

SECTION 12

Laboratory results for all groundwater monitoring wells, including the G1/04 group of wells, for VOC's, sVOC's and Organochlorine Pesticides.

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ANALYSIS OF GROUNDWATER SAMPLES.

Date Sampled : 23.11.2009
 Date Received : 23.11.2009
 Date Analysis Commenced: 23.11.2009
 Our Ref.: WS-25940, WS-25940, COV/654606/2009, 09-33307
 Your Ref : Ballymurtagh Landfill
 Certificate No: L/09/2693

ORGANOCHLORINE PESTICIDES (ng/l) ++

Determinand	Sample ID	BH96/3	G1/04	G2/04	RC 6
	Lab ID	85065	85066	85067	85068
1,2,3-Trichlorobenzene		<6	<6	<6	<6
1,2,4,-Trichlorobenzene		17	<6	<6	<6
1,2,5-Trichlorobenzene		<6	<6	<6	<6
Aldrin		<6	<6	<6	<6
DDE (op)		<2	<2	<2	<2
DDE (pp)		<2	<2	<2	<2
DDT (op)		<2	<2	<2	<2
DDT (pp)		<2	<2	<2	<2
Dichlobenill		50	<2	<2	<2
Dieldrin		<6	<2	<2	<2
Endosulphan A		<6	<6	<6	<6
Endosulphan B		<6	<6	<6	<6
Endrin		<6	<6	<6	<6
HCH - alpha		<2	<2	<2	<2
HCH - beta		4	<2	<2	<2
HCH - gamma		<2	<2	<2	<2
Heptachlor Epoxide		<2	<2	<2	<2
Hexachlorobenzene		<2	<2	<2	<2
Hexachlorobutadiene		<2	<2	<2	<2
Isodrin		<6	<6	<6	<6
Tecnazene		<10	<10	<10	<10
Alpha Chlordane		<2	<2	<2	<2
Gamma Chlordane		<2	<2	<2	<2
Triallate		<10	<10	<10	<10
Trifluralin		<10	<10	<10	<10
TDE (op)		<2	<2	<2	<2
TDE (pp)		<2	<2	<2	<2

Concentrations expressed in ng/l unless otherwise stated

** = INAB Accredited Tests ++ = Subcontracted Tests n/a = Non-INAB Accredited Tests

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Volatile Organic Compounds ++

	Sample ID	BH96/3	G1/04	G2/04	RC 6
DETERMINAND	Lab ID	85065	85066	85067	85068
Total VOC's	ug/l	< 1	< 1	< 1	< 1
1,1 Dichloroethylene	ug/l	< 1	< 1	< 1	< 1
Methylene Chloride	ug/l	< 1	< 1	< 1	< 1
Trans-1,2-dichloroethylene	ug/l	< 1	< 1	< 1	< 1
1,1-dichloroethane	ug/l	< 1	< 1	< 1	< 1
2,2-dichloropropane+1,2-dichloroethylene	ug/l	< 1	< 1	< 1	< 1
Chloroform	ug/l	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	ug/l	< 1	< 1	< 1	< 1
Carbon tetrachloride + 1,1-dichloropropane	ug/l	< 1	< 1	< 1	< 1
Benzene	ug/l	< 1	< 1	< 1	< 1
1,2-dichloroethane	ug/l	< 1	< 1	< 1	< 1
Trichloroethylene	ug/l	< 1	< 1	< 1	< 1
1,2-dichloropropane	ug/l	< 1	< 1	< 1	< 1
Dibromomethane	ug/l	< 1	< 1	< 1	< 1
Bromodichloromethane	ug/l	< 1	< 1	< 1	< 1
cis-1,3-dichloropropene	ug/l	< 1	< 1	< 1	< 1
Toluene	ug/l	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	ug/l	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	ug/l	< 1	< 1	< 1	< 1
Tetrachloroethylene	ug/l	< 1	< 1	< 1	< 1
1,3-dichloropropane	ug/l	< 1	< 1	< 1	< 1
Dibromochloromethane	ug/l	< 1	< 1	< 1	< 1
1,2-dibromoethane	ug/l	< 1	< 1	< 1	< 1
Chlorobenzene	ug/l	< 1	< 1	< 1	< 1
Ethylbenzene+1,1,1,2-tetrachloroethane	ug/l	< 1	< 1	< 1	< 1
m+p-Xylene	ug/l	< 1	< 1	< 1	< 1
o-Xylene	ug/l	< 1	< 1	< 1	< 1
Styrene	ug/l	< 1	< 1	< 1	< 1
Chloroform	ug/l	< 1	< 1	< 1	< 1
Isopropylbenzene	ug/l	< 1	< 1	< 1	< 1
Bromobenzene	ug/l	< 1	< 1	< 1	< 1
1,2,3-trichloropropane	ug/l	< 1	< 1	< 1	< 1
n-propylbenzene	ug/l	< 1	< 1	< 1	< 1
2-chlorotoluene	ug/l	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	ug/l	< 1	< 1	< 1	< 1
4-chlorotoluene	ug/l	< 1	< 1	< 1	< 1
Tert-butylbenzene	ug/l	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	ug/l	< 1	< 1	< 1	< 1
sec-butylbenzene	ug/l	< 1	< 1	< 1	< 1
1,3-dichlorobenzene+p-isopropyltoluene	ug/l	< 1	< 1	< 1	< 1
1,4-dichlorobenzene	ug/l	< 1	< 1	< 1	< 1
n-butylbenzene	ug/l	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	ug/l	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	ug/l	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	ug/l	< 1	< 1	< 1	< 1
Hexachlorobutadiene	ug/l	< 1	< 1	< 1	< 1
Naphthalene	ug/l	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	ug/l	< 1	< 1	< 1	< 1

Concentrations expressed in ug/L (ppb) unless otherwise stated

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The above results relate only to the sample tested

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 Our Ref.: WS-25940, WS-25940, COV/654606/2009, 09-33307
 Your Ref : Ballymurtagh Landfill
 Certificate No: L/09/2693

Semi-volatile Organic Compounds ug/L ++

	Sample ID	BH96/3	G1/04	G2/04	RC 6
DETERMINAND	Lab ID	85065	85066	85067	85068
Aniline	µg/l	<1.0	<1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	µg/l	<1.0	<1.0	<1.0	<1.0
Phenol	µg/l	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Benzyl Alcohol	µg/l	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0
3& 4-Methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0
2,4-dimethylphenol	µg/l	<1.0	<1.0	<1.0	<1.0
Bis-(dichloroethoxy)methane	µg/l	<1.0	<1.0	<1.0	<1.0
2,4-Dichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0
Naphthalene	µg/l	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0
2-Methylnaphthalene	µg/l	<1.0	<1.0	<1.0	<1.0
Hexachlorocyclopentadiene	µg/l	<1.0	<1.0	<1.0	<1.0
2,4,6 Trichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
2,4,5 Trichlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
2-Chloronaphthalene	µg/l	<1.0	<1.0	<1.0	<1.0
2-Nitroaniline	µg/l	<1.0	<1.0	<1.0	<1.0
1,4-dinitrobenzene	µg/l	<1.0	<1.0	<1.0	<1.0
Dimethyl phthalate	µg/l	<1.0	<1.0	<1.0	<1.0
1,3-dinitrobenzene	µg/l	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	µg/l	<1.0	<1.0	<1.0	<1.0
2,6-Dinitrotoluene	µg/l	<1.0	<1.0	<1.0	<1.0
1,2-Dinitrobenzene	µg/l	<1.0	<1.0	<1.0	<1.0
3-Nitroaniline	µg/l	<1.0	<1.0	<1.0	<1.0
Acenaphthene	µg/l	<1.0	<1.0	<1.0	<1.0
Dibenzofuran	µg/l	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	µg/l	<1.0	<1.0	<1.0	<1.0
4-Nitrophenol	µg/l	<1.0	<1.0	<1.0	<1.0
2,3,4,6-Tetrachlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
2,3,5,6-Tetrachlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Diethylphthalate	µg/l	<1.0	<1.0	<1.0	<1.0
Fluorene	µg/l	<1.0	<1.0	<1.0	<1.0
4-Chlorophenyl phenyl ether	µg/l	<1.0	<1.0	<1.0	<1.0
4-Nitroaniline	µg/l	<1.0	<1.0	<1.0	<1.0
Diphenylamine/4,6-Dinitro-2-methylphenol	µg/l	<1.0	<1.0	<1.0	<1.0
Azobenzene	µg/l	<1.0	<1.0	<1.0	<1.0
4-Bromophenyl phenyl ether	µg/l	<1.0	<1.0	<1.0	<1.0
Hexachlorobenzene	µg/l	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	µg/l	<1.0	<1.0	<1.0	<1.0
Phenanthrene	µg/l	<1.0	<1.0	<1.0	<1.0
Anthracene	µg/l	<1.0	<1.0	<1.0	<1.0
Carbazole	µg/l	<1.0	<1.0	<1.0	<1.0
Di-n-butylphthalate	µg/l	<1.0	<1.0	<1.0	<1.0
Benzyl butyl phthalate	µg/l	<1.0	<1.0	<1.0	<1.0
Bis(2-ethylhexyl)ester	µg/l	<1.0	<1.0	<1.0	<1.0
Fluoranthene	µg/l	<1.0	<1.0	<1.0	<1.0
Pyrene	µg/l	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	µg/l	<1.0	<1.0	<1.0	<1.0
Chrysene	µg/l	<1.0	<1.0	<1.0	<1.0
Di-n-octyl phthalate	µg/l	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	µg/l	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	µg/l	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	µg/l	<1.0	<1.0	<1.0	<1.0
Indeno(1,2,3-cd)pyrene	µg/l	<1.0	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	µg/l	<1.0	<1.0	<1.0	<1.0
Benzo(ghi)pyrene	µg/l	<1.0	<1.0	<1.0	<1.0

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 Our Ref.: WS-25951& 09-33346, COV/655294/2009
 Your Ref : Ballymurtagh Landfill
 Certificate No: L/09/2697A

ORGANOCHLORINE PESTICIDES (ng/l) ++

Determinand	Sample ID	G1/05	G2/05	Twin Shafts
	Lab ID	85091	85092	85093
1,2,3-Trichlorobenzene		<6	<6	<6
1,2,4,-Trichlorobenzene		<6	<6	<6
1,3,5-Trichlorobenzene		<6	<6	<6
Aldrin		<6	<6	<6
alpha Chlordane		<2	<2	<2
gamma Chlordane		<2	<2	<2
DDE (op)		<2	<2	<2
DDE (pp)		<2	<2	<2
DDT (op)		<2	<2	<2
DDT (pp)		<2	<2	<2
Dichlobenill		<2	<2	<2
Dieldrin		<6	<6	<6
Endosulphan A		<6	<6	<6
Endosulphan B		<6	<6	<6
Endrin		<6	<6	<6
HCH - alpha		2	<2	<2
HCH - beta		<2	<2	<2
HCH - gamma		<2	<2	<2
Heptachlor Epoxide		<2	<2	<2
Hexachlorobenzene		<2	<2	<2
Hexachlorobutadiene		<2	<2	<2
Isodrin		<6	<6	<6
Tecnazene		<10	<10	<10
Triallate		<10	<10	<10
Trifluralin		<10	<10	<10
TDE (op)		<2	<2	<2
TDE (pp)		<2	<2	<2

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 Certificate No: L/09/2697A

Volatile Organic Compounds ++

DETERMINAND	Sample ID	G1/05	G2/05	Twin Shafts
	Lab ID	85091	85092	85093
Total VOC's	ug/l	<1	<1	<1
1,1 Dichloroethylene	ug/l	<1	<1	<1
Methylene Chloride	ug/l	<1	<1	<1
Trans-1,2-dichloroethylene	ug/l	<1	<1	<1
1,1-dichloroethane	ug/l	<1	<1	<1
2,2-dichloropropane+1,2-dichloroethylene	ug/l	<1	<1	<1
Bromochloromethane	ug/l	<1	<1	<1
Chloroform	ug/l	<1	<1	<1
1,1,1-trichloroethane	ug/l	<1	<1	<1
Carbon tetrachloride + 1,1-dichloropropene	ug/l	<1	<1	<1
Benzene	ug/l	<1	<1	<1
1,2-dichloroethane	ug/l	<1	<1	<1
Trichloroethylene	ug/l	<1	<1	<1
1,2-dichloropropane	ug/l	<1	<1	<1
Dibromomethane	ug/l	<1	<1	<1
Bromodichloromethane	ug/l	<1	<1	<1
cis-1,3-dichloropropene	ug/l	<1	<1	<1
Toluene	ug/l	<1	<1	<1
trans-1,3-dichloropropene	ug/l	<1	<1	<1
1,1,2-trichloroethane	ug/l	<1	<1	<1
Tetrachloroethylene	ug/l	<1	<1	<1
1,3-dichloropropane	ug/l	<1	<1	<1
Dibromochloromethane	ug/l	<1	<1	<1
1,2-dibromoethane	ug/l	<1	<1	<1
Chlorobenzene	ug/l	<1	<1	<1
Ethylbenzene+1,1,1,2-tetrachloroethane	ug/l	<1	<1	<1
m+p-Xylene	ug/l	<1	<1	<1
o-Xylene	ug/l	<1	<1	<1
Styrene	ug/l	<1	<1	<1
Bromoform	ug/l	<1	<1	<1
Isopropylbenzene	ug/l	<1	<1	<1
Bromobenzene	ug/l	<1	<1	<1
1,2,3-trichloropropane	ug/l	<1	<1	<1
n-propylbenzene	ug/l	<1	<1	<1
2-chlorotoluene	ug/l	<1	<1	<1
1,3,5-trimethylbenzene	ug/l	<1	<1	<1
4-chlorotoluene	ug/l	<1	<1	<1
Tert-butylbenzene	ug/l	<1	<1	<1
1,2,4-trimethylbenzene	ug/l	<1	<1	<1
sec-butylbenzene	ug/l	<1	<1	<1
1,3-dichlorobenzene+p-isopropyltoluene	ug/l	<1	<1	<1
1,4-dichlorobenzene	ug/l	<1	<1	<1
n-butylbenzene	ug/l	<1	<1	<1
1,2-dichlorobenzene	ug/l	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/l	<1	<1	<1
1,2,4-trichlorobenzene	ug/l	<1	<1	<1
Hgexachlorobutadiene	ug/l	<1	<1	<1
Naphthalene	ug/l	<1	<1	<1
1,2,3-trichlorobenzene	ug/l	<1	<1	<1

Concentrations expressed in ug/l (ppb) unless otherwise stated

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Semi-volatile Organic Compounds ug/L. **

DETERMINAND	Sample ID	G1/05	G2/05	Twin Shafts
	Lab ID	85091	85092	85093
Aniline	µg/l	<1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	µg/l	<1.0	<1.0	<1.0
Phenol	µg/l	<1.0	<1.0	<1.0
2-Chlorophenol	µg/l	<1.0	<1.0	<1.0
Benzyl Alcohol	µg/l	<1.0	<1.0	<1.0
2-Methylphenol	µg/l	<1.0	<1.0	<1.0
3& 4-Methylphenol	µg/l	<1.0	<1.0	<1.0
2,4-dimethylphenol	µg/l	<1.0	<1.0	<1.0
Bis-(dichloroethoxy)methane	µg/l	<1.0	<1.0	<1.0
2,4-Dichlorophenol	µg/l	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	µg/l	<1.0	<1.0	<1.0
Naphthalene	µg/l	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	µg/l	<1.0	<1.0	<1.0
2-Methylnaphthalene	µg/l	<1.0	<1.0	<1.0
Hexachlorocyclopentadiene	µg/l	<1.0	<1.0	<1.0
2,4,6 Trichlorophenol	µg/l	<1.0	<1.0	<1.0
2,4,5 Trichlorophenol	µg/l	<1.0	<1.0	<1.0
2-Chloronaphthalene	µg/l	<1.0	<1.0	<1.0
2-Nitroaniline	µg/l	<1.0	<1.0	<1.0
1,4-dinitrobenzene	µg/l	<1.0	<1.0	<1.0
Dimethyl phthalate	µg/l	<1.0	<1.0	<1.0
1,3-dinitrobenzene	µg/l	<1.0	<1.0	<1.0
Acenaphthylene	µg/l	<1.0	<1.0	<1.0
2,6-Dinitrotoluene	µg/l	<1.0	<1.0	<1.0
1,2-Dinitrobenzene	µg/l	<1.0	<1.0	<1.0
3-Nitroaniline	µg/l	<1.0	<1.0	<1.0
Acenaphthene	µg/l	<1.0	<1.0	<1.0
Dibenzofuran	µg/l	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	µg/l	<1.0	<1.0	<1.0
4-Nitrophenol	µg/l	<1.0	<1.0	<1.0
2,3,4,6-Tetrachlorophenol	µg/l	<1.0	<1.0	<1.0
2,3,5,6-Tetrachlorophenol	µg/l	<1.0	<1.0	<1.0
Diethylphthalate	µg/l	<1.0	<1.0	<1.0
Fluorene	µg/l	<1.0	<1.0	<1.0
4-Chlorophenyl phenyl ether	µg/l	<1.0	<1.0	<1.0
4-Nitroaniline	µg/l	<1.0	<1.0	<1.0
Diphenylamine/4,6-Dinitro-2-	µg/l	<1.0	<1.0	<1.0
Azobenzene	µg/l	<1.0	<1.0	<1.0
4-Bromophenyl phenyl ether	µg/l	<1.0	<1.0	<1.0
Hexachlorobenzene	µg/l	<1.0	<1.0	<1.0
Pentachlorophenol	µg/l	<1.0	<1.0	<1.0
Phenanthrene	µg/l	<1.0	<1.0	<1.0
Anthracene	µg/l	<1.0	<1.0	<1.0
Carbazole	µg/l	<1.0	<1.0	<1.0
Di-n-butylphthalate	µg/l	<1.0	<1.0	<1.0
Benzyl butyl phthalate	µg/l	<1.0	<1.0	<1.0
Bis(2-ethylhexyl)ester	µg/l	<1.0	<1.0	<1.0
Fluoranthene	µg/l	<1.0	<1.0	<1.0
Pyrene	µg/l	<1.0	<1.0	<1.0
Benzo(a)anthracene	µg/l	<1.0	<1.0	<1.0
Chrysene	µg/l	<1.0	<1.0	<1.0
Di-n-octyl phthalate	µg/l	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	µg/l	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	µg/l	<1.0	<1.0	<1.0
Benzo(a)pyrene	µg/l	<1.0	<1.0	<1.0
Indeno(1,2,3-cd)pyrene	µg/l	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	µg/l	<1.0	<1.0	<1.0
Benzo(ghi)pyrene	µg/l	<1.0	<1.0	<1.0

Concentrations expressed in ug/l (ppb) unless otherwise stated

** = INAB Accredited Tests ++ = Subcontracted Tests n/a = Non-INAB Accredited Tests

The above results relate only to the sample tested

This report should not be regenerated except in full and with the consent of T.E. Laboratories Ltd.