravel. MADE GROUND
02		1.20	2.40		Loose white to yellow chalk fill with chalk boulders. MADE GROUND
03		1.50	2.10		Becoming dirty, light brown to yellow, patches of some broken brick and metal, patches of orange to brown clay (reworked natural ground). MADE GROUND
End of Trial Pit at 1.60 m					

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.80	CHALK, MADE GROUND
02	W	1.40	Slight organic odour, water looking clean
03	S	1.60	Clay on western side of the trial pit.

Remarks :
Logged By : GMA

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TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP2	
Project : Arundel Site Investigation		Easting : 501274.54		Sheet 1 of 1	
Site : Arundel		Northing : 106751.85		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.71		07/06/2000	07/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	3.61		Loose light brown gravel. MADE GROUND.
02		1.50	2.21		Loose dark brown silty sand with patches of soft orange brown clay (re-worked) and brick, roots, scrap metal, concrete blocks (up to 30cm x 100cm x 60cm), coal, cast iron railway line/track at 1m, 250mm circular wall (broken holder base). MADE GROUND
03					Soft white to grey foul lime or chalk with patches of black staining, pockets of tar or phenol odour with timber and scrap metal. MADE GROUND
04		2.20	1.51		Tar stained gravel at 1.8m
					End of Trial Pit at 2.30 m

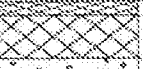
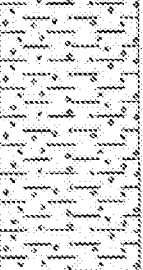
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	1.00	MADE GROUND
02	W	1.20	Dark brown water with a brown foam, tar odour.
03	S	1.80	MADE GROUND. Gas works waste.
04	S	2.20	Clay

Remarks :

Logged By : GMA

TRIAL PIT LOG

Client : Lattice Property				Job No : A71430/ 015162		Trial Pit No : TP2A	
Project : Arundel Site Investigation				Easting : 501274.54		Sheet 1 of 1	
Site : Arundel				Northing : 106751.85		Date commenced :	Date completed :
Excavated By : JCB				Ground Level (mAOD) : 3.71		07/06/2000	07/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	3.61		Loose light brown gravel. MADE GROUND
		0.40	3.31		Loose dark brown silty sand. MADE GROUND
02					Soft orange brown CLAY with gravels with red to orange clay patches. No visual or olfactory signs of contamination. NATURAL GROUND. No sign of contamination below base or adjacent.
		2.40	1.31		Turning to a soft yellow to orange clay at 1.8m.
					End of Trial Pit at 2.40 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	1.00	Gravelly CLAY
02	S	2.40	CLAY

Remarks :

Logged By : GMA

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Epsom, Surrey, KT18 5BW



TRIAL PIT LOG

Client: Lattice Property		Job No: A71430/ 015162		Trial Pit No: TP3	
Project: Arundel Site Investigation		Easting: 501267.52		Sheet 1 of 1	
Site: Arundel		Northing: 106743.94		Date commenced:	Date completed:
Excavated By: JCB		Ground Level (mAOD): 3.76		07/06/2000	07/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	3.66		Gravel fill, MADE GROUND
		1.20	2.56		Loose dark brown to black sandy silt, MADE GROUND Concrete base at 1.2m, no visual or satisfactory signs of contamination. End of Trial Pit at 1.20 m

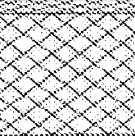
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	1.00	MADE GROUND

Remarks:

Logged By: GMA

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP3A	
Project : Arundel Site Investigation		Easting : 501267.52		Sheet 1 of 1	
Site : Arundel		Northing : 106743.94		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.76		07/06/2000	07/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	3.66		Gravel fill. MADE GROUND
		0.95	2.81		Loose dark brown to black sandy silt. MADE GROUND
02		1.20	2.56		Soft orange to brown clay with gravels. Reworked natural ground.
		1.70	2.06		Soft orange to brown sandy CLAY with gravel, no visual or olfactory contamination. NATURAL GROUND. Concrete base at 1.2m, 200mm thick. TP moved 0.5m away from the site side, outside the slab. End of Trial Pit at 1.70 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01		1.20	Sludge contaminated soil. MADE GROUND
02		1.70	CLAY

Remarks :

 Logged By : GMA

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**TRIAL PIT LOG**

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP4	
Project : Arundel Site Investigation		Easting : 501254.14		Sheet 1 of 1	
Site : Arundel		Northing : 106737.88		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 4.01		07/06/2000	07/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	3.91		Loose light brown gravel, MADE GROUND.
		1.50	2.51		Loose light brown orange sandy SILT with brick, scrap metal, blue 1960-70's glass bottle, old barrel, steel pipes, coal and cast iron scrap, no odour or visual sign of contamination, MADE GROUND. Quantity of hard core increases at 0.8m. Massy concrete at 1.5m. End of Trial Pit at 1.50 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	1.00	MADE GROUND

Remarks :

Logged By : GMA

TRIAL PIT LOG

Client : Lattice Property		Job No : A71436/ 015162		Trial Pit No : TP5	
Project : Arundel Site Investigation		Easting : 501297.40		Sheet 1 of 1	
Site : Arundel		Northing : 106763.41		Date commenced : 06/06/2000	Date completed : 06/06/2000
Excavated By : JCB		Ground Level (mAOD) : 3.35			

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01 02 05 03		0.10	3.25		Loose light brown gravel. MADE GROUND
		1.00	2.35		Loose dark brown to black sandy silt with ash, coal, broken bricks, some clay, soft light brown-orange with grey clay patches with gravel and small pockets of reworked natural ground. MADE GROUND
		1.40	1.95		At 0.7m on service road side a third 300mm cast iron pipe and a pocket of tar with contaminated soil (sampled).
		1.70	1.65		At 0.9m two 300mm cast iron pipes full of water, two were broken but the water was not under pressure i.e. it was contained in the pipe.
04		2.50	0.85		Soft black silty clay with heavy tar contamination and brick. MADE GROUND
					Loose black medium gravel with heavy tar contamination and soft light-brown-orange with grey patched clay with gravel. MADE GROUND
					Soft orange brown CLAY with gravel. NATURAL GROUND
					Tar contamination absent by 2.0m
					End of Trial Pit at 2.50 m

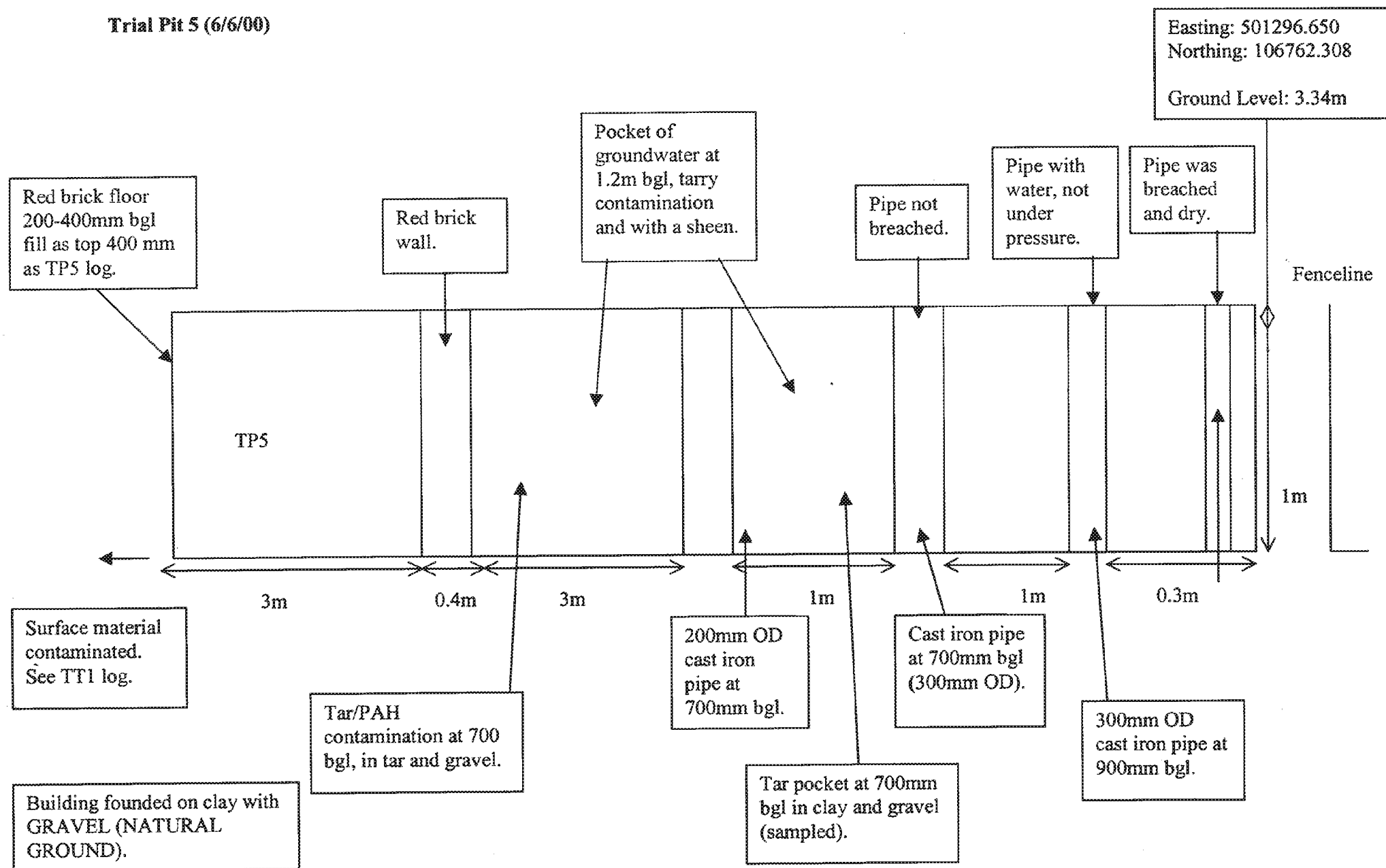
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.70	Tar contaminated soil. MADE GROUND
02	S	0.90	Tar contaminated soil. MADE GROUND
05	W	1.20	Tar contaminated water
03	S	1.30	Tar contaminated soil. MADE GROUND
04	S	2.40	Gravelly CLAY

Remarks :

Logged By : **GMA**

BG Arundel

Trial Pit 5 (6/6/00)



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TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP6	
Project : Arundel Site Investigation		Easting : 501279.84		Sheet 1 of 1	
Site : Arundel		Northing : 106717.93		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.13		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.80	2.33		Loose soft dark brown gravelly clayey SILT, rich in organic matter with roots (topsoil). NATURAL GROUND.
02		1.50	1.63		Soft orange brown CLAY. Becoming gravelly clay from 1.0m. No visual or olfactory contamination. NATURAL GROUND.
					End of Trial Pit at 1.50 m

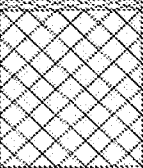
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.50	Gravelly clayey SILT
02	S	1.40	Gravelly CLAY

Remarks :

Logged By : GMA

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP7	
Project : Arundel Site Investigation		Easting : 501308.47		Sheet 1 of 1	
Site : Arundel		Northing : 106747.02		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.00		06/06/2000	06/06/2000

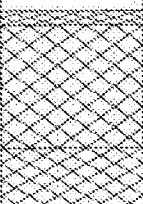
Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	2.90		Loose light brown gravel. MADE GROUND.
02		1.20	1.80		Loose dark brown to black sandy silt fill with white ash, brick and coal. MADE GROUND. Pockets of soft light brown to orange with grey chalk, reworked natural ground. TP ended at 1.2m due to two 300mm cast iron pipes. End of Trial Pit at 1.20 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.50	MADE GROUND
02	S	1.05	NATURAL GROUND on service road side of trial pit.

Remarks :
Logged By : GMA

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP8	
Project : Arundel Site Investigation		Easting : 501306.50		Sheet 1 of 1	
Site : Arundel		Northing : 106740.26		Date commenced : 06/06/2000	Date completed : 06/06/2000
Excavated By : JCB		Ground Level (mAOD) : 2.94			

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	2.84		Loose coarse gravel fill. MADE GROUND.
02		0.95	1.99		Loose dark brown black silty sandy clay fill with ash, coal, brick (red, orange, and yellow in colour). Some clinker and patches of soft orange - brown silty clay (no odour), chalk boulders and patches of spent oxide. MADE GROUND.
03		1.40	1.54		MADE GROUND Cast iron pipe at 1.2m, broken accidentally during excavation. Trial pit ended at 1.4m as broken pipe filled trial pit with water. End of Trial Pit at 1.40 m

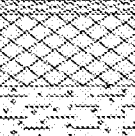
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.50	MADE GROUND
02	W	1.20	Cast iron pipe, dark brown to green water, phenol/oil odour, sheen on the water.
03	S	1.20	MADE GROUND

Remarks :

Logged By : **GMA**

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/015162		Trial Pit No : TP9	
Project : Arundel Site Investigation		Easting : 581381.54		Sheet 1 of 1	
Site : Arundel		Northing : 106725.33		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 2.95		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	2.85		Tarmac road, MADE GROUND
		0.60	2.35		Loose black, dark brown silty clay fill with coal, gravel, sand, chalk, brick work on the northern, eastern and southern sides however on the western side at 0.9m natural ground was encountered, MADE GROUND
02		1.50	1.45		Soft orange to brown CLAY with gravel, NATURAL GROUND Becoming more gravelly at 1.4m End of Trial Pit at 1.50 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.50	MADE GROUND
02	S	1.50	NATURAL GROUND

Remarks :

 Logged By : GMA

ARUN DISTRICT COUNCIL AB/88/19/PL

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Epsom, Surrey, KT18 5BW



TRIAL PIT LOG

Client : Lattice Property		Job No : A7143W 015162		Trial Pit No : TP 10A	
Project : Arundel Site Investigation		Easting : 501292.61		Sheet 1 of 1	
Site : Arundel		Northing : 106716.39		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.81		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.05 0.10	2.96 2.91		Loose light brown gravel.
02		1.90	1.11		Black top/ terrace. MADE GROUND Soft dark brown, black silty clay fill with ash, gravel, coal, brick and timber. No odour. At 1.2m, 200mm diameter clay drainage pipe breached (pipe clay). At 1.6m clay pocket on roadside of pit reworked NATURAL GROUND. (Soft orange-brown CLAY). Slow groundwater seepage at 1.7m Wet at 1.8m End of Trial Pit at 2.30 m

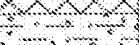
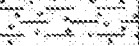
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	1.00	Non holder side. MADE GROUND
02	S	2.00	Non holder side clay. MADE GROUND

Remarks : Not enough water in the pit to sample.

Logged By : GMA

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP11	
Project : Arundel Site Investigation		Easting : 501309.20		Sheet 1 of 1	
Site : Arundel		Northing : 106707.93		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 2.59		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.05	2.54		Loose light brown gravel. MADE GROUND
		0.40	2.19		Loose dark brown sands with organic matter and some gravel. MADE GROUND
02					Soft orange to brown clay with gravel at 1.5m. No sign of visual or olfactory contamination. NATURAL GROUND.
03		1.50	1.09		End of Trial Pit at 1.50 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.20	MADE GROUND
02	S	1.20	NATURAL GROUND
03	S	1.40	NATURAL GROUND

Remarks :

Logged By : GMA

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Epsom, Surrey, KT18 5BW

WS Atkins

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP 11A	
Project : Arundel Site Investigation		Easting : 501309.20		Sheet 1 of 1	
Site : Arundel		Northing : 106707.93		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 2.59		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.20	2.39		Loose light brown clayey fill. Top soil
		0.40	2.19		Pink, light red broken concrete slab 200mm thick. MADE GROUND
		0.60	1.99		Sand and termac. MADE GROUND
		0.90	1.69		Mass concrete base intact 300mm thick.
02		1.40	1.19		Soft orange to brown CLAY with gravel. NATURAL GROUND
End of Trial Pit at 1.40 m					

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.20	Non holder side
02	S	1.20	Non holder side
03	S	1.40	Below footing slab. Holder side.

Remarks :

Logged By : GMA Depth to water strike

TRIAL PIT LOG

Client: Lattice Property		Job No: A71430/ 015162		Trial Pit No: TP12	
Project: Arundel Site Investigation		Easting: 501319.24		Sheet 1 of 1	
Site: Arundel		Northing: 106709.73		Date commenced:	Date completed:
Excavated By: JCB		Ground Level (mAOD): 2.43		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.05	2.38		Loose light brown gravel. MADE GROUND
02		0.70	1.73		Soft dark brown silty clay (organic rich). MADE GROUND
03		1.60	0.83		Soft orange light brown CLAY. NATURAL GROUND At 0.7m five 10mm dead electric cables. With some gravel at 1.2m.
					End of Trial Pit at 1.60 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.50	MADE GROUND
02	W	1.30	looks clean, no odour, orange to brown coloration
03	S	1.50	CLAY

Remarks:

Logged By: GMA Depth to water strike

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Epsom, Surrey, KT18 5BW



TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP13	
Project : Arundel Site Investigation		Easting : 501327.97		Sheet 1 of 1	
Site : Arundel		Northing : 106719.91		Date Commenced :	Date completed :
Excavated By :		Ground Level (mAOD) : 2.48		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	2.38		Wood chippings and moss. MADE GROUND.
02					Loose dark brown clayey SILT with sand and mott, no odours or sign of contamination. NATURAL GROUND.
		1.40	1.08		20 mm dead steel water pipe and 5 dead electric cables at 0.8m.
					End of Trial Pit at 1.40 m.

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.60	Clayey SILT
02	S	1.20	Clayey SILT

Remarks :

Logged By : **GMA**

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Woodcote Grove, Ashley Road
Epsom, Surrey, KT18 5BW



TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TP14	
Project : Arundel Site Investigation		Easting : 501336.52		Sheet 1 of 1	
Site : Arundel		Northing : 106740.64		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 2.63		08/06/2000	08/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01		0.10	2.53		Tarmac / black top.
02		1.00	1.63		Loose, black to brown with white specks, sandy silt with ash, chalk, glass, scrap metal, brick, clay pipe, clinker and slight gasworks odour. MADE GROUND
		1.15	1.48		
					Soft orange to light brown CLAY with gravel, reworked natural ground. MADE GROUND
					Concrete slab at base (1.15m)
					End of Trial Pit at 1.15 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.80	MADE GROUND
02	S	1.10	MADE GROUND. Clay

Remarks :
Logged By : GMA

TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/015162		Trial Pit No : TTI	
Project : Arundel Site Investigation		Easting : 501277.60		Sheet 1 of 1	
Site : Arundel		Northing : 106732.08		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.52		06/06/2000	06/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
03		0.10	3.42		Loose light brown gravel. MADE GROUND
01		0.70	2.82		Loose dark brown sandy SILT with clay and roots. NATURAL GROUND
03					Soft orange to brown CLAY with gravel. NATURAL GROUND
04		1.40	2.12		
05					End of Trial Pit at 1.60 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
03	S	0.20	Clayey sandy SILT at TTB
01	S	0.80	Gravelly CLAY at TTA
03	S	1.00	Gravelly CLAY at TTB
04	S	1.30	Gravelly CLAY at TTA
05	S	1.60	CLAY at TTA

Remarks :
Logged By : GMA

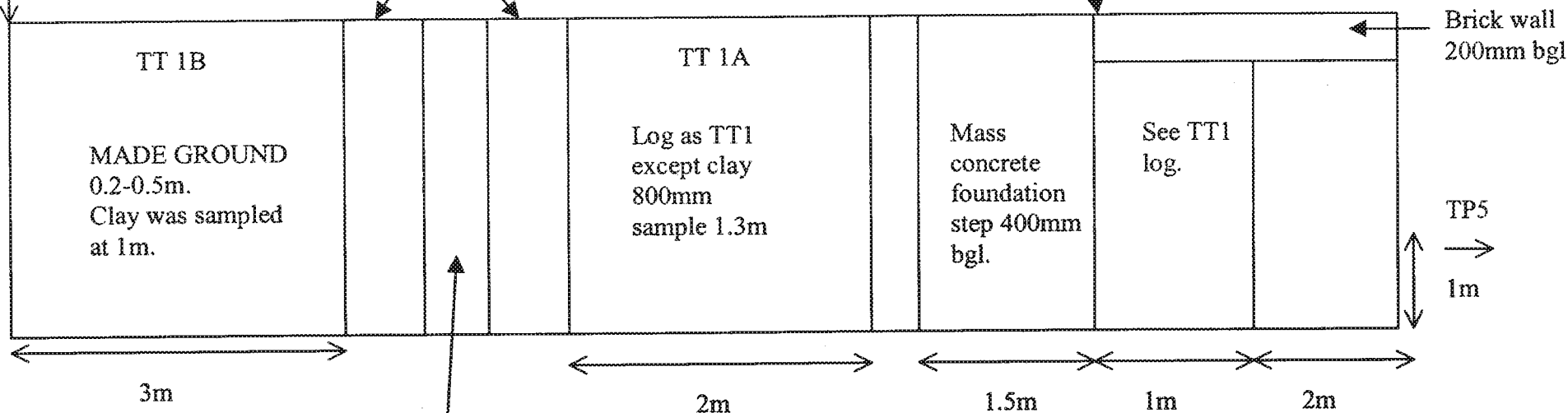
BG Arundel**Trial Trench 1 (6/6/00)**

Easting: 501277.601
 Northing: 106732.086
 Ground Level: 3.52m

100mm clay pipe

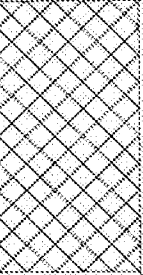
Two 300mm
 cast iron pipes
 300mm bgl.

300mm thick
 red brick wall.



TRIAL PIT LOG

Client : Lattise Property		Job No : A71430/ 015162		Trial Pit No : TT2A	
Project : Arundel Site Investigation		Easting : 501306.15		Sheet 1 of 1	
Site : Arundel		Northing : 100783.68		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 2.93		09/06/2000	09/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01					Loose light brown sandy silt with ash, bricks and concrete. MADE GROUND
02		1.90	1.03		Brick foundation from 0.7 to 1.9m. Soft orange to brown on the western side at 1.0m to base of pit. At 1.0m material became more clayey i.e. sandy silt with clay and re-worked natural ground soft orange to brown. Anaerobic odour and black staining at 1.8m. Concrete at base 1.9m. End of Trial Pit at 1.90 m

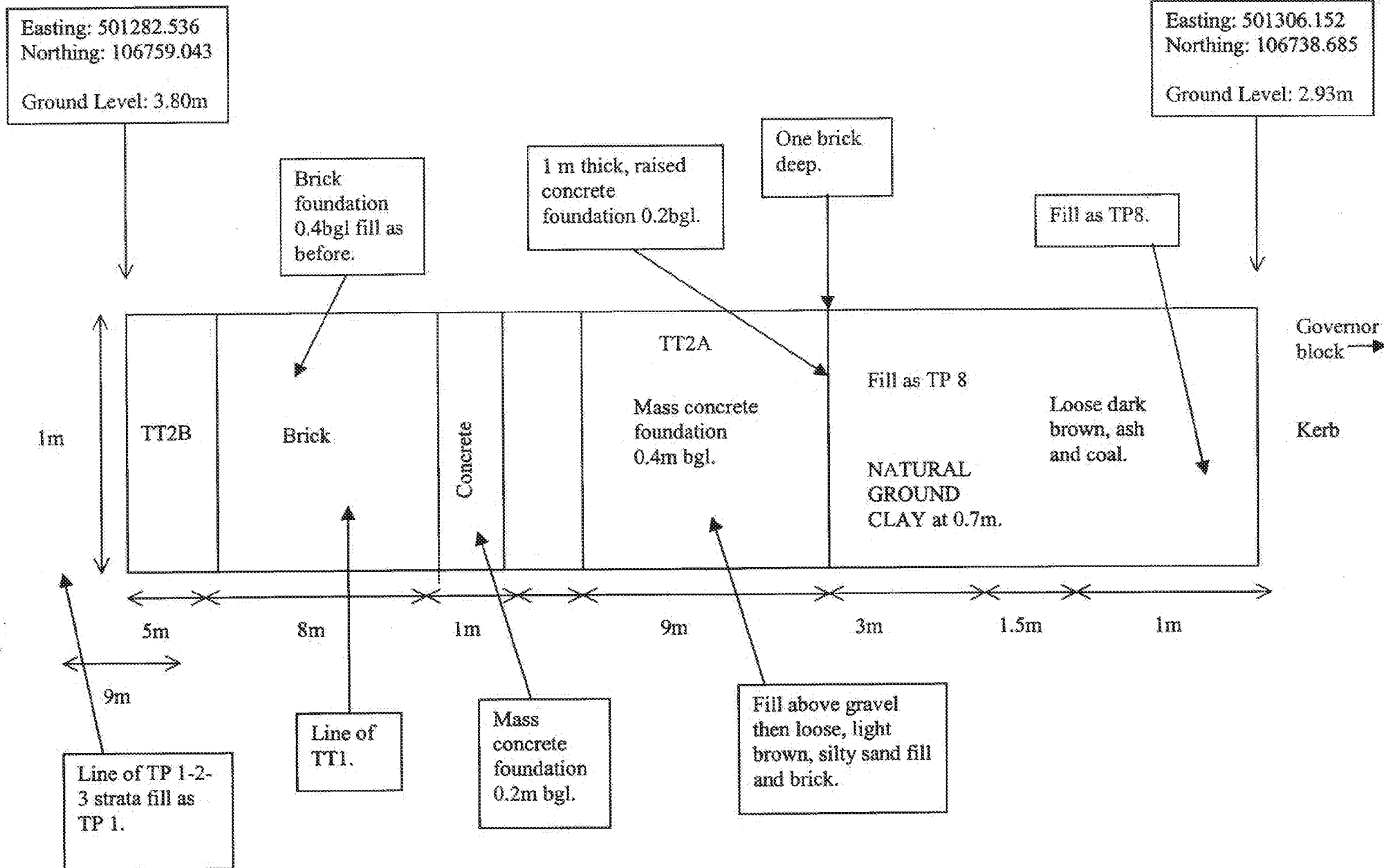
Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.60	MADE GROUND. Black stained material.
02	S	1.80	MADE GROUND

Remarks :

Logged By : GMA

BG Arundel

Trial Trench 2 (9/6/00)



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Epsom, Surrey, KT18 5BW



TRIAL PIT LOG

Client : Lattice Property		Job No : A71430/ 015162		Trial Pit No : TT2B	
Project : Arundel Site Investigation		Easting : 501282.53		Sheet 1 of 1	
Site : Arundel		Northing : 196759.04		Date commenced :	Date completed :
Excavated By : JCB		Ground Level (mAOD) : 3.80		09/06/2000	09/06/2000

Sample Location	Groundwater Strike	Depth (mBGL)	Level (mAOD)	Key	Description of Strata
01					Loose light brown silty sand with gravel and broken brick. MADE GROUND
		1.50	2.30		At 1.0m anaerobic odour and black staining 10cm hard as in TT2A.
02		2.00	1.80		Soft orange to light brown CLAY with gravel. NATURAL GROUND
					End of Trial Pit at 2.00 m

Sample Details			
Sample Reference	Type (Soil or Water)	Depth (mBGL)	Description
01	S	0.50	MADE GROUND
02	S	2.00	CLAY

Remarks :
Logged By : GMA

Project Name

Arundel

Project No.

5104362

Co-ords: 501285.42E - 106770.74N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 3.758 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

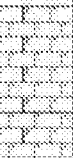
Well diam. (mm)

50

Dates: 29/06/2011-30/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					11.00	-7.24		Structureless fine CHALK gravels and occasional chalk cobbles in a soft, light grey matrix with rare flint gravels. Slight hydrocarbon odour. (CHALK)	11
								End of Borehole at 11.00 m	12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.0m



Project Name

Arundel

Project No.

5104362

Co-ords: 501297.05E - 106741.71N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 3.126 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

50

Dates: 28/06/2011-29/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25	2.88		Firm, brown, slightly sandy, gravelly CLAY with occasional brick fragments, whole bricks and clinker gravels. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint and chalk. (MADE GROUND)	
					0.50	2.63			
					0.80	2.33		Firm, light grey/brown/white CLAY with chalk cobbles/gravels and occasional brick, slate and clinker fragments. (MADE GROUND)	
					1.20	1.93		Concrete	1
								Mottled yellow, brown and grey, sandy, clayey SILT. (ALLUVIUM)	
								Stiff red/brown gravelly CLAY. Gravel fraction is fine to coarse sub-rounded to angular flint. Becoming fine to coarse sub-rounded to angular flint GRAVELS in a red/brown clay matrix from 3.2 m bgl. (ALLUVIUM)	2
									3
									4
					4.90	-1.77		Mottled light brown, orange and light grey slightly sandy, silty CLAY with occasional medium to coarse flint gravels. Sand fraction is fine. (ALLUVIUM)	5
									6
					6.30	-3.17		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	7
									8
									9
									10

Continued next sheet

Remarks: Collapsed to 10.0m



Project Name

Arundel

Project No.

5104362

Co-ords: 501297.05E - 106741.71N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 3.126 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

50

Dates: 28/06/2011-29/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					10.40	-7.27		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	
								End of Borehole at 10.40 m	
									11
									12
									13
									14
									15
									16
									17
									18
									19
		Type		Results					

Remarks: Collapsed to 10.0m



Project Name

Arundel

Project No.

5104362

Co-ords: 501310.22E - 106701.47N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 2.581 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

50

Dates: 30/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40	2.18		Stiff, dark brown, slightly sandy, slightly silty, slightly gravelly CLAY with occasional clinker, brick and chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	1
								Brown, slightly silty, slightly clayey SILT with occasional flint, clinker and brick gravels. Sand fraction is fine. (MADE GROUND)	
					1.80	0.78		Stiff red/brown gravelly CLAY. Gravel fraction is fine to coarse sub-rounded to angular flint. Becoming fine to coarse sub-rounded to angular flint GRAVELS in a red/brown clay matrix from 2.8 m bgl. Faint hydrocarbon odour from 3.5-3.65 m bgl. (ALLUVIUM)	2
					3.65	-1.07		Stiff red/brown slightly silty, sandy, gravelly CLAY. Sand fraction is fine. Gravel fraction is fine to coarse sub-rounded to angular flint. (ALLUVIUM)	4
					4.00	-1.42		Mottled light brown, orange and light grey slightly sandy, silty CLAY with occasional medium to coarse flint gravels. Sand fraction is fine. (ALLUVIUM)	
					6.80	-4.22		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	7
									8
									9

Continued next sheet

Remarks: Collapsed to 10.0m



Project Name

Arundel

Project No.

5104362

Co-ords: 501310.22E - 106701.47N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 2.581 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

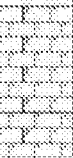
Well diam. (mm)

50

Dates: 30/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					11.00	-8.42		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	11
								End of Borehole at 11.00 m	12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.0m



Project Name

Arundel

Project No.

5104362

Co-ords: 501337.70E - 106733.99N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 2.596 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

50

Dates: 30/06/2011-01/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10	2.50		Tarmac	
					0.20	2.40			
					0.30	2.30		Dark brown, slightly clayey, gravelly, fine to medium SAND with clinker, chalk and brick fragments. Gravel fraction is fine to medium sub-angular to sub-rounded flint. (MADE GROUND)	
					0.50	2.10			
					0.80	1.80		Brick and concrete sub-base.	
					1.20	1.40		Fine to medium, light brown clayey SAND with frequent flint gravels and occasional chalk gravels, clinker and brick fragments. (MADE GROUND)	1
								Chalk cobbles and bands of light brown clay with fine chalk gravels. (MADE GROUND)	
					2.00	0.60		Stiff orange and dark grey brown CLAY with frequent rootlets, metal and brick fragments and clinker and chalk gravels (MADE GROUND)	2
								Firm dark brown, becoming orange brown, slightly silty CLAY with frequent flint, chalk, brick and clinker gravels (MADE GROUND)	
								Stiff, orange/brown, slightly silty, gravelly CLAY. Gravel fraction is fine to coarse, sub-angular to sub-rounded flint. (ALLUVIUM)	3
					3.50	-0.90		Fine to coarse sub-rounded to angular flint GRAVELS in a red/brown CLAY matrix. (AALUVIUM)	4
					5.10	-2.50		Mottled light brown, orange and light grey slightly sandy, silty CLAY with occasional medium to coarse flint gravels. Sand fraction is fine. (ALLUVIUM)	5
					6.30	-3.70		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	6
									7
									8
									9

Continued next sheet

Remarks: Collapsed to 10.4m



Project Name

Arundel

Project No.

5104362

Co-ords: 501337.70E - 106733.99N

Hole Type

HSA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: 2.596 m AOD

Scale

1:50

Client:

National Grid Porperty Holdings

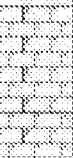
Well diam. (mm)

50

Dates: 30/06/2011-01/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					11.00	-8.40		Off-white structureless CHALK comprising fine chalk gravels and solid chalk cobbles in a clay matrix. (CHALK)	11
								End of Borehole at 11.00 m	12
									13
									14
									15
									16
									17
									18
									19

Remarks: Collapsed to 10.4m



Project Name

Arundel

Project No.

5104362

Co-ords: 501290.77E - 106721.03N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.10 ppm	0.40 0.60 0.90			Stiff, orange-brown sandy, gravelly CLAY with occasional clinker and brick fragments. Sand fraction is fine to medium. Gravel fraction is fine to medium sub-angular to sub-rounded chalk and flint. (MADE GROUND)	
								Black, ashy, slightly clayey, fine to medium SAND with clinker and flint gravels and occasional chalk cobbles. (MADE GROUND)	1
								Firm yellow brown, slightly sandy, gravelly CLAY with occasional chalk gravels and clinker fragments. Sand fraction is fine to coarse. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. (MADE GROUND)	
								Firm to stiff, orange brown, gravelly CLAY. Gravel fraction is fine to coarse sub-angular flint. (ALLUVIUM)	2
					2.50			End of Borehole at 2.50 m	
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501274.10E - 106724.01N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

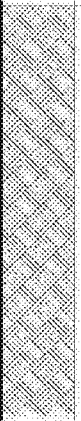
National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	PID	0.30 ppm	0.30			Dark brown, very sandy, gravelly CLAY with frequent brick, chalk and clinker fragments. Sand fraction is fine to medium sand. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. (MADE GROUND)	
		0.40-0.50	ES		0.80			Orange, brown, slightly clayey SILT with occasional sub-rounded to sub-angular, fine to medium flint gravels. (ALLUVIUM)	1
		1.80	PID	0.00 ppm	1.60			Fine to coarse, sub-rounded to angular flint GRAVELS in a pinky-orange brown CLAY matrix with occasional chalk gravels. (ALLUVIUM)	
		1.80-2.00	ES		2.55			Mottled yellow, brown and grey, sandy, clayey SILT. (ALLUVIUM)	2
					2.70			Firm yellow, brown, silty CLAY with frequent chalk gravels and structureless chalky clay. (ALLUVIUM)	3
								End of Borehole at 2.70 m	
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501296.02E - 106738.83N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	PID	0.20 ppm	0.20			Firm, dark brown, very sandy, slightly silty, gravelly CLAY with frequent brick, chalk and clinker fragments. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. (MADE GROUND)	
		0.20-0.30	ES		0.40				
					0.80			Dark brown/black, slightly silty, gravelly, fine SAND with frequent brick and chalk fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. (MADE GROUND)	1
					1.00			Firm, brown, slightly sandy, slightly silty, gravelly CLAY with frequent brick fragments and occasional clinker and chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. (MADE GROUND)	
								Firm to stiff, orange brown, gravelly CLAY with occasional chalk gravels. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint (ALLUVIUM)	2
					2.30			Fine to coarse, sub-rounded to angular flint GRAVELS and COBBLES in an orange brown clay matrix. (ALLUVIUM)	
								End of Borehole at 2.30 m	
									3
									4
									5
									6
									7
									8
									9

Remarks: Level concrete surface at 0.55m bgl with a brick wall at the southern extent located in the northern extent of the pit. Location moved further south.



Project Name

Arundel

Project No.

5104362

Co-ords: 501312.28E - 106701.78N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.00 ppm	0.50			Firm, brown, very sandy, slightly silty, gravelly CLAY with occasional glass, brick, clinker and chalk fragments. Sand fraction is fine. Gravel fraction is fine to coarse, sub-angular to sub-rounded flint. Fine to coarse flint gravel band at 0.3 to 0.4 m bgl. (MADE GROUND)	
					0.95			Stiff, light brown, silty, friable CLAY with occasional medium to coarse flint gravels. (ALLUVIUM)	1
		1.50 1.50-1.60	PID ES	0.10 ppm				Fine to very coarse, sub-rounded to angular flint GRAVELS in a light brown/orange silty friable CLAY matrix with rare chalk gravels. (ALLUVIUM)	2
					2.50			End of Borehole at 2.50 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501338.94E - 106733.07N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 16/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05			Tarmac	
		0.90 0.90-1.00	PID ES	0.10 ppm	0.90			Brick rubble (including whole bricks) with fine chalk and brick gravels in a fine to coarse grey sand matrix. (MADE GROUND)	1
					1.30			Bands of coarse sand and fine gravel sized clinker gravels and black ash, and a rust brown slightly clayey fine to coarse SAND. (MADE GROUND)	
		2.00 2.00-2.10	PID ES	0.00 ppm				Stiff, mottled orange/brown/light grey, slightly silty CLAY with frequent flint gravels and rootlets. (ALLUVIUM)	2
					2.50			End of Borehole at 2.50 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501260.00E - 106736.88N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.30 ppm				Dark brown, silty, sandy, gravelly CLAY with frequent brick (including whole bricks), clinker and chalk fragments and occasional concrete fragments. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. Metal pipe fragments at 0.4 m bgl. (MADE GROUND)	
		0.80 0.80-0.90	PID ES	0.40 ppm	0.95 1.10			Concrete approximately 0.1 to 0.2 m thickness.	1
					1.50			Coarse, light grey, slightly clayey SAND with occasional fine to coarse, sub-angular to rounded flint gravels. (FILL?)	
					2.10			Orange, brown, very gravelly CLAY with occasional flint cobbles. Gravel fraction is fine to coarse, sub-rounded to angular flints. (ALLUVIUM)	2
		2.60 2.60-2.80	PID ES	0.00 ppm	2.80			Mottled, orange and light grey, silty CLAY becoming mottled yellow grey, slightly clayey silt from 2.6 m bgl. (ALLUVIUM)	
								End of Borehole at 2.80 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501274.82E - 106754.58N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 16/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.50 ppm	0.10			Dark brown, sandy CLAY with rootlets. Sand fraction is fine to medium (TOPSOIL)	
					1.60			Soft to firm, brown, slightly silty, gravelly CLAY with frequent chalk, brick (including whole bricks) and glass fragments. Gravel fraction is fine to coarse sub-angular to sub-rounded flints. (MADE GROUND)	1
					2.30			Stiff, light brown, slightly silty CLAY with frequent brick fragments (including whole bricks) and flint gravels. Becoming red brown with much brick from 0.6 m bgl with occasional clinker fragments and flint cobbles. (MADE GROUND)	2
		2.40 2.40-2.50	PID ES	0.00 ppm	2.50			Soft to firm, light brown, slightly silty CLAY with occasional medium flint gravels. (ALLUVIUM)	
								End of Borehole at 2.50 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501283.26E - 106769.40N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50 0.50-0.60	PID ES	0.20 ppm	1.20			Fine to medium, brown, slightly silty, clayey, gravelly SAND with frequent brick, chalk, clinker, coal and concrete fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. (MADE GROUND)	1
								End of Borehole at 1.20 m	2
									3
									4
									5
									6
									7
									8
									9

Remarks: Trial pit terminated at 1.2 m bgl due to cast iron pipes.



Project Name

Arundel

Project No.

5104362

Co-ords: 501283.70E - 106770.85N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.40 1.40-1.50	PID ES	0.60 ppm	0.90			Fine to medium, brown, slightly silty, clayey, gravelly SAND with frequent brick, chalk, clinker, coal and concrete fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. Band of chalk gravels/cobbles from 0.2 to 0.4 m bgl. (MADE GROUND)	
					1.90			Firm, brown, silty, gravelly CLAY with occasional brick, chalk and clinker fragments. Gravel fraction is fine to medium, sub-angular to sub-rounded flint. Slight hydrocarbon odour from 1.4-1.9 m bgl. (MADE GROUND)	1
					2.50			Soft to firm, sandy, gravelly CLAY with frequent brick fragments (including whole bricks). Strong hydrocarbon odour from 1.9-2.5 m bgl. Black, hydrocarbon saturated soil from 1.9 m bgl. (MADE GROUND)	2
								End of Borehole at 2.50 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501283.67E - 106729.47N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.00 ppm				Dark brown, sandy, slightly silty, gravelly CLAY with frequent brick, clinker and occasional chalk gravels. Sand fraction is fine to medium. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	1
					1.20			Firm, orange, brown, very sandy, slightly silty, gravelly CLAY with frequent brick and rare clinker gravels. Sand fraction is fine to medium. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	
					1.60			Fine to coarse, sub-rounded to angular GRAVELS in orange, brown clay matrix with occasional chalk gravels. (ALLUVIUM)	2
					2.20			Light yellow, brown/grey, slightly clayey, sandy SILT. Sand fraction is fine to medium. (ALLUVIUM)	
					2.50			End of Borehole at 2.50 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501280.99E - 106746.04N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40 0.40-0.50	PID ES	0.20 ppm	0.20 0.50			Fine, dark brown, slightly silty, slightly clayey, gravelly SAND with frequent chalk and brick fragments. Gravel fraction is fine to medium sub-rounded to sub-angular flint. (MADE GROUND)	
								Firm to stiff, light brown, sandy, slightly gravelly CLAY with frequent chalk cobbles, brick (including whole bricks) and clinker fragments. Sand fraction is fine to medium. Gravel fraction is fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	1
								Firm to stiff, orange, brown, gravelly CLAY with occasional chalk gravels. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. Becoming fine to coarse, sub-rounded to angular flint gravels in an orange brown clay matrix with occasional chalk gravels. (ALLUVIUM)	2
					2.30			End of Borehole at 2.30 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501293.14E - 106763.74N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.90 0.90-1.00	PID ES	0.70 ppm	0.20			Firm, dark brown, slightly silty, gravelly, very sandy CLAY. Sand fraction is fine to medium. Gravel fraction is fine to medium sub-angular to rounded flint (MADE GROUND)	
		1.40 1.40-1.60	PID ES	12.70 ppm	1.10			Bands of fine, light grey brown, slightly silty SAND and GRAVELS and stiff, orange brown, slightly silty, gravelly CLAY with frequent clinker fragments and occasional glass and solidified tar fragments. Gravel fraction is fine to coarse sub-rounded to angular flint. (MADE GROUND)	1
					1.60			Brown, sandy, gravelly CLAY with frequent chalk, clinker and brick fragments. Sand fraction is fine to medium. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. Pockets of saturated tarry soils from 1.3m. Moderate tar odour from 1.3m bgl. Strong tar odour from 1.4m bgl. (MADE GROUND)	2
					2.30			Fine to coarse sub-rounded to sub-angular flint GRAVELS in an orange sandy CLAY matrix with occasional brick and chalk gravels from 1.6-1.7m. Slight hydrocarbon/tar odour and occasional black staining from 1.6-2.0m bgl. (MADE GROUND)	
								End of Borehole at 2.30 m	
									3
									4
									5
									6
									7
									8
									9

Remarks: Cast iron pipe identified at shallow depth in southern extent of trial pit - trial pit relocated.



Project Name

Arundel

Project No.

5104362

Co-ords: 501290.67E - 106743.26N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.60 0.60-0.80	PID ES	0.40 ppm	0.20			Firm, dark brown, very sandy, slightly silty, gravelly CLAY with frequent brick, chalk and clinker fragments. Sand fraction is fine. Gravel fraction is fine to coarse sub-angular to sub-rounded flint. (MADE GROUND)	
					0.80			Firm, brown, very sandy, gravelly CLAY with brick rubble (including whole bricks), concrete, metal and slate. Band of black solidified tar/clinker at 0.7-0.75 m bgl. Slight fatty odour from 0.2-0.8m bgl. (MADE GROUND)	1
					1.30			Firm to stiff, light orange brown, slightly sandy, gravelly CLAY with occasional chalk gravels. Sand fraction is fine. Gravel fraction is fine to coarse sub-rounded to sub-angular flint (MADE GROUND?)	
								Firm to stiff, orange brown, gravelly CLAY with occasional chalk gravels. Becoming pinky orange from 2.0m bgl. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. (ALLUVIUM)	2
		2.50 2.50-2.60	PID ES	0.10 ppm	2.60 2.70			Yellow brown, silty, fine to medium SAND with frequent fine to coarse gravels and cobbles of chalk and pockets of soft putty chalk. (ALLUVIUM)	3
								End of Borehole at 2.70 m	
									4
									5
									6
									7
									8
									9

Remarks: Damp from 2.3



Project Name

Arundel

Project No.

5104362

Co-ords: 501298.90E - 106759.72N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 15/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.80 0.80-0.90	PID ES	2.40 ppm	0.50			Fine to medium, dark brown, clayey, slightly silty, gravelly SAND with frequent chalk, brick and clinker fragments. Gravel fraction is fine to coarse flint. (MADE GROUND)	
		1.40 1.40-1.60	PID ES	18.20 ppm	1.00			Orange brown, slightly silty, sandy, gravelly CLAY with occasional chalk gravels and frequent brick and clinker fragments. Sand fraction is fine. Gravel fraction is fine to coarse flint (MADE GROUND)	1
					1.25			Firm, orange brown, gravelly CLAY with occasional brick fragments and chalk gravels. Gravel fraction is fine to coarse flint. (MADE GROUND)	
					2.30			Black fine to coarse sub-rounded to sub-angular flint GRAVELS in a CLAY matrix (with pockets of hydrocarbon saturated tarry clay). Strong hydrocarbon/tarry odour from 1.25-2.3m bgl. (MADE GROUND/ALLUVIUM?)	2
								End of Borehole at 2.30 m	
									3
									4
									5
									6
									7
									8
									9

Remarks: Wet at 2.2m bgl.



Project Name

Arundel

Project No.

5104362

Co-ords: 501304.05E - 106707.34N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 14/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.00 ppm	0.55			Light brown, very silty, friable CLAY with occasional flint, chalk and brick gravels. Breeze block and solidified tar at 0.3 m bgl. (MADE GROUND)	
					0.85			Reinforced concrete approximately 0.3 m thickness.	
		1.20 1.20-1.30	PID ES	0.20 ppm	1.40			Firm, light orange brown, silty CLAY with occasional flint gravels. (ALLUVIUM)	1
					2.70			Fine to coarse, sub-rounded to angular flint GRAVELS in an orange/brown, silty, friable CLAY matrix with rare chalk gravels. (ALLUVIUM)	2
								End of Borehole at 2.70 m	3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501317.22E - 106729.98N

Hole Type

TP

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 16/06/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			Tarmac	
					0.25			Brick and concrete sub-base.	
					0.40			Fine to medium, light brown clayey SAND with frequent flint gravels and occasional chalk gravels and brick fragments. (MADE GROUND)	
		0.90	PID	0.10 ppm	0.90			Chalk cobbles and bands of light brown clay with fine chalk gravels. (MADE GROUND)	1
		0.90-1.00	ES		1.10			Stiff orange and dark grey brown CLAY with frequent rootlets, metal and brick fragments and clinker and chalk gravels (MADE GROUND)	
								Firm dark brown, becoming orange brown, slightly silty CLAY with frequent flint, chalk, brick and clinker gravels (MADE GROUND)	
		2.30	PID	0.00 ppm	2.00			Firm orange brown slightly silty CLAY with frequent flint gravels. (ALLUVIUM)	2
		2.30-2.50	ES		2.50			End of Borehole at 2.50 m	
									3
									4
									5
									6
									7
									8
									9

Remarks: Three cast iron pipes identified in original trial pit at shallow depth. Trial pit relocated.



Project Name

Arundel

Project No.

5104362

Co-ords: 501257.94E - 106734.82N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30			Soft to firm, brown, slightly sandy, gravelly CLAY with occasional solidified tar fragments. Gravel medium to coarse sub-rounded flint. (MADE GROUND)	1
								End of Borehole at 0.30 m	2
									3
									4
									5
									6
									7
									8
									9
		Type		Results					

Remarks: Solidified tar/concrete at 0.3 m? HA relocated.



Openreach Plant Maps Requested

NewSite Office (addresses can be located from [here](#))
[REDACTED]

Dear Sir/Madam,

Thank you for your request to [REDACTED]

You have downloaded copies of our drawings marked up to show the approximate location of Openreach apparatus, which is present in the immediate vicinity of your works. It is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works made near to Openreach apparatus, which may, exist at various depths and may deviate, from the marked route.

To avoid damage it is recommended that mechanical excavators or borers are not used within 600mm of Openreach plant. Please ensure that our equipment is not enclosed, blocked, covered or otherwise obstructed by your plant. In the event of clearance not being adequate we anticipate that your plant is either resited, or an order is placed with Openreach for rearrangements of its plant. If there are any difficulties with the Map please ring 0800 616866.

Please contact our Network Protection Service if required by dialling [REDACTED] by Email on [REDACTED] giving seven days notice of your commencement date. This will provide you with on-site advice and a check of location for any Openreach apparatus.

Further to this, I hope the following points will assist you at the new development: -

Openreach has a licence obligation to provide service to any end customer requiring a connection. A Developer would not normally be charged for provision of service, our standard connection charges would apply to the end user when orders are placed with the communication provider of choice. However, should a Developer insist on an underground service in an area where Openreach plant is provided overhead, charges may be incurred.

When the Developer has obtained contract and planning permission Openreach would request a 'Clean', scaled Site Layout, Location Map and a covering letter be sent to the relevant newSite Office. We would particularly request that you give details of your programmed site start date and likely first occupancy date where possible. To obtain contact details of the newSite office covering the development area click on the URL below.

[REDACTED]

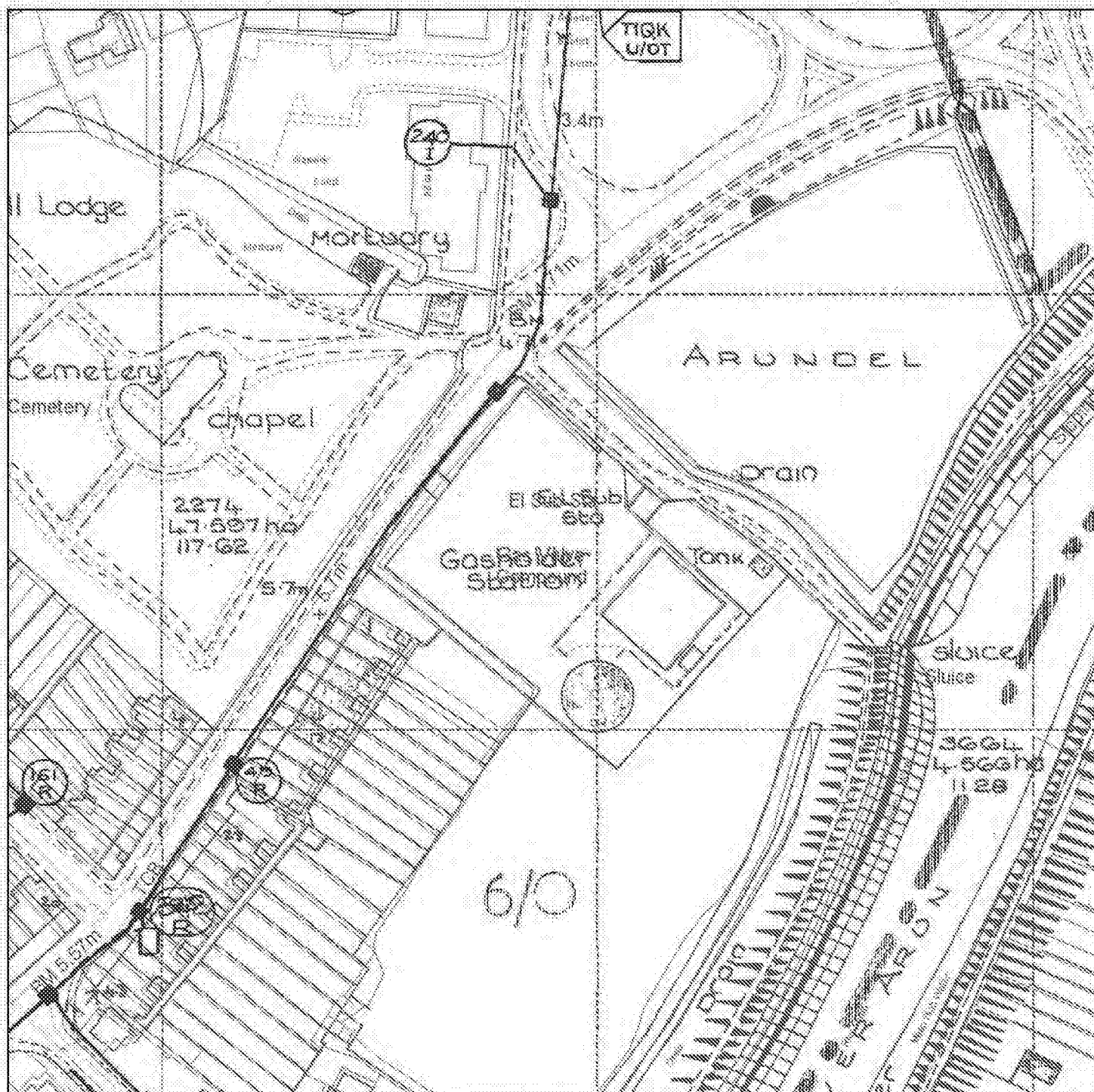
Where a development affects existing Openreach apparatus in the public highway, the cost of any necessary protection or diversionary works must be borne by the Developer. In this case where a budget estimate is required a Site Plan, Location Map and a covering letter should be forwarded to the Repayments Project Office. Please visit

[REDACTED] for contact details of the Repayments Office covering the development area.

Yours faithfully,

Openreach newSites

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

DIAL BEFORE YOU DIG

FOR PROFESSIONAL ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS

ADVANCE NOTICE REQUIRED
(Office hours: Monday-Friday 08.00 to 17.00)

Tel: 0800 9173993
E-mail: dbyd@openreach.co.uk
Website: www.dialbeforeyoudig.com

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ARUN DISTRICT COUNCIL 01243 810100 Copyright British Telecommunications plc 100028040

KEY TO BT SYMBOLS

	UNDERGROUND PLANT		POLE
	OVERHEAD PLANT		CABINET
	JOINT BOX		BURIED JOINT
	DISTRIBUTION POINT		JOINTING POST
	MANHOLE		PROPOSED U/G
	DP BOUNDARY		PROPOSED O/H
	OTHER BT BOUNDARY		PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

openreach

an BT Group business



BT ref: CHQ06105F

Map reference (centre): TQ0129106740

Issued: 30/05/11 06:21:03

Project Name

Arundel

Project No.

5104362

Co-ords: 501257.94E - 106734.82N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

5

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30 0.30-0.40	PID ES	0.80 ppm	0.40 0.60			Soft to firm, brown, slightly sandy, gravelly CLAY with frequent brick and chalk and occasional coal fragments. Sand fraction is fine to coarse. Gravel fraction is fine to coarse sub-rounded to sub-angular flint. (MADE GROUND)	1
		0.90 0.90-1.00	PID ES	0.30 ppm	1.20			Soft to firm, brown, silty CLAY with frequent fine to coarse flint gravels, rare brick fragments and occasional coal fragments. (MADE GROUND)	
								Soft to firm, orange/pink brown, very gravelly CLAY. Gravel fraction is fine to coarse, sub-rounded to angular flint. Becoming clayey from 0.95 m bgl. (ALLUVIUM)	
								End of Borehole at 1.20 m	
									2
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501285.42E - 106748.09N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

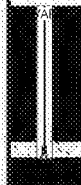
Well diam. (mm)

5

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	PID	0.40 ppm	0.25			Soft to firm, brown, slightly sandy, slightly silty, gravelly CLAY with frequent brick and occasional clinker and coal fragments. Sand fraction fine to medium. Gravel fraction is fine to medium sub-angular to sub-rounded flint. (MADE GROUND)	
		0.30-0.40	ES		0.80			Soft to firm, brown, slightly silty, gravelly CLAY with frequent chalk gravels and occasional coal fragments. Gravel fraction is fine to coarse flint. (MADE GROUND)	1
					1.00			Firm red/orange/brown, gravelly CLAY. Gravel fraction fine to coarse flint. (ALLUVIUM)	
								End of Borehole at 1.20 m	
									2
									3
									4
									5
									6
									7
									8
									9

Remarks:



Project Name

Arundel

Project No.

5104362

Co-ords: 501293.55E - 106733.99N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

5

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 0.20-0.30	PID ES	0.20 ppm				Firm, brown, slightly silty, slightly sandy CLAY with frequent brick fragments and flint gravels, and occasional clinker, coal and chalk gravels. Becoming lighter brown from 0.5 m bgl. (MADE GROUND)	
					0.70				
					1.00			Orange CLAY matrix with fine to coarse, sub-rounded to angular flint gravels with rare bricks and clinker fragments. (MADE GROUND)	1
								End of Borehole at 1.20 m	
									2
									3
									4
									5
									6
									7
									8
									9
		Type	Results						

Remarks:





SCALE: 1:1562

USER ID: mb05573

DATE: 12/05/2011

INTERNAL USE ONLY

GRID REFERENCE:
E901287, N158745, T30108

LP MAINS

MP MAINS

IP MAINS

LHP MAINS

HISTORY DATA

LAs

GTs

SSSIs

This plan shows the location of those pipes owned by SGN Gas Networks ("SGN") by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area and are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HSE (2007), must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. This information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

Intranet MAPS Version 1.9

West Sussex County Area

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Some examples of Pipe Senses

Valve: Siphon: Depth of Cover: Diameter Change: Material Change:

Project Name

Arundel

Project No.

5104362

Co-ords: 501309.49E - 106714.23N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

Well diam. (mm)

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.02			Soft to firm, dark brown, slightly sandy, silty CLAY with organic matter/leaves. (TOPSOIL)	
					0.55			Firm, orange, brown silty friable CLAY with occasional flints, chalk gravels and brick fragments. (MADE GROUND) Concrete.	
								End of Borehole at 0.55 m	1
									2
									3
									4
									5
									6
									7
									8
									9

Remarks: Concrete at 0.55. HA relocated.



Project Name

Arundel

Project No.

5104362

Co-ords: 501308.88E - 106714.44N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

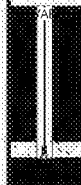
Well diam. (mm)

5

Dates: 13/07/2011

Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	PID	0.20 ppm	0.10			Fine to coarse, sub-rounded to sub-angular flint GRAVEL with organic matter. (TOPSOIL)	
		0.30-0.40	ES		0.60			Brown, firm, sandy, gravelly CLAY with frequent brick, chalk, clinker and occasional coal fragments. Sand fraction fine to medium. Gravel fraction fine to coarse, sub-angular to sub-rounded flint. (MADE GROUND)	
		1.00	PID	0.20 ppm	1.20			Orange, brown, firm, silty, friable CLAY with occasional coarse to fine flint chalk gravels. Becoming very gravelly from 0.8 m bgl. (MADE GROUND)	1
		1.00-1.10	ES					End of Borehole at 1.20 m	2
									3
									4
									5
									6
									7
									8
									9

Remarks:





Lucy Hay
Atkins Ltd
SWAH
Ashley Avenue
Epsom
KT18 5AL

i2 Analytical Ltd.
Building 19,
BRE,
Garston,
Watford,
WD25 9XX

Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name:	Arundel Gasworks	Samples received on:	20/06/2011
Your job number:		Samples instructed on:	20/06/2011
Your order number:		Analysis completed by:	07/07/2011
Report Issue Number:	2	Report issued on:	07/07/2011
Samples Analysed:	7 leachate samples - 35 soil samples - 1 water sample		

Sign:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180249	180250	180251	180252	180253
Sample Reference	TP102	TP104	TP105	TP1088	TP111
Sample Number	ES1	ES2	ES1	ES1	ES2
Depth (m)	0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled	15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.9	7.8	8.0	7.4	7.8
Electrical Conductivity	µS/cm	10	NONE	< 10	40	140	290	730
Total Cyanide	µg/l	10	ISO 17025	15	< 10	24	240	420
Complex Cyanide	µg/l	25	NONE	< 25	< 25	< 25	240	420
Free Cyanide	µg/l	25	NONE	< 25	< 25	< 25	< 25	< 25
Free Cyanide (Low Level)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30	< 30	< 30
Sulphate as SO ₄	µg/l	100	ISO 17025	110	2300	27000	80000	220000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4	NONE	< 4.0	< 4.0	< 4.0	4.3	< 4.0
Ammonium as NH ₄	µg/l	15	NONE	88	110	96	71	17000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	6.8	6.8	5.9	6.7	20

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Butyl Phenols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.8
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	8.0
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	9.1
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	4.0
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.2
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	28
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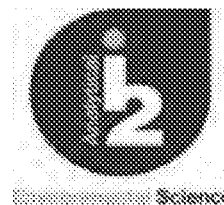
Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	1.1	1.3	3.5	3.6
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.19	0.23	< 0.10	< 0.10	< 0.10
Chromium (dissolved)	µg/l	0.4	ISO 17025	9.4	6.1	3.0	3.1	2.2
Copper (dissolved)	µg/l	0.7	ISO 17025	14	16	15	17	14
Iron (dissolved)	mg/l	0.004	ISO 17025	5.5	3.3	1.6	0.39	0.40
Lead (dissolved)	µg/l	1	ISO 17025	9.2	5.6	15	18	4.3
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.8	3.2	4.5	1.8	1.6
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP1088	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	11	11	6.9	9.2	3.4



Lucy Hay
Atkins Ltd
SWAH
Ashley Avenue
Epsom
KT18 5AL

i2 Analytical Ltd.
Building 19,
BRE,
Garston,
Watford,
WD25 9XX

Analytical Report Number : 11-28864

Project / Site name: Arundel

Samples received on: 19/07/2011

Your job number:

Samples instructed on: 19/07/2011

Your order number:

Analysis completed by: 01/08/2011

Report Issue Number: 1

Report issued on: 01/08/2011

Samples Analysed: 2 soil samples - 8 water samples

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 - 711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Iss No 11-28864-1

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The results included within the report are representative of the samples submitted for analysis.



4841



Science

Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number	184379	184380			
Sample Reference	SPOILHEAP 1	SPOILHEAP 2			
Sample Number	None Supplied	None Supplied			
Depth (m)	None Supplied	None Supplied			
Date Sampled	15/07/2011	15/07/2011			
Time Taken	None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	10	5.6
Total mass of sample received	kg	0.001	NONE	0.42	0.44
Asbestos Fibre Screen	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH units	N/A	MCERTS	7.2	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	NONE	< 1.0	< 1.0
Free Cyanide	mg/kg	1	NONE	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	0.028	0.12
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	17	44
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	1.3	2.7
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.2	3.4

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.2
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.96
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	3.9
Fluorene	mg/kg	0.2	MCERTS	< 0.20	3.5
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	33
Anthracene	mg/kg	0.1	MCERTS	< 0.10	11
Fluoranthene	mg/kg	0.2	MCERTS	0.29	54
Pyrene	mg/kg	0.2	MCERTS	0.27	45
Benzo(a)anthracene	mg/kg	0.2	MCERTS	< 0.20	26
Chrysene	mg/kg	0.05	MCERTS	< 0.05	22
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.28	29
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	16
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.25	29
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	15
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	2.9
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	16

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.6	310
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Iss No 11-28864-1

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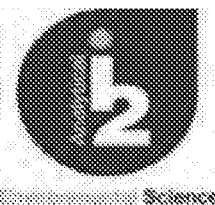
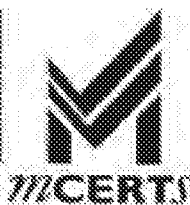
ARUN DISTRICT COUNCIL AB/88/19/PL

The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184379	184380			
Sample Reference				SPOILHEAP 1	SPOILHEAP 2			
Sample Number				None Supplied	None Supplied			
Depth (m)				None Supplied	None Supplied			
Date Sampled				15/07/2011	15/07/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	13			
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	32			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	23			
Lead (aqua regia extractable)	mg/kg	2	MCERTS	12	28			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3			
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	19	24			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0			
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	47	65			

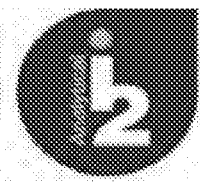
Monocaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0			
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0			
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0			

Petroleum Hydrocarbons

TPH7 - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0			
TPH7 - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH7 - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH7 - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0			
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10			

TPH7 - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH7 - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	4.6			
TPH7 - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	45			
TPH7 - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	860			
TPH7 - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	2400			
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	3400			



Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number	184371	184372	184373	184374	184375
Sample Reference	BH101S	BH102	BH103	BH104	BH105
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled	15/07/2011	15/07/2011	15/07/2011	15/07/2011	15/07/2011
Time Taken	1150	1000	1100	0910	0830
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH units	N/A	ISO 17025	7.8	6.9	6.9	7.0	6.9
Electrical Conductivity	µS/cm	10	NONE	3800	840	1100	950	1800
Total Cyanide	µg/l	10	ISO 17025	390	< 10	55	13	400
Complex Cyanide	µg/l	10	NONE	270	< 10	55	13	390
Free Cyanide	µg/l	10	NONE	120	< 10	< 10	< 10	11
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30	< 30	< 30
Sulphate as SO ₄	µg/L	45	ISO 17025	650000	35000	110000	58000	630000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4	ISO 17025	240	65	38	81	80
Ammonium as NH ₄	µg/l	15	ISO 17025	400000	270	22000	250	34000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	330	5.5	8.0	3.5	12
Total Suspended Solids	mg/l	5	NONE	38	< 5.0	22	8.0	96

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	57000	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	100000	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	7700	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	120000	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	280000	< 3.5	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	150	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	130	< 0.01	5.9	< 0.01	0.63
Acenaphthene	µg/l	0.01	ISO 17025	63	< 0.01	7.0	< 0.01	0.45
Fluorene	µg/l	0.01	ISO 17025	47	< 0.01	3.1	< 0.01	0.43
Phenanthrene	µg/l	0.01	ISO 17025	35	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	9.9	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	8.6	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	6.5	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	450	< 0.2	16	< 0.2	1.6
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	67	5.2	20	5.6	5.6
Cadmium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chromium (dissolved)	µg/l	0.4	ISO 17025	14	1.2	< 0.4	0.7	< 0.4
Copper (dissolved)	µg/l	0.7	ISO 17025	4.0	1.5	0.7	3.2	1.6
Iron (dissolved)	mg/l	0.004	ISO 17025	0.86	0.010	0.31	0.009	0.35
Lead (dissolved)	µg/l	1	ISO 17025	3.2	< 1.0	< 1.0	< 1.0	1.5
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	21	1.4	1.5	2.8	15
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.2	3.2	0.7	0.6	1.8

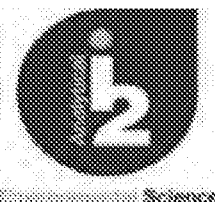
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ARUN DISTRICT COUNCIL AB/88/19/PL

The results included within the report are representative of the samples submitted for analysis.

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number				184371	184372	184373	184374	184375
Sample Reference				BH101S	BH102	BH103	BH104	BH105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				15/07/2011	15/07/2011	15/07/2011	15/07/2011	15/07/2011
Time Taken				1150	1000	1100	0910	0830
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

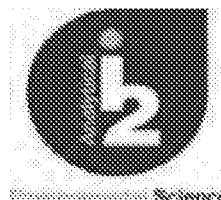
Benzene	µg/l	1	ISO 17025	8500	< 1.0	9.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	3000	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	65	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	350	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	230	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	130	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	290	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	210	< 10	120	< 10	< 10
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	620	< 10	120	< 10	< 10

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	8500	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	3000	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	730	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	310	< 10	61	< 10	< 10
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	3500	< 10	57	< 10	< 10
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	4400	< 10	78	< 10	< 10
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	180	< 10	< 10	< 10	< 10
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	21000	< 10	200	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number	184376	184377	184378		
Sample Reference	BH101D	FIELD BLANK	TRIP BLANK		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	None Supplied	None Supplied	None Supplied		
Date Sampled	15/07/2011	15/07/2011	15/07/2011		
Time Taken	1245	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH units	N/A	ISO 17025	8.1	8.1	7.8		
Electrical Conductivity	µS/cm	10	NONE	3200	< 10	< 10		
Total Cyanide	µg/l	10	ISO 17025	380	< 10	< 10		
Complex Cyanide	µg/l	10	NONE	270	< 10	< 10		
Free Cyanide	µg/l	10	NONE	110	< 10	< 10		
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30		
Sulphate as SO ₄	µg/L	45	ISO 17025	570000	1900	1300		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Chloride	mg/l	4	ISO 17025	300	< 4.0	< 4.0		
Ammonium as NH ₄	µg/l	15	ISO 17025	400000	1300	470		
Total Organic Carbon (TOC)	mg/l	0.1	NONE	370	2.6	1.0		
Total Suspended Solids	mg/l	5	NONE	26	< 5.0	< 5.0		

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5		
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5		
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	64000	< 0.5	< 0.5		
Cresols	µg/l	0.5	NONE	110000	< 0.5	< 0.5		
Naphthols	µg/l	0.5	NONE	8800	< 0.5	< 0.5		
Phenol	µg/l	0.5	NONE	130000	< 0.5	< 0.5		
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5		

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	320000	< 3.5	< 3.5		
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	290	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	170	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	33	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	37	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	34	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	10	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	4.7	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	3.8	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	570	< 0.2	< 0.2		
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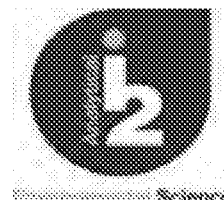
Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	58	< 1.0	< 1.0		
Cadmium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1		
Chromium (dissolved)	µg/l	0.4	ISO 17025	12	1.0	0.7		
Copper (dissolved)	µg/l	0.7	ISO 17025	3.1	1.1	1.1		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.55	< 0.004	< 0.004		
Lead (dissolved)	µg/l	1	ISO 17025	1.9	< 1.0	< 1.0		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	21	1.1	1.1		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Zinc (dissolved)	µg/l	0.4	ISO 17025	2.3	< 0.4	< 0.4		

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Analytical Report Number: 11-28864

Project / Site name: Arundel

Lab Sample Number	184376	184377	184378		
Sample Reference	BH101D	FIELD BLANK	TRIP BLANK		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	None Supplied	None Supplied	None Supplied		
Date Sampled	15/07/2011	15/07/2011	15/07/2011		
Time Taken	1245	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

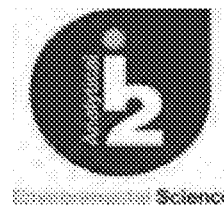
Benzene	µg/l	1	ISO 17025	13000	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	6000	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	190	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	840	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	500	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	170	< 10	< 10		
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	100	< 10	< 10		
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	270	< 10	< 10		

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	13000	< 10	< 10		
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	6000	< 10	< 10		
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	1700	< 10	< 10		
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	350	< 10	< 10		
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	4600	< 10	< 10		
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	4100	< 10	< 10		
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	300	< 10	< 10		
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	30000	< 10	< 10		

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 11-28864

Project / Site name: Arundel

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Stone content of

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
184379	SPOILHEAP 1	None Supplied	None Supplied	Light brown sandy clay with gravel.
184380	SPOILHEAP 2	None Supplied	None Supplied	Light brown clay and sand with gravel and vegetation.

Analytical Report Number : 11-28864

Project / Site name: Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ in soil	Determination of ammonium in soil by extraction with potassium chloride followed by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	MCERTS
Ammonium as NH ₄ in water	Determination of ammonium in water by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	ISO 17025
Asbestos Screening in Soil	Screening of samples for Asbestos Fibres in Soil	In-house method based on HSG 248	A001	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0735-PL	W	MCERTS
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW	In-house method based on USEPA8260	L036-UK	W	ISO 17025
Chloride in water	Determination of chloride in water by titration against silver nitrate.	In-house method	L024-PL	W	ISO 17025
Chloride, water soluble, in soil	Determination of chloride by titration using silver nitrate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L075-PL	D	MCERTS
Complex cyanide in soil	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in dichloromethane followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential		D	NONE
Free cyanide (Low level) in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025

Analytical Report Number : 11-28864

Project / Site name: Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK	W	NONE
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Phenols, speciated, in soil, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Stones content of soil	Stones not passing through a 2 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK	D	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L010-PL	W	NONE
Suspended solids in water	Determined gravimetrically with GFC filtration papers.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-UK	W	NONE
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method	L049-PL	D	NONE
Thiocyanate in water	Determination of thiocyanate in water by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L049-UK	W	NONE

Analytical Report Number : 11-28864

Project / Site name: Arundel

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	MCERTS
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	ISO 17025
Total organic carbon in water	Determination of total organic carbon in water by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
TPH7 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP1088	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	57
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	470
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	1100
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	19



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	8.4	7.4			
Electrical Conductivity	µS/cm	10	NONE	430	370			
Total Cyanide	µg/l	10	ISO 17025	1500	15			
Complex Cyanide	µg/l	25	NONE	1500	< 25			
Free Cyanide	µg/l	25	NONE	< 25	< 25			
Free Cyanide (Low Level)	µg/l	10	NONE	14	< 10			
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30			
Sulphate as SO ₄	µg/l	100	ISO 17025	130000	160000			
Sulphide	µg/l	5	NONE	5000	< 5.0			
Chloride	mg/l	4	NONE	11	< 4.0			
Ammonium as NH ₄	µg/l	15	NONE	33000	3200			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	20	2.6			

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5			
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5			
Butyl Phenols	µg/l	0.5	NONE	77	< 0.5			
Cresols	µg/l	0.5	NONE	10	< 0.5			
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5			
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5			
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5			

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	88	< 3.5			
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	1.5			
Acenaphthylene	µg/l	0.01	NONE	3.6	< 0.01			
Acenaphthene	µg/l	0.01	NONE	33	< 0.01			
Fluorene	µg/l	0.01	NONE	11	< 0.01			
Phenanthrene	µg/l	0.01	NONE	14	< 0.01			
Anthracene	µg/l	0.01	NONE	7.2	< 0.01			
Fluoranthene	µg/l	0.01	NONE	4.7	< 0.01			
Pyrene	µg/l	0.01	NONE	3.1	< 0.01			
Benzo(a)anthracene	µg/l	0.01	NONE	1.9	< 0.01			
Chrysene	µg/l	0.01	NONE	0.91	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	NONE	1.3	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	NONE	0.53	< 0.01			
Benzo(a)pyrene	µg/l	0.01	NONE	1.1	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01			

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	83	1.6			
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	2.9	< 1.1			
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.25	2.9			
Chromium (dissolved)	µg/l	0.4	ISO 17025	6.1	2.0			
Copper (dissolved)	µg/l	0.7	ISO 17025	26	15			
Iron (dissolved)	mg/l	0.004	ISO 17025	5.0	0.43			
Lead (dissolved)	µg/l	1	ISO 17025	90	630			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	9.1	7.3			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)								
	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	5.5	34			



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0			
Toluene	µg/l	1	NONE	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0			
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0			
o-xylene	µg/l	1	NONE	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	360	< 10			
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	2400	< 10			
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	2900	< 10			
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	240	< 10			



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e:

Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name:	Arundel Gasworks	Samples received on:	20/06/2011
Your job number:		Samples instructed on:	20/06/2011
Your order number:		Analysis completed by:	07/07/2011
Report Issue Number:	2	Report issued on:	07/07/2011
Samples Analysed:	7 leachate samples - 35 soil samples - 1 water sample		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 - 711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	8.1	12
Total mass of sample received	kg	0.001	NONE	0.57	0.73
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.6	7.5	7.5	7.0
Total Cyanide	mg/kg	1	MCERTS	3.5	< 1.0	< 1.0	4.6	7.2
Complex Cyanide	mg/kg	1	NONE	3.5	< 1.0	< 1.0	3.5	5.2
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	1	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	22	< 5.0	< 5.0	< 5.0	40
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	2.6	1.9	0.7	7.6	0.2
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.3	2.6	2.3	10	8.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	7.9	< 1.0	< 1.0	< 1.0	1.5
Cresols	µg/kg	1	NONE	5.2	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	4.7	< 0.1	< 0.1	0.5	0.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	18	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	2.5	< 0.05	< 0.05	1.2	2.7
Acenaphthylene	mg/kg	0.2	MCERTS	2.6	< 0.20	< 0.20	0.90	7.0
Acenaphthene	mg/kg	0.1	MCERTS	0.50	< 0.10	< 0.10	0.22	1.4
Fluorene	mg/kg	0.2	MCERTS	2.4	< 0.20	< 0.20	0.58	7.6
Phenanthrene	mg/kg	0.2	MCERTS	24	< 0.20	< 0.20	8.6	46
Anthracene	mg/kg	0.1	MCERTS	9.1	< 0.10	< 0.10	1.7	15
Fluoranthene	mg/kg	0.2	MCERTS	48	< 0.20	< 0.20	21	63
Pyrene	mg/kg	0.2	MCERTS	36	< 0.20	< 0.20	17	48
Benzo(a)anthracene	mg/kg	0.2	MCERTS	35	< 0.20	< 0.20	13	39
Chrysene	mg/kg	0.05	MCERTS	23	< 0.05	< 0.05	14	30
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	28	< 0.10	< 0.10	19	35
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	13	< 0.20	< 0.20	8.7	19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	21	< 0.10	< 0.10	14	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	11	< 0.20	< 0.20	10	18
Dibenzo(a,h)anthracene	mg/kg	0.2	MCERTS	3.0	< 0.20	< 0.20	2.0	3.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	9.4	< 0.05	< 0.05	9.5	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	270	< 1.6	< 1.6	140	390
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3	11	18	26	20
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.4	< 0.2	1.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	0.5	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	29	34	23	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	16	19	91	58
Lead (aqua regia extractable)	mg/kg	2	MCERTS	90	15	14	570	260
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.2	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	70	17	35	26	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.4	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	62	47	65	240	180

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	17	< 1.0	< 1.0	14	16
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	40	< 2.0	< 2.0	21	52
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	560	< 10	< 10	180	530
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	1500	< 10	< 10	810	1700
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	2100	< 10	< 10	1000	2300

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180219	180220	180221	180222	180223
Sample Reference	TP104	TP105	TP105	TP106	TP106
Sample Number	ES2	ES1	ES2	ES1	ES2
Depth (m)	1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled	14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	46	< 0.1
Moisture Content	%	N/A	NONE	7.5	11
Total mass of sample received	kg	0.001	NONE	0.88	0.47
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	6.7	6.6	7.6	7.3
Total Cyanide	mg/kg	1	MCERTS	2.1	41	3.3	9.1	64
Complex Cyanide	mg/kg	1	NONE	2.1	39	3.3	9.1	61
Free Cyanide	mg/kg	1	NONE	< 1	1	< 1	< 1	3
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	0.19	0.35	< 0.0025	1.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	6.9	< 5.0	36	21
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	260
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	91	< 5.0	67
Organic Matter	%	0.1	MCERTS	1.3	4.5	1.2	5.0	4.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	3.9	20	5.0	8.0	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	4.2	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.4	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	2.9	< 0.1	0.5	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	9.5	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.43	12	0.31	4.7	8.1
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	2.6	< 0.20	8.2	2.0
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.78	< 0.10	1.6	0.90
Fluorene	mg/kg	0.2	MCERTS	< 0.20	2.3	0.39	10	4.4
Phenanthrene	mg/kg	0.2	MCERTS	0.37	28	2.4	68	27
Anthracene	mg/kg	0.1	MCERTS	0.15	9.9	0.60	27	5.7
Fluoranthene	mg/kg	0.2	MCERTS	0.84	56	3.9	110	40
Pyrene	mg/kg	0.2	MCERTS	0.81	48	3.0	85	33
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.59	41	2.0	76	22
Chrysene	mg/kg	0.05	MCERTS	0.62	33	1.3	61	20
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.1	42	1.8	89	25
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.41	25	0.68	26	12
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.0	37	1.4	62	18
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.86	24	0.78	32	11
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	4.1	< 0.20	6.4	2.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.0	25	0.81	30	11

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	8.4	390	19	700	240
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180219	180220	180221	180222	180223
Sample Reference	TP104	TP105	TP105	TP106	TP106
Sample Number	ES2	ES1	ES2	ES1	ES2
Depth (m)	1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled	14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	29	22	34	23
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	3.3	2.2	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.3	< 0.2	0.5	0.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	57	41	50	25	58
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	63	47	56	31
Lead (aqua regia extractable)	mg/kg	2	MCERTS	42	1400	24	430	1000
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	40	46	35	26	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	93	290	62	210	1800

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Project / Site name: Arundel Gasworks

Lab Sample Number	180219	180220	180221	180222	180223
Sample Reference	TP104	TP105	TP105	TP106	TP106
Sample Number	ES2	ES1	ES2	ES1	ES2
Depth (m)	1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled	14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Monoaromatics					
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	8.5
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	59
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	700
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	650
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	1400
TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	45	2.5	18	18
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	83	< 2.0	52	33
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	< 10	790	10	790	1800
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	< 10	2100	22	2900	3100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	3000	35	3700	5000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180224	180225	180226	180227	180228
Sample Reference	TP106	TP107	TP107	TP108A	TP108B
Sample Number	ES3	ES1	ES2	ES1	ES1
Depth (m)	2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled	14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	13
Total mass of sample received	kg	0.001	NONE	0.80	0.85
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	7.6	7.6	7.4	7.4
Total Cyanide	mg/kg	1	MCERTS	5.2	< 1.0	2.3	100	7.9
Complex Cyanide	mg/kg	1	NONE	5.2	< 1.0	2.3	100	7.9
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	0.035	0.70	0.88
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	23	12
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	0.7	1.8	0.7	4.6	2.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.4	4.0	2.9	5.1	5.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	3.2	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	2.6	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	1.4	0.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.2	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.96	< 0.05	5.5	1.5
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.80	< 0.20	8.9	1.5
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.19	< 0.10	0.94	0.31
Fluorene	mg/kg	0.2	MCERTS	< 0.20	0.36	< 0.20	2.8	0.96
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	2.1	0.37	26	9.2
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.94	0.20	15	3.3
Fluoranthene	mg/kg	0.2	MCERTS	0.37	5.4	1.2	78	22
Pyrene	mg/kg	0.2	MCERTS	0.32	4.7	1.0	66	18
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.27	3.6	0.86	58	13
Chrysene	mg/kg	0.05	MCERTS	0.18	3.6	0.59	46	12
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.27	5.4	0.97	76	17
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	2.0	0.37	20	5.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.23	4.0	0.73	57	13
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	2.7	0.54	33	8.4
Dibenzo(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.47	< 0.20	5.7	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.7	0.54	34	8.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1.6	40	7.4	530	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180224	180225	180226	180227	180228
Sample Reference	TP106	TP107	TP107	TP108A	TP108B
Sample Number	ES3	ES1	ES2	ES1	ES1
Depth (m)	2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled	14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	7.3	16	14	16
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	< 0.2	1.0	0.6	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	0.4	0.4	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	11	28	18	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	45	22	42	37
Lead (aqua regia extractable)	mg/kg	2	MCERTS	11	160	18	320	580
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	< 0.3	< 0.3	0.5
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	11	11	35	16	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	2.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	28	36	64	150	130

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.7	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	14	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	36	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	54	< 10
TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	7.4	< 1.0	23	15
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	6.6	< 2.0	52	19
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	< 10	28	< 10	730	190
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	< 10	120	< 10	2800	810
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	160	< 10	3600	1000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	33	< 0.1	26	24	< 0.1
Moisture Content	%	N/A	NONE	6.3	14	5.9	10	16
Total mass of sample received	kg	0.001	NONE	0.64	0.64	0.81	0.79	0.88
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.7	7.6	7.4	7.5
Total Cyanide	mg/kg	1	MCERTS	2.1	< 1.0	< 1.0	49	83
Complex Cyanide	mg/kg	1	NONE	2.1	< 1.0	< 1.0	49	82
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	3.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	9.9	< 5.0	< 5.0	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	1900
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	460
Organic Matter	%	0.1	MCERTS	4.4	3.4	3.3	1.6	7.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.0	9.2	4.5	4.8	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.2	< 1.0	< 1.0	2.0	4.3
Cresols	µg/kg	1	NONE	1.5	< 1.0	< 1.0	2.4	3.4
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	2.1	< 0.1	0.6	3.3	1.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.7	9.3
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	10	0.65	1.6	9.1	130
Acenaphthylene	mg/kg	0.2	MCERTS	47	0.25	1.6	4.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	8.2	< 0.10	0.20	1.4	26
Fluorene	mg/kg	0.2	MCERTS	43	0.22	0.72	7.3	140
Phenanthrene	mg/kg	0.2	MCERTS	200	0.93	4.7	24	290
Anthracene	mg/kg	0.1	MCERTS	130	0.39	2.4	13	170
Fluoranthene	mg/kg	0.2	MCERTS	220	2.9	18	37	220
Pyrene	mg/kg	0.2	MCERTS	190	2.6	18	28	150
Benzo(a)anthracene	mg/kg	0.2	MCERTS	250	2.4	15	27	120
Chrysene	mg/kg	0.05	MCERTS	150	2.1	13	18	79
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	250	3.3	21	21	90
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	83	1.1	7.2	9.5	27
Benzo(a)pyrene	mg/kg	0.1	MCERTS	160	2.4	16	15	56
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	87	1.5	9.5	8.2	20
Dibenzo(a,h)anthracene	mg/kg	0.2	MCERTS	24	0.30	2.0	2.2	6.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	79	1.4	9.2	7.2	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1900	22	140	230	1600
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180229	180230	180231	180232	180233
Sample Reference	TP109A	TP109B	TP110	TP111	TP111
Sample Number	ES1	ES1	ES1	ES1	ES2
Depth (m)	0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	14	16	15	11
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	1.1	< 0.2	0.7	2.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	0.2	0.4	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	24	16	15	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	64	32	66	21
Lead (aqua regia extractable)	mg/kg	2	MCERTS	450	260	130	410	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	34	37	16	20	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.6	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	100	150	130	58	34

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	3.5
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	180
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	170
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.3
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.9
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	14	9.0	14	38	80
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	220	8.7	22	77	1100
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	4700	40	170	590	7400
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	9700	250	810	1400	9100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	15000	310	1000	2100	18000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180234	180235	180236	180237	180238
Sample Reference	TP112	TP112	TP113	TP113	TP114
Sample Number	ES1	ES2	ES2	ES3	ES1
Depth (m)	0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	34	38
Moisture Content	%	N/A	NONE	7.9	9.0
Total mass of sample received	kg	0.001	NONE	0.82	0.91
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	7.7	7.3	6.5	7.5
Total Cyanide	mg/kg	1	MCERTS	7.2	2.3	85	160	6.0
Complex Cyanide	mg/kg	1	NONE	7.2	2.3	84	150	4.4
Free Cyanide	mg/kg	1	NONE	< 1	< 1	1	7	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	0.90	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	25	19	46	7.9
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	5600	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	730	< 5.0
Organic Matter	%	0.1	MCERTS	3.3	2.2	3.8	1.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.8	3.7	4.7	3.3	3.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	3.2	< 1.0	3.4	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.8	< 0.1	1.6	0.9	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	12	0.32	3.9	35	0.23
Acenaphthylene	mg/kg	0.2	MCERTS	9.8	< 0.20	5.0	2.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	1.5	< 0.10	0.85	3.8	< 0.10
Fluorene	mg/kg	0.2	MCERTS	10	< 0.20	4.6	22	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	120	0.35	22	56	< 0.20
Anthracene	mg/kg	0.1	MCERTS	55	0.17	12	21	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	150	0.88	58	39	0.28
Pyrene	mg/kg	0.2	MCERTS	120	0.72	45	28	0.24
Benzo(a)anthracene	mg/kg	0.2	MCERTS	130	0.58	40	16	< 0.20
Chrysene	mg/kg	0.05	MCERTS	87	0.48	31	12	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	130	0.60	39	13	0.19
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	43	0.25	15	3.6	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	78	0.43	30	8.8	0.14
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	46	< 0.20	14	5.0	< 0.20
Dibenzo(a,h)anthracene	mg/kg	0.2	MCERTS	11	< 0.20	3.2	0.78	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	41	< 0.05	13	4.5	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1000	4.8	340	270	< 1.6
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180234	180235	180236	180237	180238
Sample Reference	TP112	TP112	TP113	TP113	TP114
Sample Number	ES1	ES2	ES2	ES3	ES1
Depth (m)	0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	26	19	15	8.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.3	0.3	0.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.8	< 0.2	0.3	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	45	32	33	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	47	42	34	29	20
Lead (aqua regia extractable)	mg/kg	2	MCERTS	130	17	89	12	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	19	78	17	23	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	92	120	59	42	71

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	15	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	13	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	15	15	< 1.0
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	73	< 2.0	97	280	< 2.0
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	1600	< 10	850	850	< 10
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	3800	< 10	2400	640	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	5400	< 10	3400	1800	< 10

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180239	180240	180241	180242	180243
Sample Reference	TP115	TP115	VP200B	VP200B	VP201
Sample Number	ES1	ES2	ES1	ES2	ES1
Depth (m)	0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled	18/06/2011	18/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	40
Moisture Content	%	N/A	NONE	10	12
Total mass of sample received	kg	0.001	NONE	0.58	0.69
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	5.1	6.8	6.9	7.7
Total Cyanide	mg/kg	1	MCERTS	12	< 1.0	6.1	1.5	< 1.0
Complex Cyanide	mg/kg	1	NONE	12	< 1.0	6.1	1.5	< 1.0
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	5.3	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	20	12	< 5.0	25	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	44	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	1.7	0.9	2.2	1.2	1.7
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.3	5.0	4.0	3.5	3.0

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.82	0.19	0.47	0.26	0.33
Acenaphthylene	mg/kg	0.2	MCERTS	0.77	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.22	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	0.47	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	3.6	< 0.20	1.5	0.29	1.6
Anthracene	mg/kg	0.1	MCERTS	1.1	< 0.10	0.71	< 0.10	0.40
Fluoranthene	mg/kg	0.2	MCERTS	9.8	< 0.20	4.0	0.37	2.3
Pyrene	mg/kg	0.2	MCERTS	8.1	< 0.20	3.2	0.30	1.6
Benzo(a)anthracene	mg/kg	0.2	MCERTS	6.3	< 0.20	2.3	< 0.20	1.1
Chrysene	mg/kg	0.05	MCERTS	5.3	< 0.05	2.4	< 0.05	1.3
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	8.8	< 0.10	2.6	< 0.10	1.2
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	2.9	< 0.20	1.3	< 0.20	0.72
Benzo(a)pyrene	mg/kg	0.1	MCERTS	6.4	< 0.10	1.9	< 0.10	0.66
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	5.3	< 0.20	1.3	< 0.20	0.47
Dibenzo(a,h)anthracene	mg/kg	0.2	MCERTS	0.85	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.8	< 0.05	1.5	< 0.05	0.79

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	67	< 1.6	23	< 1.6	13
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180239	180240	180241	180242	180243
Sample Reference	TP115	TP115	VP200B	VP200B	VP201
Sample Number	ES1	ES2	ES1	ES2	ES1
Depth (m)	0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled	18/06/2011	18/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	16	12	14	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.2	0.4	0.9	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	43	18	38	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	60	32	34	34	25
Lead (aqua regia extractable)	mg/kg	2	MCERTS	140	17	390	14	76
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.7	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	26	28	15	33	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	51	57	80	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				18/06/2011	18/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	4.2	< 1.0	< 1.0
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	44	< 2.0	12	< 2.0	< 2.0
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	200	< 10	25	< 10	< 10
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	290	< 10	69	< 10	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	540	< 10	110	< 10	< 10

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180244	180245	180246	180247	180248
Sample Reference	VP202	VP203C	VP203C	VP204	VP204
Sample Number	ES1	ES1	ES2	ES1	ES2
Depth (m)	0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled	13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	17	45
Moisture Content	%	N/A	NONE	11	5.7
Total mass of sample received	kg	0.001	NONE	0.80	0.79
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.5	7.8	6.0	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	5.1	2.6	< 1.0	6.6
Complex Cyanide	mg/kg	1	NONE	< 1.0	5.1	2.6	< 1.0	6.6
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	93	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	6.4	3.3	1.8	2.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.8	6.9	3.6	3.8	3.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	1.7	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.1	< 1.0	< 1.0	1.1
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.0	1.1	< 0.1	< 0.1	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	23	2.6	0.37	2.0	0.86
Acenaphthylene	mg/kg	0.2	MCERTS	40	6.9	< 0.20	0.69	0.76
Acenaphthene	mg/kg	0.1	MCERTS	12	1.4	0.11	3.8	0.53
Fluorene	mg/kg	0.2	MCERTS	55	7.5	0.30	3.8	0.88
Phenanthrene	mg/kg	0.2	MCERTS	360	63	2.2	35	12
Anthracene	mg/kg	0.1	MCERTS	140	20	0.67	12	4.0
Fluoranthene	mg/kg	0.2	MCERTS	370	120	3.3	60	25
Pyrene	mg/kg	0.2	MCERTS	300	96	2.6	51	21
Benzo(a)anthracene	mg/kg	0.2	MCERTS	230	59	1.5	28	12
Chrysene	mg/kg	0.05	MCERTS	170	47	1.1	23	8.9
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	230	70	1.4	35	15
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	77	25	0.82	9.1	3.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	150	53	1.3	26	10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	94	33	0.77	16	7.4
Dibenzo(a,h)anthracene	mg/kg	0.2	MCERTS	21	6.1	< 0.20	3.0	1.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	90	32	0.88	20	8.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	2400	650	17	330	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180244	180245	180246	180247	180248
Sample Reference	VP202	VP203C	VP203C	VP204	VP204
Sample Number	ES1	ES1	ES2	ES1	ES2
Depth (m)	0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled	13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	21	12	8.6	9.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	< 0.2	2.1	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	24	34	23	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	960	46	16	16	26
Lead (aqua regia extractable)	mg/kg	2	MCERTS	190	270	15	23	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	17	20	14	15	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	220	48	43	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180244	180245	180246	180247	180248
Sample Reference				VP202	VP203C	VP203C	VP204	VP204
Sample Number				ES1	ES1	ES2	ES1	ES2
Depth (m)				0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled				13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	180	7.3	2.7	6.9	7.1
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	830	65	7.3	50	35
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	5100	1000	13	520	270
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	8000	2600	47	1300	450
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	14000	3600	70	1900	760



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Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name:	Arundel Gasworks	Samples received on:	20/06/2011
Your job number:		Samples instructed on:	20/06/2011
Your order number:		Analysis completed by:	07/07/2011
Report Issue Number:	2	Report issued on:	07/07/2011
Samples Analysed:	7 leachate samples - 35 soil samples - 1 water sample		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 - 711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting

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Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH units	N/A	ISO 17025	7.2				
Electrical Conductivity	µS/cm	10	NONE	670				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Complex Cyanide	µg/l	10	NONE	< 10				
Free Cyanide	µg/l	10	NONE	< 10				
Thiocyanate as SCN	µg/l	30	NONE	< 30				
Sulphate as SO ₄	µg/L	45	ISO 17025	25000				
Sulphide	µg/l	5	NONE	< 5.0				
Chloride	mg/l	4	ISO 17025	80				
Ammonium as NH ₄	µg/l	15	ISO 17025	180				
Total Organic Carbon (TOC)	mg/l	0.1	NONE	8.0				
Total Suspended Solids	mg/l	5	NONE	< 5.0				

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5				
Resorcinol	µg/l	0.5	NONE	< 0.5				
Elthyphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5				
Cresols	µg/l	0.5	NONE	< 0.5				
Naphthols	µg/l	0.5	NONE	< 0.5				
Phenol	µg/l	0.5	NONE	< 0.5				
Trimethylphenol	µg/l	0.5	NONE	< 0.5				

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5				
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenzo(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.2				
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Heavy Metals / Metalloids

Cadmium (dissolved)	µg/l	0.1	ISO 17025	< 0.1				
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.3				
Copper (dissolved)	µg/l	0.7	ISO 17025	14				
Iron (dissolved)	mg/l	0.004	ISO 17025	0.038				
Lead (dissolved)	µg/l	1	ISO 17025	2.1				
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5				
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.8				
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0				
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.9				



Analytical Report Number: 11-28269
Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

TPH7 - Aliphatic > C5 - C6	µg/l	10	NONE	< 10				
TPH7 - Aliphatic > C6 - C8	µg/l	10	NONE	< 10				
TPH7 - Aliphatic > C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aliphatic > C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aliphatic > C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aliphatic > C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aliphatic > C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				

TPH7 - Aromatic > C5 - C7	µg/l	10	NONE	< 10				
TPH7 - Aromatic > C7 - C8	µg/l	10	NONE	< 10				
TPH7 - Aromatic > C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aromatic > C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aromatic > C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aromatic > C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aromatic > C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				

U/S Unsuitable Sample I/S Insufficient Sample

Project No :	11F59A	Project code:	ARUNDEL	Turnaround:	STD	11F59A	Project code:	ARUNDEL	Turnaround:	STD
Lab ID:	11F59A01A	11F59A02A	11F59A03A	11F59A05A	11F59A06A	11F59A07A	0718BLA2			
Client ID :	VP203	VP206	VP202	VP204	VP201	TRIP BLANK	BLANK			
Bottle No :	G0147823	F069645	E057543	G0147070	E069262	G0161240	BLANK0718A			
Matrix :	AIR	AIR	AIR	AIR	AIR	AIR	AIR			
Volume/Weight :	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube			
Scaling Factor :	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
Lab QC No:	0718	0718	0718	0718	0718	0718	0718			

ALIPHATICS (ng/Tube)

C5-C6	240	71	204	-	-	-	-
>C6-C8	-	-	145	-	1060	-	-
>C8-C10	357	389	-	602	899	-	-
>C10-C12	1271	1716	25	555	100	-	-
>C12-C16	-	-	-	-	-	-	-
>C16-C21	-	-	-	-	-	-	-
>C21-C35	-	-	-	-	-	-	-

AROMATICS (ng/Tube)

C5-C7	13	23	80	1000	4600	-	-
>C7-C8	400	140	2300	3500	13000	20	-
>C8-C10	1166	1040	2415	22228	38922	-	-
>C10-C12	-	55	-	851	160	-	-
>C12-C16	-	-	-	-	-	-	-
>C16-C21	-	-	-	-	-	-	-
>C21-C35	-	-	-	-	-	-	-

Key: - = Not detected

ALIPHATICS (ng/Tube)

AROMATICS (ng/Tube)

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No :	11F59A	Project code:	ARUNDEL		Turnaround:	STD
21 Jul 11 14:33						
Lab Sample ID :	11F59A01A	11F59A02A	11F59A03A	11F59A05A	11F59A06A	11F59A07A
Client ID :	VP203	VP200	VP202	VP204	VP201	TRIP BLANK
Bottle No :	G0147823	F069645	E057543	G0147070	E069262	G0161240
Matrix :	AIR	AIR	AIR	AIR	AIR	AIR
Volume/Weight :	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube
Scaling Factor :	1.0	1.0	1.0	1.0	1.0	1.0
COMPOUND	Concentration ng/Tube					
Dichlorodifluoromethane	<15	<15	<15	<15	<15	<15
Chloromethane	<5	<5	<5	<5	<5	<5
Vinyl chloride	<5	<5	<5	<5	<5	<5
Bromomethane	<5	<5	<5	<5	<5	<5
Chloroethane	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5
Acetone	<50	<50	<50	<50	<50	<50
Diethyl ether	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5
Carbon disulfide	<4	<4	<4	<4	<4	<4
Allyl chloride	<10	<10	<10	<10	<10	<10
Methylene chloride	<5	<5	<5	<5	<5	<5
Trans-1,2-dichloroethene	<5	<5	<5	<5	<5	<5
tert-butyl methyl ether	79	<5	67	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5
2-Butanone	<50	<50	<50	<50	<50	<50
cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5
2,2-Dichloropropane	<5	<5	<5	<5	<5	<5
Chloroform	26	11	<4	<4	<4	<4
Tetrahydrofuran	<100	<100	<100	<100	<100	<100
1,1,1-Trichloroethane	<4	<4	<4	<4	<4	<4
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5
1-Chlorobutane	<5	<5	<5	<5	<5	<5
1,1-Dichloropropene	<5	<5	<5	<5	<5	<5
Benzene	13	23	80	1000	4600	<4
Carbon tetrachloride	<5	<5	<5	<5	<5	<5
2-Nitropropane	<10	<10	<10	<10	<10	<10
Methyl methacrylate	<10	<10	<10	<10	<10	<10
2-Hexanone	<15	<15	<15	<15	<15	<15
4-Methyl-2-pentanone	<25	<25	<25	<25	<25	<25
1,2-Dichloropropane	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5
Toluene	400	140	2300	3500	13000	20

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No :	11F59A	Project code:	ARUNDEL		Turnaround:	STD
21 Jul 11 14:33						
Lab Sample ID :	11F59A01A	11F59A02A	11F59A03A	11F59A05A	11F59A06A	11F59A07A
Client ID :	VP203	VP200	VP202	VP204	VP201	TRIP BLANK
Bottle No :	G0147823	F069645	E057543	G0147070	E069262	G0161240
Matrix :	AIR	AIR	AIR	AIR	AIR	AIR
Volume/Weight :	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube	Whole tube
Scaling Factor :	1.0	1.0	1.0	1.0	1.0	1.0
COMPOUND	Concentration ng/Tube					
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5
1,3-Dichloropropane	<5	<5	<5	<5	<5	<5
Ethyl methacrylate	<10	<10	<10	<10	<10	<10
Dibromochloromethane	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5
Tetrachloroethene	<5	<5	<5	<5	<5	<5
Chlorobenzene	<4	<4	<4	<4	<4	<4
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5
Ethylbenzene	94	54	420	1600	5800	<4
m&p-Xylene	330	210	1200	5100	12000	<7.5
Styrene	<5	<5	13	360	970	<5
Bromoform	<5	<5	<5	<5	<5	<5
o-Xylene	130	93	370	2800	6100	<4
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5
Isopropylbenzene	8	<4.5	<4.5	150	420	<4.5
trans-1,4-Dichloro-2-butene	<10	<10	<10	<10	<10	<10
Bromobenzene	<5	<5	<5	<5	<5	<5
2-Chlorotoluene	<5	<5	<5	<5	<5	<5
n-Propylbenzene	48	53	72	4100	4400	<5
4-Chlorotoluene	<5	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	49	54	74	2500	4100	<5
Pentachloroethane	<10	<10	<10	<10	<10	<10
1,2,4-Trimethylbenzene	160	190	230	3400	4500	<5
tert-Butylbenzene	<5	<5	<5	<5	180	<5
1,3-Dichlorobenzene	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5
4-Isopropyltoluene	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5
n-Butylbenzene	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5
Hexachloroethane	<10	<10	<10	<10	<10	<10
1,2-Dibromo-3-chloropropane	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	-	-	-	-	-
Naphthalene	<500	<500	<500	<500	<500	<500
1,2,3-Trichlorobenzene	-	-	-	-	-	-
Hexachlorobutadiene	<100	<100	<100	<100	<100	<100

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No : 11F59A Project code: ARUNDEL Turnaround: STD
21 Jul 11 14:33
Lab Sample ID : 0718BLA2
Client ID : BLANK
Bottle No : BLANK0718A
Matrix : AIR
Volume/Weight : Whole tube
Scaling Factor : 1.0

COMPOUND	Concentration ng/Tube
Dichlorodifluoromethane	<15
Chloromethane	<5
Vinyl chloride	<5
Bromomethane	<5
Chloroethane	<5
Trichlorofluoromethane	<5
Acetone	<50
Diethyl ether	<10
1,1-Dichloroethene	<5
Carbon disulfide	<4
Allyl chloride	<10
Methylene chloride	<5
Trans-1,2-dichloroethene	<5
tert-butyl methyl ether	<5
1,1-Dichloroethane	<5
2-Butanone	<50
cis-1,2-Dichloroethene	<5
2,2-Dichloropropane	<5
Chloroform	<4
Tetrahydrofuran	<100
1,1,1-Trichloroethane	<4
1,2-Dichloroethane	<5
1-Chlorobutane	<5
1,1-Dichloropropene	<5
Benzene	<4
Carbon tetrachloride	<5
2-Nitropropane	<10
Methyl methacrylate	<10
2-Hexanone	<15
4-Methyl-2-pentanone	<25
1,2-Dichloropropane	<5
Trichloroethene	<5
Dibromomethane	<5
Bromodichloromethane	<5
trans-1,3-Dichloropropene	<5
cis-1,3-Dichloropropene	<5
Toluene	<5

CHEMEX ENVIRONMENTAL INTERNATIONAL
VOLATILE ORGANICS IN AIR

Project No : 11F59A Project code: ARUNDEL Turnaround: STD
21 Jul 11 14:33
Lab Sample ID : 0718BLA2
Client ID : BLANK
Bottle No : BLANK0718A
Matrix : AIR
Volume/Weight : Whole tube
Scaling Factor : 1.0

COMPOUND	Concentration ng/Tube
1,1,2-Trichloroethane	<5
1,3-Dichloropropane	<5
Ethyl methacrylate	<10
Dibromochloromethane	<5
1,2-Dibromoethane	<5
Tetrachloroethene	<5
Chlorobenzene	<4
1,1,1,2-Tetrachloroethane	<5
Ethylbenzene	<4
m&p-Xylene	<7.5
Styrene	<5
Bromoform	<5
o-Xylene	<4
1,1,2,2-Tetrachloroethane	<5
1,2,3-Trichloropropane	<5
Isopropylbenzene	<4.5
trans-1,4-Dichloro-2-butene	<10
Bromobenzene	<5
2-Chlorotoluene	<5
n-Propylbenzene	<5
4-Chlorotoluene	<5
1,3,5-Trimethylbenzene	<5
Pentachloroethane	<10
1,2,4-Trimethylbenzene	<5
tert-Butylbenzene	<5
1,3-Dichlorobenzene	<5
sec-Butylbenzene	<5
1,4-Dichlorobenzene	<5
4-Isopropyltoluene	<5
1,2-Dichlorobenzene	<5
n-Butylbenzene	<4.5
Hexachloroethane	<10
1,2-Dibromo-3-chloropropane	-
1,2,4-Trichlorobenzene	-
Naphthalene	<500
1,2,3-Trichlorobenzene	-
Hexachlorobutadiene	<100

Project Name

Arundel

Project No.

5104362

Co-ords: 501315.16E - 106727.51N

Hole Type

HA

Location:

Ford Road, Arundel

Casing diam. (mm)

Level: -

Scale

1:50

Client:

National Grid Porperty Holdings

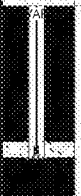
Well diam. (mm)

5

Dates: 13/07/2011

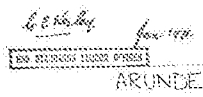
Logged By

LH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	PID	0.20 ppm	0.30			Firm, light brown, slightly silty, gravelly CLAY with occasional clinker and brick fragments. Gravel fraction fine to coarse, sub-rounded to sub-angular flint. (MADE GROUND)	
		0.20-0.30	ES					Firm, light brown CLAY with fine to coarse chalk gravels and frequent flint cobbles. (FILL?)	
		1.00	PID	0.60 ppm	0.75			Chalk cobbles.	1
		1.00-1.10	ES		0.85			Firm light yellow/brown, very sandy CLAY and fine to medium chalk gravels with rare fragments of solidified tar. (MADE GROUND)	
					1.30			End of Borehole at 1.30 m	
									2
									3
									4
									5
									6
									7
									8
									9

Remarks:



[illegible]



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200 Dunkeld Road Perth PH1 3AQ

PORTSMOUTH

023-9262-4200

H.V. MAINS RECORD

Scale 1:1250

Date: 31/05/2011

Grid Ref: TQ01290674

saburt

ATK

Plot 1 of 2

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Template: SIAS NRSWA EW A4 plot3

NORMAL DEPTH TO THE TOP OF THE
CABLE WHEN LAID.

	services	1v	1v	shv
FOOTPATH	0.40m	0.45m	0.60m	0.75m

ROAD CROSSING	0.65m	0.80m	0.75m	0.90m
---------------	-------	-------	-------	-------

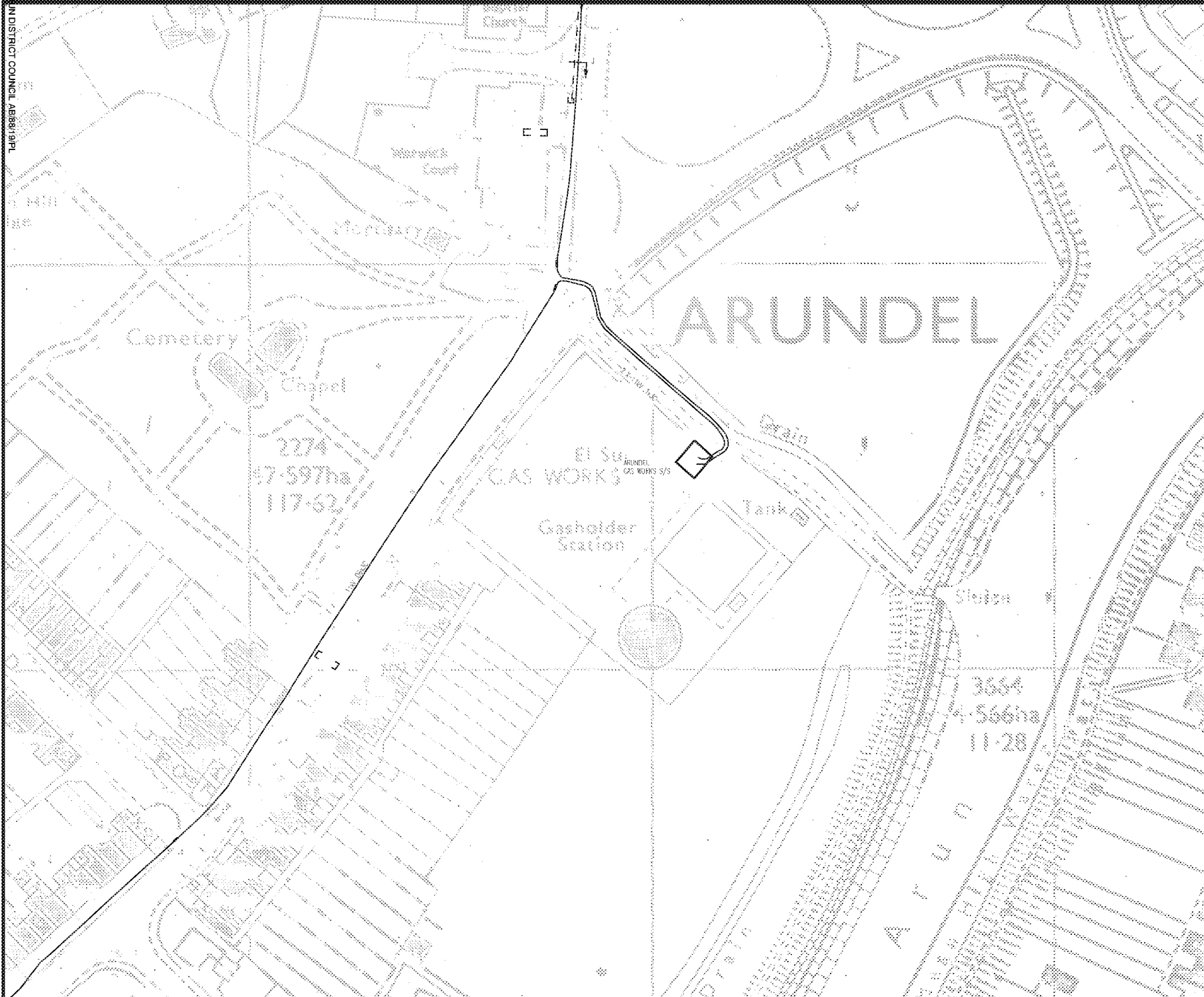
l.v./services	-up to 1000V
h.v.	-over 1000V to 11,000V
e.h.v	-22,000V and 132,000V

WARNING

There may have been subsequent alterations to
the surface levels. Trial holes must be taken to
determine positions and depths of cables. HS (G)
87 Booklet from the Health and Safety Executive -
Avoiding Danger from Buried Cables - should be
consulted before commencing excavation work.
(available from HMSO)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES
THE HEALTH AND SAFETY GUIDANCE NOTE G36 SHOULD
BE CONSULTED.

(AVAILABLE FROM HMSO)





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PORTSMOUTH

023-9262-4200

L.V. MAINS RECORD

Scale 1:1250

Date: 31/05/2011

Grid Ref: TQ01290674

saburt

ATK

Plot 2 of 2

UNCONTROLLED COPY

Subject to Revision without Notice

Template: SIAS NRSWA EW A4 plot3

NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID.

	services	11	11	11
FOOTPATH	0.40m	0.45m	0.60m	0.75m

	0.65m	0.80m	0.75m	0.90m
ROAD CROSSING	0.65m	0.80m	0.75m	0.90m

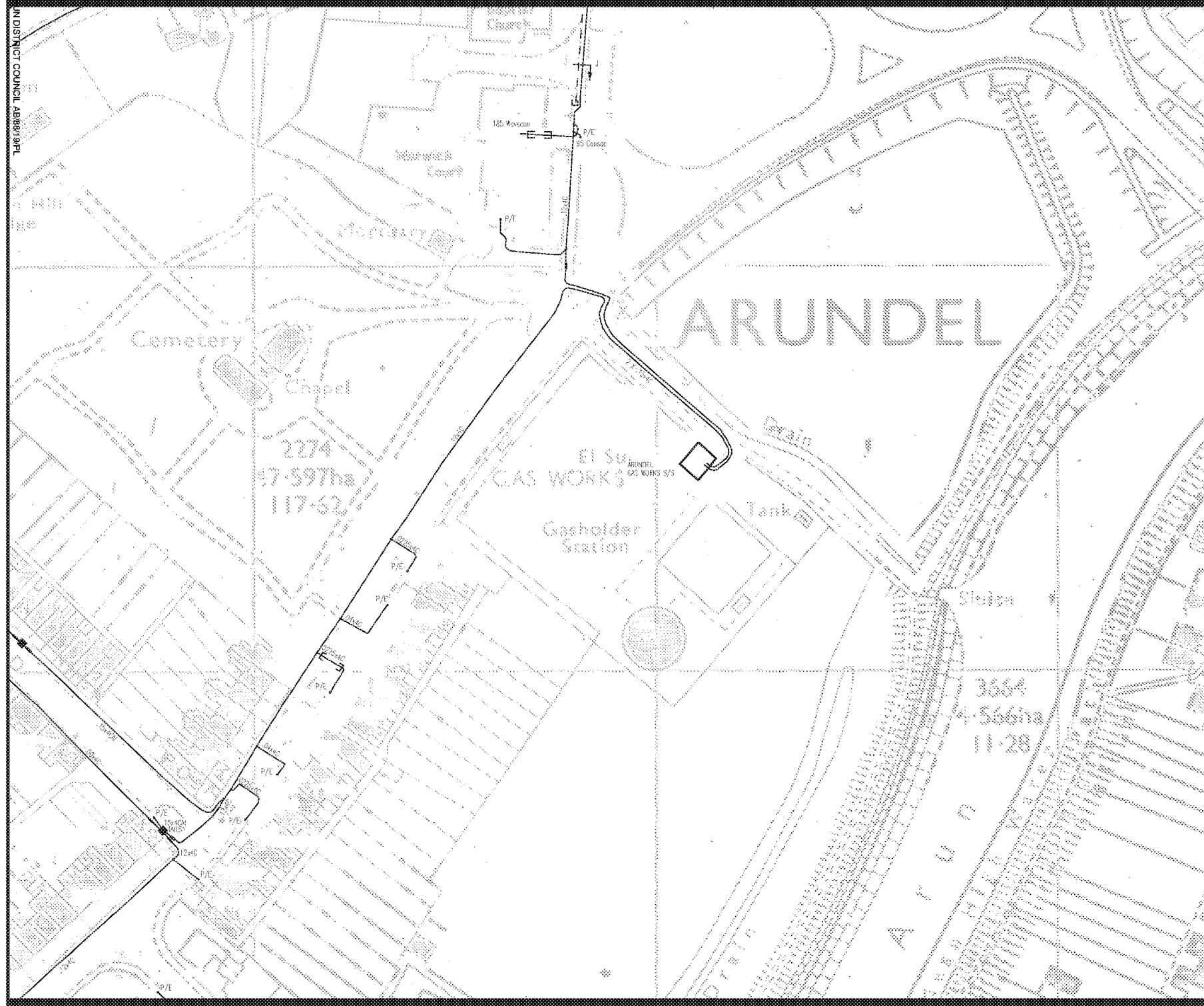
l.v./services	- up to 1000V
h.v.	- over 1000V to 11,000V
e.h.v.	- 22,000V and 132,000V

WARNING

There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depths of cables. HS (G) 87 Booklet from the Health and Safety Executive - Avoiding Danger from Buried Cables - should be consulted before commencing excavation work. (available from HMSO)

WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE G36 SHOULD BE CONSULTED.

(AVAILABLE FROM HMSO)



Watch it!

Safety advice brought to you by
Southern Electric Power Distribution plc and
Scottish Hydro Electric Power Distribution Ltd

These notes are intended to help all those who have to work in the vicinity of electrical apparatus. Employers have a legal obligation to ensure that their operatives are fully instructed in the correct procedures.

The Electricity at Work Regulations 1989 impose health and safety requirements upon employers, employees and self-employed persons with respect to electricity at work. The regulations impose restrictions on persons being engaged in work activities on or near live conductors.

Regulation 14 requires that: "No person shall be engaged in any work activity on or near any live conductor (other than one suitably covered with insulating material so as to prevent danger) that danger may arise unless:

- ♦ it is **unreasonable** in all circumstances for it to be dead; and
- ♦ it is **reasonable** in all circumstances for him to be at work on or near it while it is live; and
- ♦ suitable precautions (including where necessary the provision of suitable protective equipment) are taken to prevent injury."

The purpose of the regulations is to require precautions to be taken against the risk of death or personal injury from electricity in work activities.

Publications

The Health and Safety Executive have produced a document entitled 'Avoiding Danger from Underground Services', and the Appendix 1 deals specifically with electric cables. Copies are available from HMSO's Accredited Agents and good booksellers, Ref. HS (G) 47.

Copies of Health and Safety Guidance note GS 6 relating to safe working in proximity to overhead lines, are available from HMSO Head Offices of the Federation of Civil Engineering Contractors and the National Federation of Building Trades Employers.

Note

In situations of emergency or danger, or where the advice contained in these notes cannot be followed, you must consult Scottish and Southern Energy plc immediately. Tel. 08457 708090 for southern England or 0800 300999 for Scotland.

Additional copies of these "Watch it!" leaflets can be obtained from our Mapping Services office upon request. T [REDACTED]

You must read and accept the following safety notes as part of the contract to receive our network plans. You will have the option to print these and issue them to site staff.

Watch it! - Working in the vicinity of underground cables.

Our plans show the positions and normal depths for the buried cables and pipes at the time when they were installed. However, alterations to road alignments surface levels and buildings may have occurred subsequently without our knowledge. If you discover plant or cables that are not marked or incorrectly marked, then you are required to contact us as soon as possible to give us the opportunity to amend our plans.

These plans show the equipment owned by Scottish and Southern Energy plc. There may be other privately owned plant in the area, which is outside of our control. You should always check with the Local Authority, National Grid Company, Department of the Environment, other Electricity Companies and other utilities before proceeding.

It is not intended that the issue of these plans will absolve either party from their obligation under any of the acts that control digging in the public highways.

Supplies To Properties, etc.

The location of cables supplying individual properties, street lighting, traffic signs, telephone kiosks etc. are not always shown on the plans. You should assume that each property, streetlight etc. will have its own supply cable.

Major Circuits

Where our plans indicate the presence of cables with a voltage exceeding 11,000 volts, you are advised to contact our local depot (telephone number is on the plans), before commencing any excavations within the vicinity of these cables. These major transmission circuits form an extremely important link in Scottish and Southern Energy's network, and damaging or modifying these circuits is a major and costly undertaking. Any development should therefore be designed to allow these circuits to remain undisturbed and accessible in their present location.

For your own and your workmates' safety, please follow the **do's** and **don'ts** listed below:

- ✓ **do** make sure you have plans of the underground cables in the area **before** any excavation work starts. Remember that some cables may not be shown on plans. If carrying out emergency work, excavate as though there are buried live cables in the vicinity.
- ✓ **do** use a cable locator to determine the position of existing cables in the work area. The positions should be marked and tests made as work proceeds. **If in doubt, get advice from your supervisor.**
- ✓ **do** ask for a cable to be made dead if it is buried in concrete.
- ✓ **do** watch for signs of cables as work progresses. Note any marker-tape or cable-cover, which may be exposed.

- ✓ **do** backfill carefully, using stone-free soil around the cables, replacing marker-tapes and / or covers.
- ✓ **do** notify us immediately if you accidentally damage our cables. Arrange to keep people well clear of a cable that has been damaged until we have confirmed it has been made safe.
- ✓ **do** make sure before starting to demolish a building that all cables have been disconnected. We welcome prior notice of the intention to demolish buildings. This enables us to ensure that the site has been made safe electrically.
- ✓ **don't** operate a bulldozer, scraper, dragline or excavator; unless you are satisfied that there are no buried cables in the working area.
- ✓ **don't** use picks, pins, forks or pointed instruments in soft clay or soil when cables are present. Exercise extreme caution where such instruments are used to free lumps of stone, or break up firmly compacted ground. **Never** throw a fork or sharp instrument into the ground.
- ✓ **don't** dig trial holes over the indicated route of the cable. Excavate alongside instead.
- ✓ **don't** use exposed cables as a convenient step or handhold.
- ✓ **don't** handle or attempt to alter the position of any cable.

Remember that a damaged cable may cause extensive loss of supplies, make expensive repairs necessary and cause serious or even fatal injury.

If effective measures are not adopted to protect our equipment, we will take steps to recover the cost of any damage caused. Persons causing damage resulting in loss of supply to customers can be held legally responsible for any claims made by those customers. Promptness in reporting an incident will minimise costs.

In most cases it is not practicable to make cables dead without interrupting supplies to our customers. But given adequate notice, we will wherever possible, give advice regarding special precautions which may be necessary on any site where particular problems are likely to be encountered. The right is reserved to make a charge for this service.

Electricity cables can exist anywhere - under paths or roads, in gardens or driveways, on new housing or industrial development sites or even farmland.

Watch it! - Working in the vicinity of overhead lines

For your own and your workmates' safety, please follow the **do's** and **don'ts** listed below

- ✓ **do** carefully note the position of all overhead lines before commencing work.
- ✓ **do** co-operate with us during planning and sitework stages.
- ✓ **do** follow the advice given in HSE Guidance Note GS 6 when siting barriers, goal posts, bunting etc.
- ✓ **do** keep overhead lines in view when moving scaffolding or machinery and take special care when felling or lopping trees.
- ✓ **do** remember that the raising or slewing of a crane or excavator jib may cause danger when operating near an overhead line.
- ✓ **do** avoid any machinery that is in contact with an overhead line until we confirm that conditions are safe.
- ✓ **do** warn others to keep well clear.

- ✓ **don't** drive a high vehicle below an overhead line when an alternative route is available.
- ✓ **don't** raise the bed of a tipper lorry beneath an overhead line or drive under the line with the body of the vehicle raised.
- ✓ **don't** steady any suspended load until you are satisfied that there is no danger from overhead lines.
- ✓ **don't** handle or use scaffold platforms, poles, pipes or ladders unless they are at a safe distance from overhead lines.
- ✓ **don't** transport long objects beneath overhead lines, unless they are carried in a horizontal position.
- ✓ **don't** approach or touch any broken or fallen overhead lines.

Always remember that:

- Electricity can jump gaps.
- Contact or near contact with a crane jib, scaffold or ladder can cause a discharge of electricity with a risk of fatal or severe shock and burns to any person in the vicinity.

If effective measures are not adopted to protect our equipment, we will take steps to recover the cost of any damage caused. Persons causing damage resulting in loss of supply to customers can be held legally responsible for any claims made by those customers. Promptness in reporting an incident will minimise costs.

In most cases it is not practicable to make overhead lines dead without interrupting supplies to customers. However, provided adequate notice is given, then we will, whenever possible, give advice regarding special precautions which may be necessary on site where specific problems may be encountered. The right is reserved to make a charge for this service.



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Analytical Report Number : 11-28269

Replaces Analytical Report Number : 11-28269, issue no. 1

Project / Site name:	Arundel Gasworks	Samples received on:	20/06/2011
Your job number:		Samples instructed on:	20/06/2011
Your order number:		Analysis completed by:	07/07/2011
Report Issue Number:	2	Report issued on:	07/07/2011
Samples Analysed:	7 leachate samples - 35 soil samples - 1 water sample		

Signed:

Dr Claire Stone
Quality Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Thurstan Plummer
Organics Technical Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	8.1	12
Total mass of sample received	kg	0.001	NONE	0.57	0.73
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.8	7.5	7.5	7.0
Total Cyanide	mg/kg	1	MCERTS	3.5	< 1.0	< 1.0	4.6	7.2
Complex Cyanide	mg/kg	1	NONE	3.5	< 1.0	< 1.0	3.5	5.2
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	1	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	22	< 5.0	< 5.0	< 5.0	40
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	2.6	1.9	0.7	7.6	0.2
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.3	2.6	2.3	10	8.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	7.9	< 1.0	< 1.0	< 1.0	1.5
Cresols	µg/kg	1	NONE	5.2	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	4.7	< 0.1	< 0.1	0.5	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

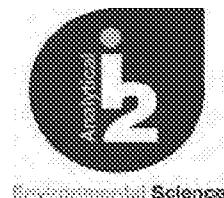
Total Phenols (HPLC)	µg/kg	7	NONE	18	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	2.5	< 0.05	< 0.05	1.2	2.7
Acenaphthylene	mg/kg	0.2	MCERTS	2.6	< 0.20	< 0.20	0.90	7.0
Acenaphthene	mg/kg	0.1	MCERTS	0.50	< 0.10	< 0.10	0.22	1.4
Fluorene	mg/kg	0.2	MCERTS	2.4	< 0.20	< 0.20	0.58	7.8
Phenanthrene	mg/kg	0.2	MCERTS	24	< 0.20	< 0.20	8.6	48
Anthracene	mg/kg	0.1	MCERTS	9.1	< 0.10	< 0.10	1.7	15
Fluoranthene	mg/kg	0.2	MCERTS	48	< 0.20	< 0.20	21	63
Pyrene	mg/kg	0.2	MCERTS	36	< 0.20	< 0.20	17	48
Benzo(a)anthracene	mg/kg	0.2	MCERTS	35	< 0.20	< 0.20	13	39
Chrysene	mg/kg	0.05	MCERTS	23	< 0.05	< 0.05	14	30
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	28	< 0.10	< 0.10	19	35
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	13	< 0.20	< 0.20	8.7	19
Benzo(a)pyrene	mg/kg	0.1	MCERTS	21	< 0.10	< 0.10	14	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	11	< 0.20	< 0.20	10	18
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	3.0	< 0.20	< 0.20	2.0	3.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	9.4	< 0.05	< 0.05	9.5	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	270	< 1.6	< 1.6	140	390
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180214	180215	180216	180217	180218
Sample Reference				TP101	TP102	TP102	TP103	TP104
Sample Number				ES1	ES1	ES2	ES1	ES1
Depth (m)				0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.3	11	18	26	20
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.4	< 0.2	1.4	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	0.5	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	33	29	34	23	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	16	19	91	58
Lead (aqua regia extractable)	mg/kg	2	MCERTS	90	15	14	570	260
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	1.2	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	70	17	35	26	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.4	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	62	47	65	240	180

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180214	180215	180216	180217	180218
Sample Reference	TP101	TP102	TP102	TP103	TP104
Sample Number	ES1	ES1	ES2	ES1	ES1
Depth (m)	0.40-0.50	0.40-0.50	1.80-2.00	0.20-0.30	0.40-0.50
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	17	< 1.0	< 1.0	14	18
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	40	< 2.0	< 2.0	21	52
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	560	< 10	< 10	180	530
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	1500	< 10	< 10	810	1700
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	2100	< 10	< 10	1000	2300

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	46	< 0.1	37	20	38
Moisture Content	%	N/A	NONE	7.5	11	9.4	7.7	7.8
Total mass of sample received	kg	0.001	NONE	0.88	0.47	0.65	0.77	0.87
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	6.7	6.6	7.6	7.3
Total Cyanide	mg/kg	1	MCERTS	2.1	41	3.3	9.1	64
Complex Cyanide	mg/kg	1	NONE	2.1	39	3.3	9.1	61
Free Cyanide	mg/kg	1	NONE	< 1	1	< 1	< 1	3
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	0.19	0.35	< 0.0025	1.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	40	6.9	< 5.0	36	21
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	260
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	91	< 5.0	67
Organic Matter	%	0.1	MCERTS	1.3	4.5	1.2	5.0	4.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	3.9	20	5.0	8.0	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	4.2	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.4	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	2.9	< 0.1	0.5	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

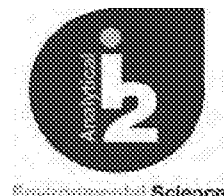
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	9.5	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.43	12	0.31	4.7	8.1
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	2.6	< 0.20	8.2	2.0
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.78	< 0.10	1.6	0.90
Fluorene	mg/kg	0.2	MCERTS	< 0.20	2.3	0.39	10	4.4
Phenanthrene	mg/kg	0.2	MCERTS	0.37	28	2.4	68	27
Anthracene	mg/kg	0.1	MCERTS	0.15	9.9	0.60	27	5.7
Fluoranthene	mg/kg	0.2	MCERTS	0.84	56	3.9	110	40
Pyrene	mg/kg	0.2	MCERTS	0.81	48	3.0	85	33
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.59	41	2.0	76	22
Chrysene	mg/kg	0.05	MCERTS	0.62	33	1.3	61	20
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	1.1	42	1.8	89	25
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	0.41	25	0.68	26	12
Benzo(a)pyrene	mg/kg	0.1	MCERTS	1.0	37	1.4	62	18
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	0.86	24	0.78	32	11
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	4.1	< 0.20	6.4	2.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.0	25	0.81	30	11

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	8.4	390	19	700	240
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	23	29	22	34	23
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	3.3	2.2	3.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.3	< 0.2	0.5	0.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	57	41	50	25	58
Copper (aqua regia extractable)	mg/kg	1	MCERTS	27	63	47	56	31
Lead (aqua regia extractable)	mg/kg	2	MCERTS	42	1400	24	430	1000
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.4	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	40	46	35	26	26
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	93	290	62	210	1800

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180219	180220	180221	180222	180223
Sample Reference				TP104	TP105	TP105	TP106	TP106
Sample Number				ES2	ES1	ES2	ES1	ES2
Depth (m)				1.50-1.60	0.90-1.00	2.00-2.10	0.30-0.40	0.80-0.90
Date Sampled				14/06/2011	16/06/2011	16/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	8.5
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	59
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	700
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	650
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	1400

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	45	2.5	18	18
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	83	< 2.0	52	33
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	< 10	790	10	790	1800
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	< 10	2100	22	2900	3100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	3000	35	3700	5000



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	26	< 0.1
Moisture Content	%	N/A	NONE	14	13	12	7.1	12
Total mass of sample received	kg	0.001	NONE	0.80	0.85	0.98	0.81	0.81
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.7	7.8	7.6	7.4	7.4
Total Cyanide	mg/kg	1	MCERTS	5.2	< 1.0	2.3	100	7.9
Complex Cyanide	mg/kg	1	NONE	5.2	< 1.0	2.3	100	7.9
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	0.035	0.70	0.88
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	23	12
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	0.7	1.8	0.7	4.6	2.4
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.4	4.0	2.9	5.1	5.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	3.2	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	2.6	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	1.4	0.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

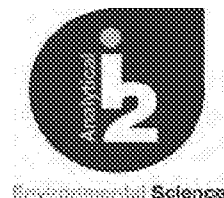
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.2	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.96	< 0.05	5.5	1.5
Acenaphthylene	mg/kg	0.2	MCERTS	< 0.20	0.80	< 0.20	8.9	1.5
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.19	< 0.10	0.94	0.31
Fluorene	mg/kg	0.2	MCERTS	< 0.20	0.38	< 0.20	2.8	0.96
Phenanthrene	mg/kg	0.2	MCERTS	< 0.20	2.1	0.37	26	9.2
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.94	0.20	15	3.3
Fluoranthene	mg/kg	0.2	MCERTS	0.37	5.4	1.2	78	22
Pyrene	mg/kg	0.2	MCERTS	0.32	4.7	1.0	66	18
Benzo(a)anthracene	mg/kg	0.2	MCERTS	0.27	3.6	0.86	58	13
Chrysene	mg/kg	0.05	MCERTS	0.18	3.6	0.59	46	12
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.27	5.4	0.97	76	17
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	< 0.20	2.0	0.37	20	5.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.23	4.0	0.73	57	13
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	< 0.20	2.7	0.54	33	8.4
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	< 0.20	0.47	< 0.20	5.7	1.5
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.7	0.54	34	8.4

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1.6	40	7.4	530	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.8	7.3	16	14	16
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	< 0.2	1.0	0.6	1.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.2	0.4	0.4	0.3
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	11	28	18	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	45	22	42	37
Lead (aqua regia extractable)	mg/kg	2	MCERTS	11	160	18	320	580
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	< 0.3	< 0.3	0.5
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	11	11	35	16	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	2.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	28	38	64	150	130

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180224	180225	180226	180227	180228
Sample Reference				TP106	TP107	TP107	TP108A	TP108B
Sample Number				ES3	ES1	ES2	ES1	ES1
Depth (m)				2.60-2.80	0.40-0.50	2.40-2.50	0.50-0.60	1.40-1.50
Date Sampled				14/06/2011	14/06/2011	14/06/2011	14/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	3.7	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	14	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	36	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	54	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	7.4	< 1.0	23	15
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	6.6	< 2.0	52	19
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	< 10	28	< 10	730	190
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	< 10	120	< 10	2800	810
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	160	< 10	3600	1000



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180229	180230	180231	180232	180233
Sample Reference	TP109A	TP109B	TP110	TP111	TP111
Sample Number	ES1	ES1	ES1	ES1	ES2
Depth (m)	0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled	15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	33	< 0.1
Moisture Content	%	N/A	NONE	6.3	14
Total mass of sample received	kg	0.001	NONE	0.64	0.64
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.7	7.6	7.4	7.5
Total Cyanide	mg/kg	1	MCERTS	2.1	< 1.0	< 1.0	49	83
Complex Cyanide	mg/kg	1	NONE	2.1	< 1.0	< 1.0	49	82
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	3.1
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	49	< 5.0	< 5.0	< 5.0	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	1900
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	460
Organic Matter	%	0.1	MCERTS	4.4	3.4	3.3	1.8	7.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.0	9.2	4.5	4.8	6.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.2	< 1.0	< 1.0	2.0	4.3
Cresols	µg/kg	1	NONE	1.5	< 1.0	< 1.0	2.4	3.4
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	2.1	< 0.1	0.6	3.3	1.6
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

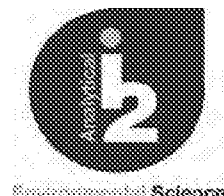
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	7.7	9.3
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	10	0.65	1.6	9.1	130
Acenaphthylene	mg/kg	0.2	MCERTS	47	0.25	1.6	4.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	8.2	< 0.10	0.20	1.4	28
Fluorene	mg/kg	0.2	MCERTS	43	0.22	0.72	7.3	140
Phenanthrene	mg/kg	0.2	MCERTS	200	0.93	4.7	24	290
Anthracene	mg/kg	0.1	MCERTS	130	0.39	2.4	13	170
Fluoranthene	mg/kg	0.2	MCERTS	220	2.9	18	37	220
Pyrene	mg/kg	0.2	MCERTS	190	2.6	18	28	150
Benzo(a)anthracene	mg/kg	0.2	MCERTS	250	2.4	15	27	120
Chrysene	mg/kg	0.05	MCERTS	150	2.1	13	18	79
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	250	3.3	21	21	90
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	83	1.1	7.2	9.5	27
Benzo(a)pyrene	mg/kg	0.1	MCERTS	160	2.4	16	15	56
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	87	1.5	9.5	8.2	20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	24	0.30	2.0	2.2	8.6
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	79	1.4	9.2	7.2	18

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1900	22	140	230	1600
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	14	16	15	11
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	1.1	< 0.2	0.7	2.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	0.2	0.4	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	24	16	15	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	36	64	32	66	21
Lead (aqua regia extractable)	mg/kg	2	MCERTS	450	260	130	410	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	34	37	16	20	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	1.6	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	100	150	130	58	34

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180229	180230	180231	180232	180233
Sample Reference				TP109A	TP109B	TP110	TP111	TP111
Sample Number				ES1	ES1	ES1	ES1	ES2
Depth (m)				0.40-0.50	0.30-0.40	0.40-0.50	0.90-1.00	1.40-1.60
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	3.5
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	180
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	170
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.3
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.9
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	14	9.0	14	38	80
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	220	8.7	22	77	1100
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	4700	40	170	590	7400
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	9700	250	810	1400	9100
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	15000	310	1000	2100	18000

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180234				180235	180236	180237	180238
Sample Reference	TP112				TP112	TP113	TP113	TP114
Sample Number	ES1				ES2	ES2	ES3	ES1
Depth (m)	0.60-0.80				2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled	15/06/2011				15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	34	38	16	62	< 0.1
Moisture Content	%	N/A	NONE	7.9	9.0	13	5.8	6.2
Total mass of sample received	kg	0.001	NONE	0.82	0.91	0.81	0.88	0.81
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent	Absent	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.5	7.7	7.3	8.5	7.5
Total Cyanide	mg/kg	1	MCERTS	7.2	2.3	85	160	6.0
Complex Cyanide	mg/kg	1	NONE	7.2	2.3	84	150	4.4
Free Cyanide	mg/kg	1	NONE	< 1	< 1	1	7	2
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	0.90	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	25	19	46	7.9
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	5600	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	730	< 5.0
Organic Matter	%	0.1	MCERTS	3.3	2.2	3.8	1.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	4.8	3.7	4.7	3.3	3.1

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	2.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	3.2	< 1.0	3.4	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.8	< 0.1	1.6	0.9	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

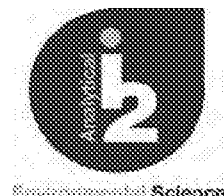
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	12	0.32	3.9	35	0.23
Acenaphthylene	mg/kg	0.2	MCERTS	9.8	< 0.20	5.0	2.1	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	1.5	< 0.10	0.85	3.8	< 0.10
Fluorene	mg/kg	0.2	MCERTS	10	< 0.20	4.6	22	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	120	0.35	22	56	< 0.20
Anthracene	mg/kg	0.1	MCERTS	55	0.17	12	21	< 0.10
Fluoranthene	mg/kg	0.2	MCERTS	150	0.88	58	39	0.28
Pyrene	mg/kg	0.2	MCERTS	120	0.72	45	28	0.24
Benzo(a)anthracene	mg/kg	0.2	MCERTS	130	0.58	40	16	< 0.20
Chrysene	mg/kg	0.05	MCERTS	87	0.48	31	12	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	130	0.60	39	13	0.19
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	43	0.25	15	3.6	< 0.20
Benzo(a)pyrene	mg/kg	0.1	MCERTS	78	0.43	30	8.8	0.14
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	46	< 0.20	14	5.0	< 0.20
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	11	< 0.20	3.2	0.78	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	41	< 0.05	13	4.5	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	1000	4.8	340	270	< 1.6
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	26	19	15	8.8
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.3	0.3	0.4	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.8	< 0.2	0.3	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	45	32	33	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	47	42	34	29	20
Lead (aqua regia extractable)	mg/kg	2	MCERTS	130	17	89	12	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	19	78	17	23	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	92	120	59	42	71

Analytical Report Number: 11-28269

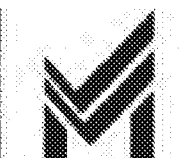
Project / Site name: Arundel Gasworks

Lab Sample Number				180234	180235	180236	180237	180238
Sample Reference				TP112	TP112	TP113	TP113	TP114
Sample Number				ES1	ES2	ES2	ES3	ES1
Depth (m)				0.60-0.80	2.50-2.60	0.80-0.90	1.40-1.60	0.30-0.40
Date Sampled				15/06/2011	15/06/2011	15/06/2011	15/06/2011	14/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	15	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	13	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	15	15	< 1.0
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	73	< 2.0	97	280	< 2.0
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	1600	< 10	850	850	< 10
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	3800	< 10	2400	640	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	5400	< 10	3400	1800	< 10



4843

MCERTS



Analytical Science

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180239	180240	180241	180242	180243
Sample Reference	TP115	TP115	VP200B	VP200B	VP201
Sample Number	ES1	ES2	ES1	ES2	ES1
Depth (m)	0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled	16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	40
Moisture Content	%	N/A	NONE	10	12
Total mass of sample received	kg	0.001	NONE	0.58	0.69
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.9	5.1	6.8	6.9	7.7
Total Cyanide	mg/kg	1	MCERTS	12	< 1.0	6.1	1.5	< 1.0
Complex Cyanide	mg/kg	1	NONE	12	< 1.0	6.1	1.5	< 1.0
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	5.3	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	20	12	< 5.0	25	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	44	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	1.7	0.9	2.2	1.2	1.7
Loss on Ignition @ 450°C	%	0.2	MCERTS	6.3	5.0	4.0	3.5	3.0

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

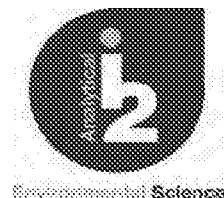
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.82	0.19	0.47	0.26	0.33
Acenaphthylene	mg/kg	0.2	MCERTS	0.77	< 0.20	< 0.20	< 0.20	< 0.20
Acenaphthene	mg/kg	0.1	MCERTS	0.22	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.2	MCERTS	0.47	< 0.20	< 0.20	< 0.20	< 0.20
Phenanthrene	mg/kg	0.2	MCERTS	3.6	< 0.20	1.5	0.29	1.6
Anthracene	mg/kg	0.1	MCERTS	1.1	< 0.10	0.71	< 0.10	0.40
Fluoranthene	mg/kg	0.2	MCERTS	9.8	< 0.20	4.0	0.37	2.3
Pyrene	mg/kg	0.2	MCERTS	8.1	< 0.20	3.2	0.30	1.8
Benzo(a)anthracene	mg/kg	0.2	MCERTS	6.3	< 0.20	2.3	< 0.20	1.1
Chrysene	mg/kg	0.05	MCERTS	5.3	< 0.05	2.4	< 0.05	1.3
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	8.8	< 0.10	2.6	< 0.10	1.2
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	2.9	< 0.20	1.3	< 0.20	0.72
Benzo(a)pyrene	mg/kg	0.1	MCERTS	6.4	< 0.10	1.9	< 0.10	0.66
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	5.3	< 0.20	1.3	< 0.20	0.47
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	0.85	< 0.20	< 0.20	< 0.20	< 0.20
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	5.8	< 0.05	1.5	< 0.05	0.79

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	67	< 1.6	23	< 1.6	13
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	16	12	14	14
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.2	0.4	0.9	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	43	18	38	21
Copper (aqua regia extractable)	mg/kg	1	MCERTS	60	32	34	34	25
Lead (aqua regia extractable)	mg/kg	2	MCERTS	140	17	390	14	76
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	0.7	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	26	28	15	33	22
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	51	57	80	54

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180239	180240	180241	180242	180243
Sample Reference				TP115	TP115	VP200B	VP200B	VP201
Sample Number				ES1	ES2	ES1	ES2	ES1
Depth (m)				0.90-1.00	2.30-2.50	0.30-0.40	0.90-1.00	0.30-0.40
Date Sampled				16/06/2011	16/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	7.5	< 1.0	4.2	< 1.0	< 1.0
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	44	< 2.0	12	< 2.0	< 2.0
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	200	< 10	25	< 10	< 10
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	290	< 10	69	< 10	< 10
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	540	< 10	110	< 10	< 10

Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180244	180245	180246	180247	180248
Sample Reference	VP202	VP203C	VP203C	VP204	VP204
Sample Number	ES1	ES1	ES2	ES1	ES2
Depth (m)	0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled	13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	17	45
Moisture Content	%	N/A	NONE	11	5.7
Total mass of sample received	kg	0.001	NONE	0.80	0.79
Fibrous Material	P/A	N/A	ISO 17025	Absent	Absent

General Inorganics

pH	pH Units	N/A	MCERTS	7.6	7.5	7.8	6.0	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	5.1	2.6	< 1.0	6.6
Complex Cyanide	mg/kg	1	NONE	< 1.0	5.1	2.6	< 1.0	6.6
Free Cyanide	mg/kg	1	NONE	< 1	< 1	< 1	< 1	< 1
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Water Soluble Sulphate as SO ₄ (2:1)	g/l	0.0025	MCERTS	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
Water Soluble Chloride (2:1)	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	93	< 5.0
Elemental Sulphur	mg/kg	20	NONE	< 20	< 20	< 20	< 20	< 20
Ammonium as NH ₄	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Organic Matter	%	0.1	MCERTS	6.4	3.3	1.8	2.9	2.3
Loss on Ignition @ 450°C	%	0.2	MCERTS	5.8	6.9	3.6	3.8	3.6

Phenols by HPLC

Catechol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Resorcinol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Butyl Phenols	µg/kg	1	NONE	< 1.0	1.7	< 1.0	< 1.0	< 1.0
Cresols	µg/kg	1	NONE	< 1.0	2.1	< 1.0	< 1.0	1.1
Naphthols	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Phenol	µg/kg	0.1	ISO 17025	1.0	1.1	< 0.1	< 0.1	0.8
Trimethylphenol	µg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

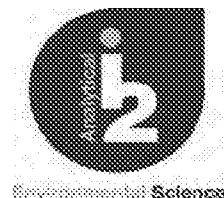
Total Phenols (HPLC)	µg/kg	7	NONE	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	23	2.6	0.37	2.0	0.86
Acenaphthylene	mg/kg	0.2	MCERTS	40	6.9	< 0.20	0.69	0.76
Acenaphthene	mg/kg	0.1	MCERTS	12	1.4	0.11	3.8	0.53
Fluorene	mg/kg	0.2	MCERTS	55	7.5	0.30	3.8	0.88
Phenanthrene	mg/kg	0.2	MCERTS	360	63	2.2	35	12
Anthracene	mg/kg	0.1	MCERTS	140	20	0.67	12	4.0
Fluoranthene	mg/kg	0.2	MCERTS	370	120	3.3	60	25
Pyrene	mg/kg	0.2	MCERTS	300	96	2.6	51	21
Benzo(a)anthracene	mg/kg	0.2	MCERTS	230	59	1.5	28	12
Chrysene	mg/kg	0.05	MCERTS	170	47	1.1	23	8.9
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	230	70	1.4	35	15
Benzo(k)fluoranthene	mg/kg	0.2	MCERTS	77	25	0.82	9.1	3.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	150	53	1.3	26	10
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	MCERTS	94	33	0.77	16	7.4
Dibenz(a,h)anthracene	mg/kg	0.2	MCERTS	21	6.1	< 0.20	3.0	1.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	90	32	0.88	20	8.3

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	2400	650	17	330	130
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180244	180245	180246	180247	180248
Sample Reference	VP202	VP203C	VP203C	VP204	VP204
Sample Number	ES1	ES1	ES2	ES1	ES2
Depth (m)	0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled	13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	21	12	8.6	9.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.2	< 0.2	2.1	< 0.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.3	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	24	34	23	15
Copper (aqua regia extractable)	mg/kg	1	MCERTS	960	46	16	16	26
Lead (aqua regia extractable)	mg/kg	2	MCERTS	190	270	15	23	65
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	2	MCERTS	17	20	14	15	10
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	2	MCERTS	220	220	48	43	54

Analytical Report Number: 11-28269

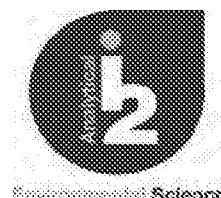
Project / Site name: Arundel Gasworks

Lab Sample Number				180244	180245	180246	180247	180248
Sample Reference				VP202	VP203C	VP203C	VP204	VP204
Sample Number				ES1	ES1	ES2	ES1	ES2
Depth (m)				0.20-0.30	0.30-0.40	1.00-1.10	0.20-0.30	1.00-1.10
Date Sampled				13/06/2011	13/06/2011	13/06/2011	13/06/2011	13/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH7 - Aliphatic > EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aliphatic > EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH7 - Aliphatic > EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH7 - Aliphatic > EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic > EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH7 - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH7 - Aromatic > EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH7 - Aromatic > EC10 - EC12	mg/kg	1	MCERTS	180	7.3	2.7	6.9	7.1
TPH7 - Aromatic > EC12 - EC16	mg/kg	2	MCERTS	830	65	7.3	50	35
TPH7 - Aromatic > EC16 - EC21	mg/kg	10	MCERTS	5100	1000	13	520	270
TPH7 - Aromatic > EC21 - EC35	mg/kg	10	MCERTS	8000	2600	47	1300	450
TPH7 - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	14000	3600	70	1900	760



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH units	N/A	ISO 17025	7.2				
Electrical Conductivity	µS/cm	10	NONE	670				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Complex Cyanide	µg/l	10	NONE	< 10				
Free Cyanide	µg/l	10	NONE	< 10				
Thiocyanate as SCN	µg/l	30	NONE	< 30				
Sulphate as SO ₄	µg/L	45	ISO 17025	25000				
Sulphide	µg/l	5	NONE	< 5.0				
Chloride	mg/l	4	ISO 17025	80				
Ammonium as NH ₄	µg/l	15	ISO 17025	180				
Total Organic Carbon (TOC)	mg/l	0.1	NONE	8.0				
Total Suspended Solids	mg/l	5	NONE	< 5.0				

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5				
Resorcinol	µg/l	0.5	NONE	< 0.5				
Ethylphenol & Dimethylphenol	µg/l	0.5	NONE	< 0.5				
Cresols	µg/l	0.5	NONE	< 0.5				
Naphthols	µg/l	0.5	NONE	< 0.5				
Phenol	µg/l	0.5	NONE	< 0.5				
Trimethylphenol	µg/l	0.5	NONE	< 0.5				

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5				
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.2	ISO 17025	< 0.2				
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Heavy Metals / Metalloids

Cadmium (dissolved)	µg/l	0.1	ISO 17025	< 0.1				
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.3				
Copper (dissolved)	µg/l	0.7	ISO 17025	14				
Iron (dissolved)	mg/l	0.004	ISO 17025	0.038				
Lead (dissolved)	µg/l	1	ISO 17025	2.1				
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5				
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.8				
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0				
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.9				

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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180213				
Sample Reference				SW1				
Sample Number				ES1				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

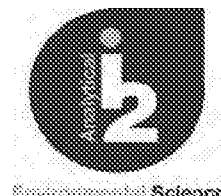
Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH7 - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number	180249	180250	180251	180252	180253
Sample Reference	TP102	TP104	TP105	TP108B	TP111
Sample Number	ES1	ES2	ES1	ES1	ES2
Depth (m)	0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled	15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	7.9	7.8	8.0	7.4	7.8
Electrical Conductivity	µS/cm	10	NONE	< 10	40	140	290	730
Total Cyanide	µg/l	10	ISO 17025	15	< 10	24	240	420
Complex Cyanide	µg/l	25	NONE	< 25	< 25	< 25	240	420
Free Cyanide	µg/l	25	NONE	< 25	< 25	< 25	< 25	< 25
Free Cyanide (Low Level)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30	< 30	< 30	< 30
Sulphate as SO ₄	µg/l	100	ISO 17025	110	2300	27000	80000	220000
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	4	NONE	< 4.0	< 4.0	< 4.0	4.3	< 4.0
Ammonium as NH ₄	µg/l	15	NONE	88	110	96	71	17000
Total Organic Carbon (TOC)	mg/l	0.1	NONE	6.8	6.8	5.9	6.7	20

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Butyl Phenols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Cresols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.8
Acenaphthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	8.0
Fluorene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	9.1
Phenanthrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	4.0
Anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	3.2
Pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	28
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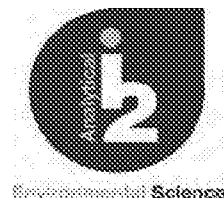
Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	< 1.1	1.1	1.3	3.5	3.6
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.19	0.23	< 0.10	< 0.10	< 0.10
Chromium (dissolved)	µg/l	0.4	ISO 17025	9.4	6.1	3.0	3.1	2.2
Copper (dissolved)	µg/l	0.7	ISO 17025	14	16	15	17	14
Iron (dissolved)	mg/l	0.004	ISO 17025	5.5	3.3	1.6	0.39	0.40
Lead (dissolved)	µg/l	1	ISO 17025	9.2	5.6	15	18	4.3
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	3.8	3.2	4.5	1.8	1.6
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0

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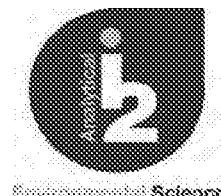
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

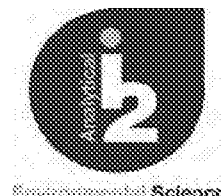
Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP108B	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status					
Zinc (dissolved)	ug/l	0.4	ISO 17025	11	11	6.9	9.2	3.4



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180249	180250	180251	180252	180253
Sample Reference				TP102	TP104	TP105	TP108B	TP111
Sample Number				ES1	ES2	ES1	ES1	ES2
Depth (m)				0.40-0.50	1.50-1.60	0.90-1.00	1.40-1.50	1.40-1.60
Date Sampled				15/06/2011	14/06/2011	16/06/2011	14/06/2011	15/06/2011
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C5 - C6	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C5 - C7	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	57
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	470
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	1100
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	19



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)								
	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	8.4	7.4			
Electrical Conductivity	µS/cm	10	NONE	430	370			
Total Cyanide	µg/l	10	ISO 17025	1500	15			
Complex Cyanide	µg/l	25	NONE	1500	< 25			
Free Cyanide	µg/l	25	NONE	< 25	< 25			
Free Cyanide (Low Level)	µg/l	10	NONE	14	< 10			
Thiocyanate as SCN	µg/l	30	NONE	< 30	< 30			
Sulphate as SO ₄	µg/l	100	ISO 17025	130000	160000			
Sulphide	µg/l	5	NONE	5000	< 5.0			
Chloride	mg/l	4	NONE	11	< 4.0			
Ammonium as NH ₄	µg/l	15	NONE	33000	3200			
Total Organic Carbon (TOC)	mg/l	0.1	NONE	20	2.6			

Phenols by HPLC

Catechol	µg/l	0.5	NONE	< 0.5	< 0.5			
Resorcinol	µg/l	0.5	NONE	< 0.5	< 0.5			
Butyl Phenols	µg/l	0.5	NONE	77	< 0.5			
Cresols	µg/l	0.5	NONE	10	< 0.5			
Naphthols	µg/l	0.5	NONE	< 0.5	< 0.5			
Phenol	µg/l	0.5	NONE	< 0.5	< 0.5			
Trimethylphenol	µg/l	0.5	NONE	< 0.5	< 0.5			

Total Phenols

Total Phenols (HPLC)	µg/l	3.5	NONE	88	< 3.5			
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Speciated PAHs

Naphthalene	µg/l	0.01	NONE	< 0.01	1.5			
Acenaphthylene	µg/l	0.01	NONE	3.6	< 0.01			
Acenaphthene	µg/l	0.01	NONE	33	< 0.01			
Fluorene	µg/l	0.01	NONE	11	< 0.01			
Phenanthrene	µg/l	0.01	NONE	14	< 0.01			
Anthracene	µg/l	0.01	NONE	7.2	< 0.01			
Fluoranthene	µg/l	0.01	NONE	4.7	< 0.01			
Pyrene	µg/l	0.01	NONE	3.1	< 0.01			
Benzo(a)anthracene	µg/l	0.01	NONE	1.9	< 0.01			
Chrysene	µg/l	0.01	NONE	0.91	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	NONE	1.3	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	NONE	0.53	< 0.01			
Benzo(a)pyrene	µg/l	0.01	NONE	1.1	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01			

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	83	1.6			
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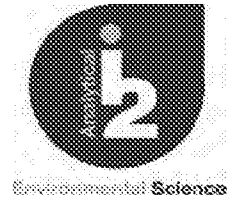
Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1.1	ISO 17025	2.9	< 1.1			
Cadmium (dissolved)	µg/l	0.1	ISO 17025	0.25	2.9			
Chromium (dissolved)	µg/l	0.4	ISO 17025	6.1	2.0			
Copper (dissolved)	µg/l	0.7	ISO 17025	26	15			
Iron (dissolved)	mg/l	0.004	ISO 17025	5.0	0.43			
Lead (dissolved)	µg/l	1	ISO 17025	90	630			
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5			
Nickel (dissolved)	µg/l	0.3	ISO 17025	9.1	7.3			
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0			

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The results included within the report are representative of the samples submitted for analysis.

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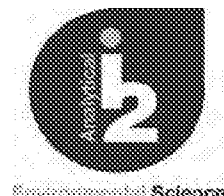
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Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		
Zinc (dissolved)				ug/l	0.4	ISO 17025	5.5	34



Analytical Report Number: 11-28269

Project / Site name: Arundel Gasworks

Lab Sample Number				180254	180255			
Sample Reference				TP113	TP115			
Sample Number				ES3	ES2			
Depth (m)				1.40-1.60	2.30-2.50			
Date Sampled				15/06/2011	16/06/2011			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Leachate Analysis)				Units	Limit of detection	Accreditation Status		
Monoaromatics								
Benzene	µg/l	1	NONE	< 1.0	< 1.0			
Toluene	µg/l	1	NONE	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	NONE	< 1.0	< 1.0			
p & m-xylene	µg/l	1	NONE	< 1.0	< 1.0			
o-xylene	µg/l	1	NONE	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C5 - C6								
TPH7 - Aliphatic >C6 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH7 - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C5 - C7								
TPH7 - Aromatic >C7 - C8	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C8 - C10	µg/l	10	NONE	< 10	< 10			
TPH7 - Aromatic >C10 - C12	µg/l	10	NONE	360	< 10			
TPH7 - Aromatic >C12 - C16	µg/l	10	NONE	2400	< 10			
TPH7 - Aromatic >C16 - C21	µg/l	10	NONE	2900	< 10			
TPH7 - Aromatic >C21 - C35	µg/l	10	NONE	240	< 10			



Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and topsoil/loam soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content

of a sample is calculated as the % weight of the stones not passing a 2 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
180214	TP101	ES1	0.40-0.50	Brown clay and gravel with vegetation.
180215	TP102	ES1	0.40-0.50	Light brown clay and gravel with brick.
180216	TP102	ES2	1.80-2.00	Light brown clay and sand.
180217	TP103	ES1	0.20-0.30	Black topsoil and gravel.
180218	TP104	ES1	0.40-0.50	Light brown topsoil and clay with stones and vegetation.
180219	TP104	ES2	1.50-1.60	Light brown clay and sand with stones and vegetation.
180220	TP105	ES1	0.90-1.00	Brown topsoil and gravel with vegetation.
180221	TP105	ES2	2.00-2.10	Light brown topsoil and gravel with stones.
180222	TP106	ES1	0.30-0.40	Brown topsoil and gravel with stones.
180223	TP106	ES2	0.80-0.90	Brown topsoil and sand with gravel and stones.
180224	TP106	ES3	2.60-2.80	Light brown clay.
180225	TP107	ES1	0.40-0.50	Light brown clay and gravel.
180226	TP107	ES2	2.40-2.50	Light brown clay and sand.
180227	TP108A	ES1	0.50-0.60	Brown topsoil and sand with gravel and stones.
180228	TP108B	ES1	1.40-1.50	Brown topsoil and gravel with brick.
180229	TP109A	ES1	0.40-0.50	Brown clay and gravel with stones and vegetation.
180230	TP109B	ES1	0.30-0.40	Brown clay and gravel with vegetation.
180231	TP110	ES1	0.40-0.50	Brown topsoil and gravel with stones and vegetation.
180232	TP111	ES1	0.90-1.00	Light brown topsoil and clay with gravel and stones.
180233	TP111	ES2	1.40-1.60	Brown topsoil and clay with brick and stones.
180234	TP112	ES1	0.60-0.80	Brown topsoil and clay with brick.
180235	TP112	ES2	2.50-2.60	Light brown clay and gravel with stones.
180236	TP113	ES2	0.80-0.90	Light brown topsoil and clay with stones.
180237	TP113	ES3	1.40-1.60	Light brown clay and gravel with stones.
180238	TP114	ES1	0.30-0.40	Light brown topsoil and clay with vegetation.
180239	TP115	ES1	0.90-1.00	Brown clay and gravel.
180240	TP115	ES2	2.30-2.50	Light brown clay and gravel with stones.
180241	VP200B	ES1	0.30-0.40	Brown topsoil and clay with gravel and vegetation.
180242	VP200B	ES2	0.90-1.00	Light brown clay and gravel with stones.
180243	VP201	ES1	0.30-0.40	Brown clay and gravel with brick and plastic.
180244	VP202	ES1	0.20-0.30	Brown topsoil and gravel with gravel and stones.
180245	VP203C	ES1	0.30-0.40	Brown topsoil and clay with gravel and stones.
180246	VP203C	ES2	1.00-1.10	Light brown topsoil and clay with gravel and stones.
180247	VP204	ES1	0.20-0.30	Brown topsoil and clay with gravel.
180248	VP204	ES2	1.00-1.10	Light brown sandy clay with gravel and stones.

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH ₄ in leachate	Determination of ammonium in leachate by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	NONE
Ammonium as NH ₄ in soil	Determination of ammonium in soil by extraction with potassium chloride followed by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	MCERTS
Ammonium as NH ₄ in water	Determination of ammonium in water by addition of buffer solution followed by ion selective electrode.	In-house method	L035-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in leachates	Determination of BTEX and MTBE in leachates by headspace GC-MS.	In-house method based on USEPA8260	L036-UK	W	NONE
BTEX and MTBE in soil	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0735-PL	W	MCERTS
BTEX and MTBE in water	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW	In-house method based on USEPA8260	L036-UK	W	ISO 17025
Chloride in leachate	Determination of chloride in leachate by titration against silver nitrate.	In-house method	L024-PL	W	NONE
Chloride in water	Determination of chloride in water by titration against silver nitrate.	In-house method	L024-PL	W	ISO 17025
Chloride, water soluble, in soil	Determination of chloride by titration using silver nitrate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L075-PL	D	MCERTS
Complex cyanide in leachate	Determination of complex cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Electrical conductivity of leachate	Determination of electrical conductivity in leachate by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-UK	W	NONE
Electrical conductivity of water	Determination of electrical conductivity in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	NONE
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in dichloromethane followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential		D	NONE
Fibrous Material in soil screening	Screening of samples for fibrous material by microscopy.	In-house method based on HSG 248	A001	W	ISO 17025

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

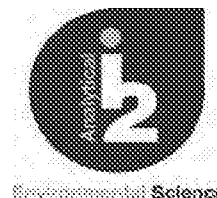
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Free cyanide in leachate	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080	W	ISO 17025
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-UK	W	ISO 17025
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
pH in water	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
Phenols, speciated, in leachate, by HPLC	Determination of speciated phenols by HPLC.	In house method based on Blue Book Method.	L030	W	NONE
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-UK	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS

Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L070-UK	W	ISO 17025
Stones content of soil	Stones not passing through a 2 mm sieve is determined gravimetrically and reported as a percentage of the dry weight. Sample results are not corrected for the stone content of the sample.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil	Determination of water soluble sulphate by extraction with water followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L010-UK	W	NONE
Suspended solids in water	Determined gravimetrically with GFC filtration papers.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-UK	W	NONE
Thiocyanate in leachate	Determination of thiocyanate in leachate by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L049-UK	W	NONE
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method	L049-PL	D	NONE
Thiocyanate in water	Determination of thiocyanate in water by acidification followed by addition of ferric nitrate followed by spectrophotometer.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L049-UK	W	NONE
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080	W	ISO 17025
Total organic carbon in leachate	Determination of total organic carbon in leachate by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Total organic carbon in water	Determination of total organic carbon in water by the measurement on a non-dispersive infrared analyser of carbon dioxide released by acidification.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE



Analytical Report Number : 11-28269

Project / Site name: Arundel Gasworks

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH7 (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
TPH7 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-UK	W	NONE
TPHCWG (Soil)	Determination of pentane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.