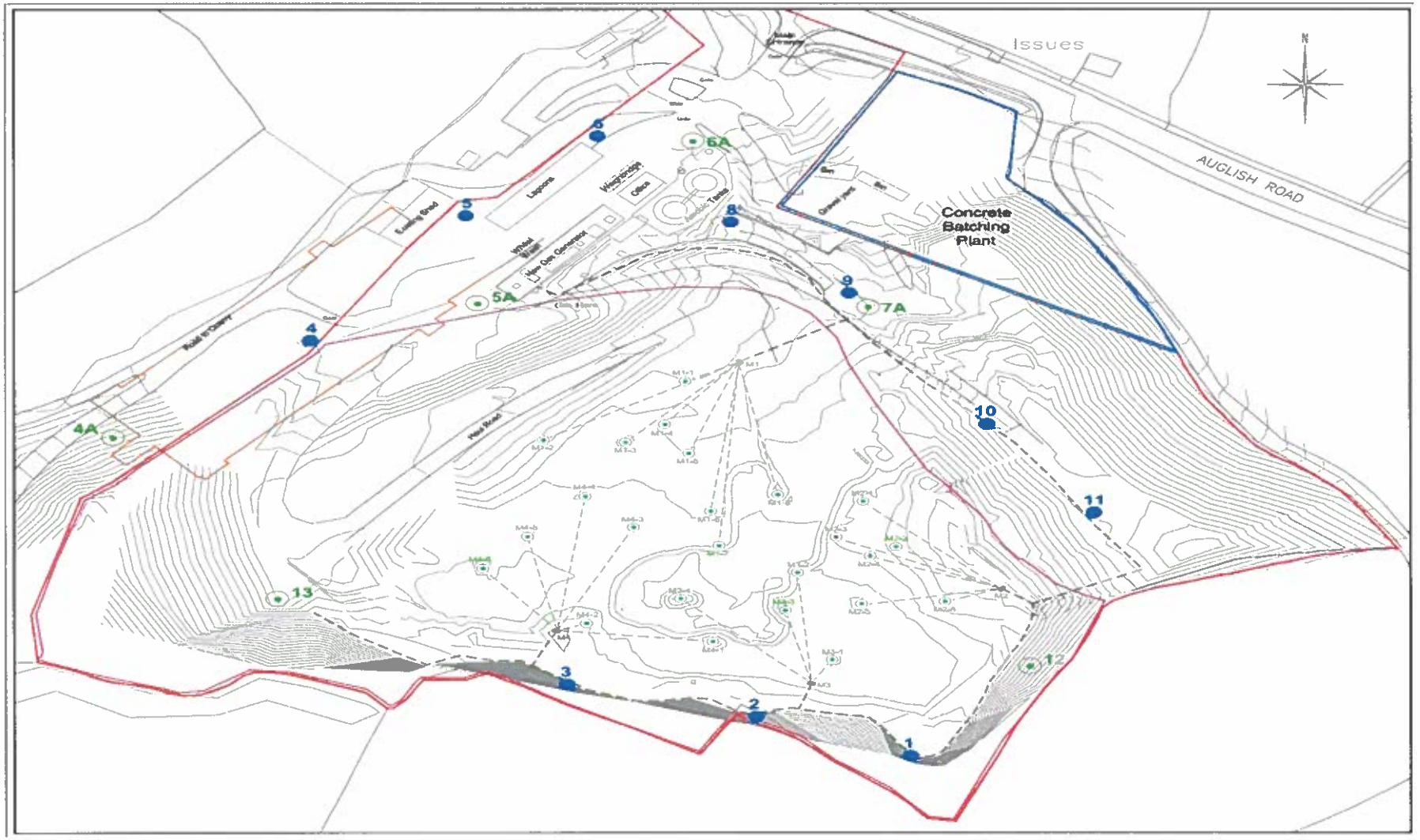

Issues
AUGLISH ROAD
Concrete Batching Plant
Lagoons
Weighbridge
Offices
Existing Road
Wheel Wash
New Dam Generator
Gravel Pad
Haul Road
Bund to Quarry
1
2
3
4
5
6
7
8
9
10
11
12
13
4A
5A
6A
7A

APPENDIX C
HAZARDOUS WASTE MONITORING 2011 & 2012

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH13A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.13							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	12					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	13.24					-	-	Dip Meter
pH	7.68					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{1}	683					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH13A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.13							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH13A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.13							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH12A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.12							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	14.4					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	14.93					-	-	Dip Meter
pH	7.56					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	610					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH12A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.12							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH12A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.12							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH10**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.11							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	13.7					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	27.63					-	-	Dip Meter
pH	7.38					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	477					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH10**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.11							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH10**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.11							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH9**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.10							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	14.2					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	18.96					-	-	Dip Meter
pH	7.03					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	1733					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH9**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.10							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH9**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.10							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH8**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.9							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	12.8					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	12.48					-	-	Dip Meter
pH	7.30					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	980					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH8**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.9							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH8**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.9							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH7A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.8							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	14.3					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	19.03					-	-	Dip Meter
pH	6.94					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	1425					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH7A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.8							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH7A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.8							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH6A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.7							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	13.7					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	4.5					-	-	Dip Meter
pH	7.17					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	1070					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

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Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH6A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.7							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH6A**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.7							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH6**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.6							
	Date	**Date**	**Date**	**Date**				
	20/09/2011							
Temperature °C	14.1					Grab	-5°C to 100°C	Electronic Thermocouple
Water Level	4.2					-	-	Dip Meter
pH	7.30					Grab	0 -14	Electrochemical
Electrical Conductivity ECuScm^{-1}	1207					Grab	1.0uScm^{-1}	Electrochemical
1:Organohalogen Compounds								
Chloroform	<0.001					Grab	0.001 mg/l	GC-MS
Carbon Tetrachloride	<0.001					Grab	0.001 mg/l	GC-MS
Chlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,4-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,3-Dichlorobenzene	<0.001					Grab	0.001 mg/l	GC-MS
1,1-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,2-Dichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Methylene Chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tetrachloroethane	<0.001					Grab	0.001 mg/l	GC-MS
Trichloroethene	<0.001					Grab	0.001 mg/l	GC-MS
1,1,1-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS
1,1,2-Trichloroethane	<0.001					Grab	0.001 mg/l	GC-MS

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Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH6**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.6							
	Date							
	20/09/2011							
2:Organophosphorus Compounds								
Sulprofos	<0.001					Grab	0.001 mg/l	GC-MS
Chlorpyrifos	<0.001					Grab	0.001 mg/l	GC-MS
Diazinon	<0.001					Grab	0.001 mg/l	GC-MS
Dichlorvos	<0.001					Grab	0.001 mg/l	GC-MS
Fenthion	<0.001					Grab	0.001 mg/l	GC-MS
Malathion	<0.001					Grab	0.001 mg/l	GC-MS
Merphos	<0.001					Grab	0.001 mg/l	GC-MS
Parathion ethyl	<0.001					Grab	0.001 mg/l	GC-MS
Parathion methyl	<0.001					Grab	0.001 mg/l	GC-MS
Phorate	<0.001					Grab	0.001 mg/l	GC-MS
prothiophus	<0.001					Grab	0.001 mg/l	GC-MS
Trichloronate	<0.001					Grab	0.001 mg/l	GC-MS
						Grab	0.001 mg/l	GC-MS
3:Organotin Compounds								
Tributyl-tin-chloride	<0.001					Grab	0.001 mg/l	GC-MS
Tributyl-tin-oxide	<0.001					Grab	0.001 mg/l	GC-MS

Signed for and on behalf of BHP Laboratories Ltd.

Chemical Analysis Report for Lisbane Landfill Site

Client: Quinn Environmental Ltd, Gortmullen, Derrylin, Co. Fermanagh, BT92 9AU

Site Address: Lisbane Landfill Site, 29 Auglish Road, Tandragee. Co. Armagh, BT62 2EE

(Sheet 1 of 1) **Monitoring Point / Grid Reference: BH6**

Annual Ground Water Monitoring

Parameter	**Results (mg/l)**					**Sampling Method**	**Normal Analytical Range or Limit of detection (LOD)**	**Analysis method / technique**
BHP Reference	100274.6							
	Date							
	20/09/2011							
4: Carcinogenic Substances*								
Atrazine	<0.001					Grab	0.001 mg/l	GC-MS
Dicchloromethane	<0.001					Grab	0.001 mg/l	GC-MS
Simazine	<0.001					Grab	0.001 mg/l	GC-MS
Toluene	<0.001					Grab	0.001 mg/l	GC-MS
Total Xylenes	<0.001					Grab	0.001 mg/l	GC-MS
5: Mercury and its compounds	<0.0005					Grab	0.0005 mg/l	AAS
6: Cadmium and its compounds	<0.001					Grab	0.001 ug/l	AAS
7: Mineral Oils/ Petroleum Hydrocarbons								
Mineral Oils	<0.01					Grab	0.01 mg/l	GC-FID
Diesel Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Petrol Range Organics	<0.01					Grab	0.01 mg/l	GC-FID
Total Petroleum Hydrocarbons	<0.01					Grab	0.01 mg/l	GC-FID
8: Persistent Synthetic Substances								
Oils, Fats and Greases	<1					Grab	1 mg/l	Extraction/Gravimetry

* Taken from SI No.12/2001 (Dangerous Substances Regulations)

Signed for and on behalf of BHP Laboratories Ltd.