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R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	632057 SPv1
Contact:	Reynolds, Shane	**Date Registered:**	27-Feb-2008
	c/o Taranaki Regional Council	**Date Reported:**	10-Mar-2008
	Private Bag 713	**Quote No:**	32103
	STRATFORD	**Order No:**	9699
		Client Reference:	R050
		Submitted By:	Williams, John (Mr)

Sample Type: Surface Water

Sample Name:	080648 25-Feb-2008 10:48 am	080649 25-Feb-2008 11:20 am	080650 25-Feb-2008 11:40 am	080651 25-Feb-2008 12:30 pm	080652 25-Feb-2008 12:45 pm
Lab Number:	632057.1	632057.2	632057.3	632057.4	632057.5
Individual Tests					
pH pH Units	8.0	7.3	6.7	7.9	8.1
Basic metals suite, totals, screen					
Total Aluminium g/m³	1.1	< 0.063	0.18	1.4	0.30
Total Antimony g/m³	< 0.0053	0.0067	< 0.0053	< 0.0053	< 0.0053
Total Arsenic g/m³	< 0.021	< 0.021	0.026	< 0.021	< 0.021
Total Boron g/m³	3.9	2.5	3.8	< 0.11	< 0.11
Total Cadmium g/m³	< 0.0011	0.0036	< 0.0011	< 0.0011	< 0.0011
Total Chromium g/m³	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011
Total Cobalt g/m³	< 0.0042	0.013	0.0074	< 0.0042	< 0.0042
Total Copper g/m³	< 0.011	0.025	0.013	< 0.011	< 0.011
Total Iron g/m³	1.6	< 0.42	1.2	6.3	3.1
Total Lead g/m³	< 0.0021	0.0023	0.0030	0.0034	0.0022
Total Lithium g/m³	0.17	0.12	0.12	0.0072	0.0089
Total Manganese g/m³	0.036	1.5	1.9	0.21	0.14
Total Molybdenum g/m³	0.011	0.012	0.0059	< 0.0042	< 0.0042
Total Nickel g/m³	0.011	0.017	0.015	< 0.011	< 0.011
Total Tin g/m³	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011
Total Vanadium g/m³	< 0.021	< 0.021	< 0.021	0.023	< 0.021
Total Zinc g/m³	< 0.021	0.51	0.19	0.037	< 0.021
Polycyclic Aromatic Hydrocarbons Trace in Water, By SPE					
Acenaphthene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Acenaphthylene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Anthracene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Benzo[a]anthracene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Benzo[a]pyrene (BAP) g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Benzo[b]fluoranthene + Benzo[j] fluoranthene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Benzo[g,h,i]perylene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Benzo[k]fluoranthene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Chrysene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Dibenzo[a,h]anthracene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Fluoranthene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Fluorene g/m³	< 0.000008	0.000020	< 0.000008	< 0.000008	< 0.000008
Indeno(1,2,3-c,d)pyrene g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008

Sample Type: Surface Water						
Sample Name:		080648 25-Feb-2008 10:48 am	080649 25-Feb-2008 11:20 am	080650 25-Feb-2008 11:40 am	080651 25-Feb-2008 12:30 pm	080652 25-Feb-2008 12:45 pm
Lab Number:		632057.1	632057.2	632057.3	632057.4	632057.5
Polycyclic Aromatic Hydrocarbons Trace in Water, By SPE						
Naphthalene	g/m³	< 0.000040	< 0.000040	< 0.000040	< 0.000040	< 0.000040
Phenanthrene	g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Pyrene	g/m³	< 0.000008	< 0.000008	< 0.000008	< 0.000008	< 0.000008
Total Petroleum Hydrocarbons in Water						
C7 - C9	g/m³	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m³	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
C15 - C36	g/m³	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
Total hydrocarbons (C7 - C36)	g/m³	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70

Sample Name:		080653 25-Feb-2008 12:50 pm
Lab Number:		632057.6
Individual Tests		
pH	pH Units	7.2
Basic metals suite, totals, screen		
Total Aluminium	g/m³	< 0.063
Total Antimony	g/m³	0.012
Total Arsenic	g/m³	0.085
Total Boron	g/m³	2.7
Total Cadmium	g/m³	0.0074
Total Chromium	g/m³	0.11
Total Cobalt	g/m³	0.010
Total Copper	g/m³	0.030
Total Iron	g/m³	0.55
Total Lead	g/m³	0.0078
Total Lithium	g/m³	0.11
Total Manganese	g/m³	0.84
Total Molybdenum	g/m³	0.0065
Total Nickel	g/m³	0.021
Total Tin	g/m³	< 0.011
Total Vanadium	g/m³	< 0.021
Total Zinc	g/m³	2.5
Polycyclic Aromatic Hydrocarbons Trace in Water, By SPE		
Acenaphthene	g/m³	0.000017
Acenaphthylene	g/m³	0.000067
Anthracene	g/m³	0.000017
Benzo[a]anthracene	g/m³	< 0.000008
Benzo[a]pyrene (BAP)	g/m³	< 0.000008
Benzo[b]fluoranthene + Benzo[j] fluoranthene	g/m³	< 0.000008
Benzo[g,h,i]perylene	g/m³	< 0.000008
Benzo[k]fluoranthene	g/m³	< 0.000008
Chrysene	g/m³	< 0.000008
Dibenzo[a,h]anthracene	g/m³	< 0.000008
Fluoranthene	g/m³	0.000055
Fluorene	g/m³	0.000038
Indeno(1,2,3-c,d)pyrene	g/m³	< 0.000008
Naphthalene	g/m³	< 0.000040
Phenanthrene	g/m³	< 0.000008
Pyrene	g/m³	0.000024

Sample Type: Surface Water						
Sample Name:		080653 25-Feb-2008 12:50 pm				
Lab Number:		632057.6				
Total Petroleum Hydrocarbons in Water						
C7 - C9	g/m³	0.12	-	-	-	-
C10 - C14	g/m³	< 0.20	-	-	-	-
C15 - C36	g/m³	< 0.40	-	-	-	-
Total hydrocarbons (C7 - C36)	g/m³	< 0.70	-	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Surface Water			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Basic metals suite, totals, screen*	Nitric acid digestion, ICP-MS, screen level	-	1-6
Polycyclic Aromatic Hydrocarbons Trace in Water, By SPE*	Solid phase extraction, SPE (if required), GC-MS SIM analysis	-	1-6
Total Petroleum Hydrocarbons in Water*	Solvent extraction, GC-FID analysis	-	1-6
Total Digestion	Boiling nitric acid digestion. APHA 3030 E 21st ed. 2005.	-	1-6
pH	pH meter. APHA 4500-H^+ B 21st ed. 2005.	0.1 pH Units	1-6

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental Division

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1 Clyde Street
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ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	632059	SPv1
Contact:	Reynolds, Shane	**Date Registered:**	27-Feb-2008	
	c/o Taranaki Regional Council	**Date Reported:**	04-Mar-2008	
	Private Bag 713	**Quote No:**	32103	
	STRATFORD	**Order No:**	9699	
		Client Reference:	R050	
		Submitted By:	Williams, John (Mr)	

Sample Type: Soil

Sample Name:	080655 25-Feb-2008 2:30 pm	080656 25-Feb-2008 2:40 pm	080657 25-Feb-2008 2:55 pm	080658 25-Feb-2008 3:05 pm	080659 25-Feb-2008 3:15 pm
Lab Number:	632059.2	632059.3	632059.4	632059.5	632059.6
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn					
Total Recoverable Arsenic mg/kg dry wt	41	80	61	140	92
Total Recoverable Cadmium mg/kg dry wt	1.5	3.7	4.9	4.7	4.4
Total Recoverable Chromium mg/kg dry wt	120	110	94	78	260
Total Recoverable Copper mg/kg dry wt	640	16000	1400	260	1500
Total Recoverable Lead mg/kg dry wt	1600	2000	7100	1200	2000
Total Recoverable Nickel mg/kg dry wt	100	62	73	14	1100
Total Recoverable Zinc mg/kg dry wt	10000	8900	10000	1500	7000

Sample Name:	080660 25-Feb-2008 3:30 pm				
Lab Number:	632059.7				
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn					
Total Recoverable Arsenic mg/kg dry wt	78	-	-	-	-
Total Recoverable Cadmium mg/kg dry wt	190	-	-	-	-
Total Recoverable Chromium mg/kg dry wt	420	-	-	-	-
Total Recoverable Copper mg/kg dry wt	4900	-	-	-	-
Total Recoverable Lead mg/kg dry wt	9900	-	-	-	-
Total Recoverable Nickel mg/kg dry wt	140	-	-	-	-
Total Recoverable Zinc mg/kg dry wt	7200	-	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil

Test	Method Description	Default Detection Limit	Samples
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction.	-	2-7
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	2-7
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2	-	2-7

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ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	632062	SPv1
Contact:	Reynolds, Shane	**Date Registered:**	27-Feb-2008	
	c/o Taranaki Regional Council	**Date Reported:**	26-Mar-2008	
	Private Bag 713	**Quote No:**	32103	
	STRATFORD	**Order No:**	9699	
		Client Reference:	R050	
		Submitted By:	Williams, John (Mr)	

Sample Type: Soil

		Sample Name:	080684 26-Feb-2008 1:00 pm	080685 26-Feb-2008 1:10 pm	080686 26-Feb-2008 1:10 pm		
		Lab Number:	632062.6	632062.7	632062.8		
Individual Tests							
pH	pH Units		-	7.8	8.2	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil							
Dry Matter	g/100g as rcvd		73	-	-	-	-
Acenaphthene	mg/kg dry wt		< 0.056	-	-	-	-
Acenaphthylene	mg/kg dry wt		< 0.056	-	-	-	-
Anthracene	mg/kg dry wt		0.13	-	-	-	-
Benzo[a]anthracene	mg/kg dry wt		0.088	-	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt		0.11	-	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt		0.14	-	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt		0.098	-	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt		0.16	-	-	-	-
Chrysene	mg/kg dry wt		0.26	-	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt		< 0.056	-	-	-	-
Fluoranthene	mg/kg dry wt		0.46	-	-	-	-
Fluorene	mg/kg dry wt		< 0.056	-	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt		0.086	-	-	-	-
Naphthalene	mg/kg dry wt		< 0.28	-	-	-	-
Phenanthrene	mg/kg dry wt		0.34	-	-	-	-
Pyrene	mg/kg dry wt		0.32	-	-	-	-
Total Petroleum Hydrocarbons in Soil							
Dry Matter	g/100g as rcvd		73	-	-	-	-
C7 - C9	mg/kg dry wt		< 17	-	-	-	-
C10 - C14	mg/kg dry wt		< 24	-	-	-	-
C15 - C36	mg/kg dry wt		590	-	-	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt		610	-	-	-	-

Sample Type: Sludge

		Sample Name:	080683 26-Feb-2008 11:45 am				
		Lab Number:	632062.5				
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn							
Total Recoverable Arsenic	mg/kg dry wt		20	-	-	-	-
Total Recoverable Cadmium	mg/kg dry wt		1.1	-	-	-	-
Total Recoverable Chromium	mg/kg dry wt		50	-	-	-	-

Sample Type: Sludge						
Sample Name:		080683 26-Feb-2008 11:45 am				
Lab Number:		632062.5				
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Copper	mg/kg dry wt	130	-	-	-	-
Total Recoverable Lead	mg/kg dry wt	390	-	-	-	-
Total Recoverable Nickel	mg/kg dry wt	30	-	-	-	-
Total Recoverable Zinc	mg/kg dry wt	2700	-	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dry Matter	g/100g as rcvd	27	-	-	-	-
Acenaphthene	mg/kg dry wt	< 0.16	-	-	-	-
Acenaphthylene	mg/kg dry wt	< 0.16	-	-	-	-
Anthracene	mg/kg dry wt	< 0.16	-	-	-	-
Benzo[a]anthracene	mg/kg dry wt	< 0.16	-	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.16	-	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.16	-	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.16	-	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	< 0.16	-	-	-	-
Chrysene	mg/kg dry wt	< 0.16	-	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.16	-	-	-	-
Fluoranthene	mg/kg dry wt	< 0.16	-	-	-	-
Fluorene	mg/kg dry wt	< 0.16	-	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.16	-	-	-	-
Naphthalene	mg/kg dry wt	< 0.78	-	-	-	-
Phenanthrene	mg/kg dry wt	< 0.16	-	-	-	-
Pyrene	mg/kg dry wt	< 0.16	-	-	-	-
Total Petroleum Hydrocarbons in Soil						
Dry Matter	g/100g as rcvd	27	-	-	-	-
C7 - C9	mg/kg dry wt	< 47	-	-	-	-
C10 - C14	mg/kg dry wt	< 66	-	-	-	-
C15 - C36	mg/kg dry wt	740	-	-	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	780	-	-	-	-

Sample Type: Clean waters						
Sample Name:		080679 26-Feb-2008 9:00 am	080680 26-Feb-2008 9:25 am	080681 26-Feb-2008 9:35 am	080682 26-Feb-2008 10:40 am	
Lab Number:		632062.1	632062.2	632062.3	632062.4	
Individual Tests						
pH	pH Units	7.9	8.1	7.3	7.1	-
Dissolved Arsenic	g/m³	< 0.020	-	< 0.060	< 0.020	-
Dissolved Cadmium	g/m³	-	-	0.0039	0.0038	-
Dissolved Chromium	g/m³	< 0.0020	-	0.042	0.013	-
Dissolved Copper	g/m³	< 0.0020	-	0.013	0.014	-
Dissolved Lead	g/m³	-	-	0.0075	0.0033	-
Dissolved Nickel	g/m³	< 0.010	-	< 0.010	< 0.010	-
Dissolved Zinc	g/m³	< 0.0040	-	0.81	1.9	-
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn						
Dissolved Arsenic	g/m³	-	< 0.0010	-	-	-
Dissolved Cadmium	g/m³	< 0.00050	< 0.000050	-	-	-
Dissolved Chromium	g/m³	-	< 0.00050	-	-	-
Dissolved Copper	g/m³	-	< 0.00050	-	-	-
Dissolved Lead	g/m³	< 0.0010	< 0.00010	-	-	-
Dissolved Nickel	g/m³	-	< 0.00050	-	-	-

Sample Type: Clean waters						
Sample Name:		080679 26-Feb-2008 9:00 am	080680 26-Feb-2008 9:25 am	080681 26-Feb-2008 9:35 am	080682 26-Feb-2008 10:40 am	
Lab Number:		632062.1	632062.2	632062.3	632062.4	
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn						
Dissolved Zinc	g/m³	-	0.033	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Water, By SPE						
Acenaphthene	g/m³	< 0.00010	< 0.00010	< 0.00010	0.00011	-
Acenaphthylene	g/m³	< 0.00010	< 0.00010	< 0.00010	0.00045	-
Anthracene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Benzo[a]anthracene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Benzo[a]pyrene (BAP)	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Benzo[g,h,i]perylene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Benzo[k]fluoranthene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Chrysene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Dibenzo[a,h]anthracene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Fluoranthene	g/m³	< 0.00010	< 0.00010	< 0.00010	0.00011	-
Fluorene	g/m³	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-
Indeno(1,2,3-c,d)pyrene	g/m³	< 0.00010	< 0.00010	< 0.00010	< 0.00010	-
Naphthalene	g/m³	< 0.00050	< 0.00050	< 0.00050	< 0.00050	-
Phenanthrene	g/m³	< 0.00040	< 0.00040	< 0.00040	< 0.00040	-
Pyrene	g/m³	< 0.00020	< 0.00020	< 0.00020	< 0.00020	-
Total Petroleum Hydrocarbons in Water						
C7 - C9	g/m³	< 0.10	< 0.10	< 0.10	< 0.10	-
C10 - C14	g/m³	< 0.20	< 0.20	< 0.20	< 0.20	-
C15 - C36	g/m³	< 0.40	< 0.40	< 0.40	< 0.40	-
Total hydrocarbons (C7 - C36)	g/m³	< 0.70	< 0.70	< 0.70	< 0.70	-

Appendix No.1 - Total Petroleum Hydrocarbon Chromatograms

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
pH	1:2 (v/v) soil : water slurry followed by potentiometric determination of pH.	0.1 pH Units	7-8

Sample Type: Sludge			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Environmental Solids Sample Preparation*	Air dried at 35°C and sieved, <2mm fraction.	-	5, 7-8
TPH Oil Industry Profile + PAHscreen*	Sonication extraction, SPE cleanup, GC-FID & GC-MS analysis	-	5-6
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn*	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	5
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis	-	5-6
Total Petroleum Hydrocarbons in Soil*	Sonication extraction, Silica cleanup, GC-FID analysis	-	5-6
Dry Matter (Org)	Dried at 103°C (removes 3-5% more water than air dry), gravimetry.	0.10 g/100g as rcvd	5-6
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2	-	5

Sample Type: Clean waters			
Test	**Method Description**	**Default Detection Limit**	**Samples**

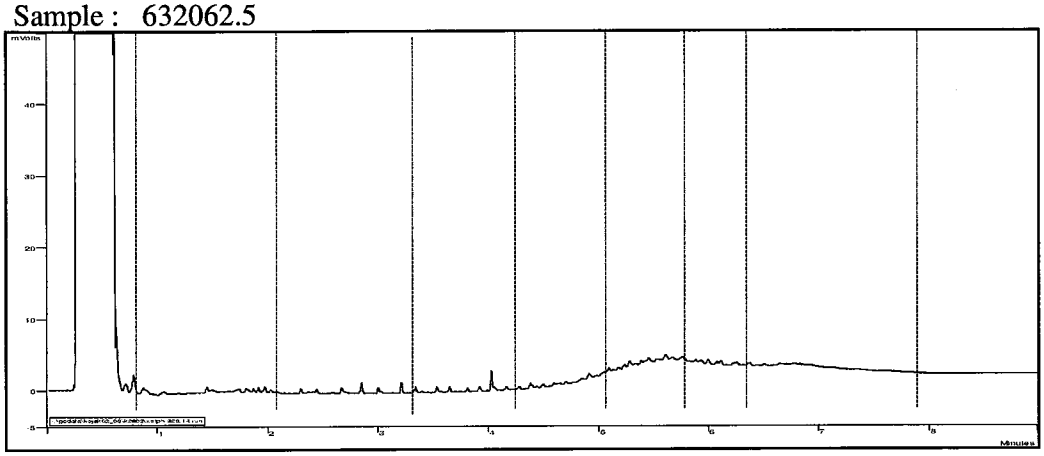
Sample Type: Clean waters			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn*	0.45µm filtration, ICP-MS, trace level	-	2
Polycyclic Aromatic Hydrocarbons Screening in Water, By SPE*	Solid phase extraction, SPE (if required), GC-MS SIM analysis	-	1-4
Total Petroleum Hydrocarbons in Water*	Solvent extraction, GC-FID analysis	-	1-4
pH	pH meter. APHA 4500-H^+ B 21st ed. 2005.	0.1 pH Units	1-4
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B 21st ed. 2005.	-	1-4
Dissolved Arsenic	Filtered sample, ICP-MS with dynamic reaction cell, trace level. APHA 3125 B 21st ed. 2005.	0.0010 g/m^3	1, 3-4
Dissolved Cadmium	Filtered sample, ICP-MS, trace level. APHA 3125 B 21st ed. 2005.	0.000050 g/m^3	3-4
Dissolved Chromium	Filtered sample, ICP-MS with dynamic reaction cell, trace level. APHA 3125 B 21st ed. 2005.	0.00010 g/m^3	1, 3-4
Dissolved copper	Filtered sample, ICP-MS with dynamic reaction cell, trace level. APHA 3125 B 21st ed. 2005.	0.00010 g/m^3	1, 3-4
Dissolved Lead	Filtered sample, ICP-MS, trace level. APHA 3125 B 21st ed. 2005.	0.00010 g/m^3	3-4
Dissolved Nickel	Filtered sample, ICP-MS with dynamic reaction cell, trace level. APHA 3125 B 21st ed. 2005.	0.00050 g/m^3	1, 3-4
Dissolved Zinc	Filtered sample, ICP-MS with dynamic reaction cell, trace level. APHA 3125 B 21st ed. 2005.	0.00020 g/m^3	1, 3-4

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

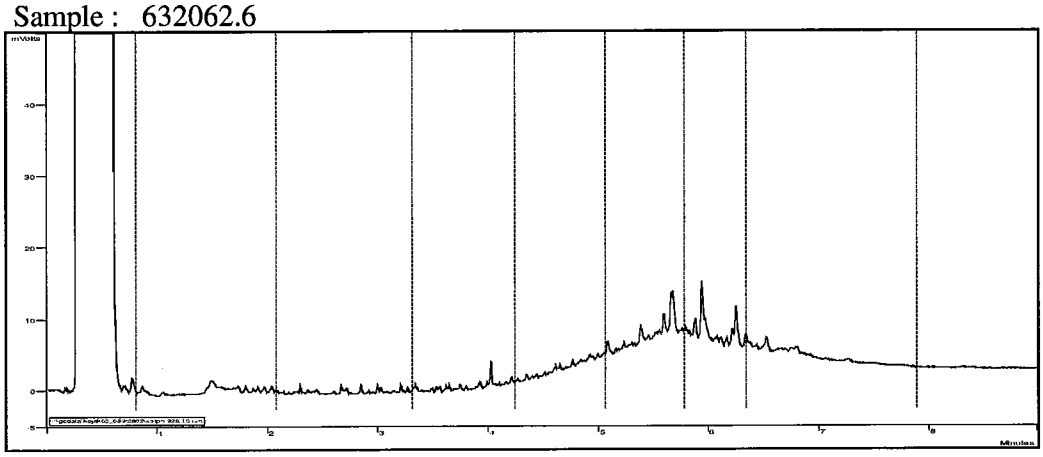
Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Graham Corban MSc Tech (Hons)
Client Services Manager - Environmental Division

Sample : 632062.5



Sample : 632062.6



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R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	634664 SPv1
Contact:	Reynolds, Shane	**Date Registered:**	15-Mar-2008
	c/o Taranaki Regional Council	**Date Reported:**	20-Mar-2008
	Private Bag 713	**Quote No:**	32103
	STRATFORD	**Order No:**	
		Client Reference:	3337/0
		Submitted By:	Williams, John (Mr)

Sample Type: Soil

Sample Name:		080821 11-Mar-2008	080822 11-Mar-2008	080823 11-Mar-2008	080824 11-Mar-2008	080825 11-Mar-2008
Lab Number:		634664.1	634664.2	634664.3	634664.4	634664.5
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	-	21	3.9	6.9	7.5
Total Recoverable Cadmium	mg/kg dry wt	-	2.5	< 0.10	0.11	0.91
Total Recoverable Chromium	mg/kg dry wt	-	29	30	6.6	9.8
Total Recoverable Copper	mg/kg dry wt	-	220	11	18	81
Total Recoverable Lead	mg/kg dry wt	-	870	18	12	61
Total Recoverable Nickel	mg/kg dry wt	-	24	15	6.3	40
Total Recoverable Zinc	mg/kg dry wt	-	2200	76	28	1400
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dry Matter	g/100g as rcvd	77	74	94	77	69
Acenaphthene	mg/kg dry wt	< 0.031	0.048	< 0.024	< 0.029	< 0.035
Acenaphthylene	mg/kg dry wt	< 0.031	0.17	< 0.024	< 0.029	0.060
Anthracene	mg/kg dry wt	< 0.031	0.53	0.048	< 0.029	0.22
Benzo[a]anthracene	mg/kg dry wt	< 0.031	1.4	0.049	< 0.029	0.15
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.031	1.0	< 0.024	< 0.029	< 0.035
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.031	1.8	0.044	< 0.029	0.090
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.031	0.86	< 0.024	< 0.029	< 0.035
Benzo[k]fluoranthene	mg/kg dry wt	< 0.031	0.62	0.032	< 0.029	0.069
Chrysene	mg/kg dry wt	< 0.031	2.0	0.076	< 0.029	0.19
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.031	< 0.033	< 0.024	< 0.029	< 0.035
Fluoranthene	mg/kg dry wt	0.045	2.4	0.16	< 0.029	0.43
Fluorene	mg/kg dry wt	< 0.031	< 0.033	< 0.024	< 0.029	< 0.035
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.031	0.74	< 0.024	< 0.029	< 0.035
Naphthalene	mg/kg dry wt	< 0.16	1.3	< 0.12	< 0.15	0.18
Phenanthrene	mg/kg dry wt	< 0.031	1.5	0.061	< 0.029	0.64
Pyrene	mg/kg dry wt	0.037	3.1	0.12	< 0.029	0.39

Sample Name:		080826 11-Mar-2008	080827 11-Mar-2008	080828 11-Mar-2008	080829 11-Mar-2008	080830 11-Mar-2008
Lab Number:		634664.6	634664.7	634664.8	634664.9	634664.10
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	5.6	-	11	16	8.6
Total Recoverable Cadmium	mg/kg dry wt	0.13	-	1.2	0.28	0.80
Total Recoverable Chromium	mg/kg dry wt	5.7	-	38	19	23
Total Recoverable Copper	mg/kg dry wt	28	-	190	57	130
Total Recoverable Lead	mg/kg dry wt	91	-	470	250	470

Sample Type: Soil						
	Sample Name:	080826 11-Mar-2008	080827 11-Mar-2008	080828 11-Mar-2008	080829 11-Mar-2008	080830 11-Mar-2008
	Lab Number:	634664.6	634664.7	634664.8	634664.9	634664.10
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Nickel	mg/kg dry wt	37	-	27	12	20
Total Recoverable Zinc	mg/kg dry wt	190	-	960	140	1100
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dry Matter	g/100g as rcvd	65	58	77	74	77
Acenaphthene	mg/kg dry wt	< 0.037	0.45	< 0.029	< 0.029	< 0.029
Acenaphthylene	mg/kg dry wt	0.061	< 0.041	0.062	< 0.029	< 0.029
Anthracene	mg/kg dry wt	0.16	0.21	0.071	< 0.029	< 0.029
Benzo[a]anthracene	mg/kg dry wt	0.18	0.72	0.45	< 0.029	< 0.029
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.037	0.66	0.49	< 0.029	< 0.029
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	0.21	0.62	0.48	< 0.029	< 0.029
Benzo[g,h,i]perylene	mg/kg dry wt	0.14	0.48	0.41	< 0.029	< 0.029
Benzo[k]fluoranthene	mg/kg dry wt	0.15	0.38	0.27	< 0.029	< 0.029
Chrysene	mg/kg dry wt	0.32	0.89	0.45	< 0.029	< 0.029
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.037	< 0.041	< 0.029	< 0.029	< 0.029
Fluoranthene	mg/kg dry wt	0.51	2.4	1.4	< 0.029	< 0.029
Fluorene	mg/kg dry wt	< 0.037	0.28	< 0.029	< 0.029	< 0.029
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	0.11	0.42	0.29	< 0.029	< 0.029
Naphthalene	mg/kg dry wt	0.36	0.86	< 0.15	< 0.15	< 0.15
Phenanthrene	mg/kg dry wt	0.84	1.6	0.20	< 0.029	< 0.029
Pyrene	mg/kg dry wt	0.34	1.8	1.0	< 0.029	< 0.029
Total Petroleum Hydrocarbons in Soil						
Dry Matter	g/100g as rcvd	-	58	-	-	-
C7 - C9	mg/kg dry wt	-	< 13	-	-	-
C10 - C14	mg/kg dry wt	-	< 20	-	-	-
C15 - C36	mg/kg dry wt	-	66	-	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	73	-	-	-

	Sample Name:	080831 11-Mar-2008	080832 11-Mar-2008	080833 11-Mar-2008		
	Lab Number:	634664.11	634664.12	634664.13		
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	14	16	48	-	-
Total Recoverable Cadmium	mg/kg dry wt	1.6	0.80	0.39	-	-
Total Recoverable Chromium	mg/kg dry wt	4.3	22	26	-	-
Total Recoverable Copper	mg/kg dry wt	10	160	69	-	-
Total Recoverable Lead	mg/kg dry wt	6.5	290	130	-	-
Total Recoverable Nickel	mg/kg dry wt	15	16	21	-	-
Total Recoverable Zinc	mg/kg dry wt	39	970	310	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dry Matter	g/100g as rcvd	62	82	83	-	-
Acenaphthene	mg/kg dry wt	< 0.039	< 0.026	< 0.031	-	-
Acenaphthylene	mg/kg dry wt	< 0.039	< 0.026	< 0.031	-	-
Anthracene	mg/kg dry wt	< 0.039	0.099	0.17	-	-
Benzo[a]anthracene	mg/kg dry wt	< 0.039	< 0.026	0.12	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.039	< 0.026	0.12	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.039	< 0.026	0.088	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.039	< 0.026	0.13	-	-
Benzo[k]fluoranthene	mg/kg dry wt	< 0.039	< 0.026	0.064	-	-
Chrysene	mg/kg dry wt	< 0.039	< 0.026	0.11	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.039	< 0.026	< 0.031	-	-

Sample Type: Soil						
	Sample Name:	080831 11-Mar-2008	080832 11-Mar-2008	080833 11-Mar-2008		
	Lab Number:	634664.11	634664.12	634664.13		
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Fluoranthene	mg/kg dry wt	< 0.039	0.13	0.16	-	-
Fluorene	mg/kg dry wt	< 0.039	< 0.026	< 0.031	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.039	< 0.026	0.11	-	-
Naphthalene	mg/kg dry wt	< 0.20	0.15	0.26	-	-
Phenanthrene	mg/kg dry wt	< 0.039	0.15	0.37	-	-
Pyrene	mg/kg dry wt	< 0.039	0.10	0.19	-	-

Analyst's Comments

Appendix No.1 - Total Petroleum Hydrocarbon Chromatograms

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

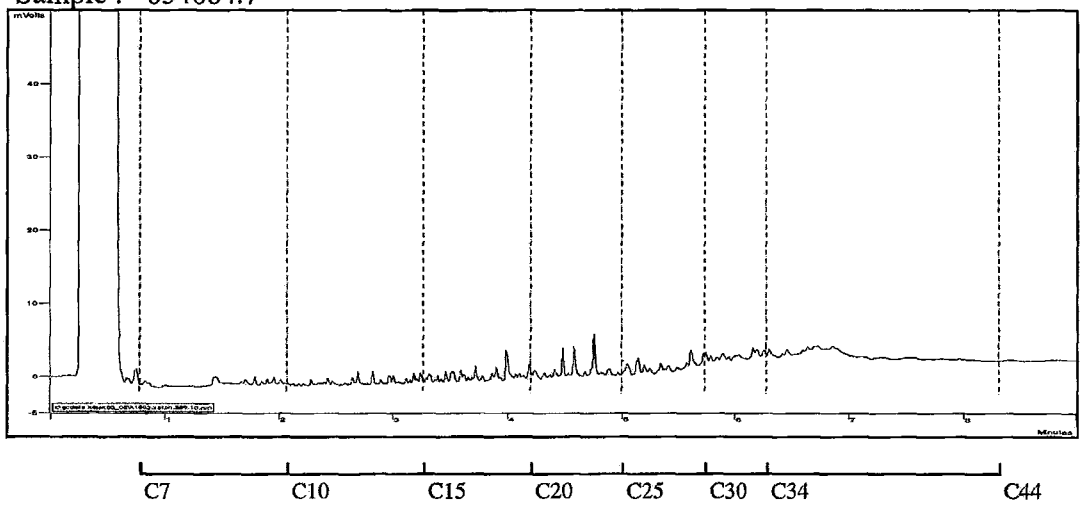
Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Environmental Solids Sample Preparation*	Air dried at 35°C and sieved, <2mm fraction.	-	2-6, 8-13
TPH Oil Industry Profile + PAHscreen*	Sonication extraction, SPE cleanup, GC-FID & GC-MS analysis	-	7
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn*	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	2-6, 8-13
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis	-	1-13
Total Petroleum Hydrocarbons in Soil*	Sonication extraction, Silica cleanup, GC-FID analysis	-	7
Dry Matter (Org)	Dried at 103°C (removes 3-5% more water than air dry), gravimetry.	0.10 g/100g as rcvd	1-13
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2	-	2-6, 8-13

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Graham Corban MSc Tech (Hons)
Client Services Manager - Environmental Division

Sample : 634664.7



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R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No**	634740	SPv1
Contact:	Reynolds, Shane	**Date Registered:**	15-Mar-2008	
	c/o Taranaki Regional Council	**Date Reported:**	25-Mar-2008	
	Private Bag 713	**Quote No:**		
	STRATFORD	**Order No:**	10000	
		Client Reference:	080834	
		Submitted By:	Reynolds, Shane	

27 MAR 2008

Document No of Reply:

Sample Type: Soil

Sample Name:	080834 11-Mar-2008 3:20 pm	080835 11-Mar-2008 3:25 pm	080842 13-Mar-2008 9:55 am	080843 13-Mar-2008 10:00 am	080844 13-Mar-2008 10:05 am
Lab Number:	634740.1	634740.2	634740.3	634740.4	634740.5
Polycyclic Aromatic Hydrocarbons Screening in Soil					
Dry Matter g/100g as rcvd	100	100	100	100	100
Acenaphthene mg/kg dry wt	< 0.025	< 0.024	< 0.024	0.40	< 0.025
Acenaphthylene mg/kg dry wt	< 0.025	< 0.024	< 0.024	< 0.025	< 0.025
Anthracene mg/kg dry wt	< 0.025	< 0.024	< 0.024	0.12	< 0.025
Benzo[a]anthracene mg/kg dry wt	< 0.025	0.086	< 0.024	0.027	< 0.025
Benzo[a]pyrene (BAP) mg/kg dry wt	< 0.025	0.058	< 0.024	0.026	< 0.025
Benzo[b]fluoranthene + Benzo[j] fluoranthene mg/kg dry wt	< 0.025	0.099	< 0.024	0.050	< 0.025
Benzo[g,h,i]perylene mg/kg dry wt	< 0.025	0.21	0.12	0.045	0.074
Benzo[k]fluoranthene mg/kg dry wt	< 0.025	0.069	< 0.024	0.043	< 0.025
Chrysene mg/kg dry wt	< 0.025	0.072	< 0.024	0.035	< 0.025
Dibenzo[a,h]anthracene mg/kg dry wt	< 0.025	< 0.024	< 0.024	< 0.025	< 0.025
Fluoranthene mg/kg dry wt	0.047	0.16	< 0.024	0.17	< 0.025
Fluorene mg/kg dry wt	< 0.025	< 0.024	< 0.024	0.16	< 0.025
Indeno(1,2,3-c,d)pyrene mg/kg dry wt	< 0.025	0.058	< 0.024	0.024	< 0.025
Naphthalene mg/kg dry wt	< 0.13	< 0.12	< 0.12	< 0.13	< 0.13
Phenanthrene mg/kg dry wt	< 0.025	0.037	< 0.024	0.15	< 0.025
Pyrene mg/kg dry wt	0.048	0.14	< 0.024	0.15	< 0.025

Sample Name:	080845 13-Mar-2008 10:10 am	080846 13-Mar-2008 10:30 am	080847 13-Mar-2008 10:40 am	080848 13-Mar-2008 10:45 am	
Lab Number:	634740.6	634740.7	634740.8	634740.9	
Polycyclic Aromatic Hydrocarbons Screening in Soil					
Dry Matter g/100g as rcvd	100	100	100	100	-
Acenaphthene mg/kg dry wt	< 0.025	< 0.024	< 0.024	< 0.025	-
Acenaphthylene mg/kg dry wt	< 0.025	< 0.024	< 0.024	< 0.025	-
Anthracene mg/kg dry wt	< 0.025	< 0.024	0.033	< 0.025	-
Benzo[a]anthracene mg/kg dry wt	< 0.025	< 0.024	0.047	< 0.025	-
Benzo[a]pyrene (BAP) mg/kg dry wt	< 0.025	< 0.024	0.039	< 0.025	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene mg/kg dry wt	< 0.025	< 0.024	0.050	< 0.025	-
Benzo[g,h,i]perylene mg/kg dry wt	0.084	0.059	0.13	0.050	-
Benzo[k]fluoranthene mg/kg dry wt	< 0.025	< 0.024	0.028	< 0.025	-
Chrysene mg/kg dry wt	< 0.025	< 0.024	0.056	< 0.025	-
Dibenzo[a,h]anthracene mg/kg dry wt	< 0.025	< 0.024	0.034	< 0.025	-

Sample Type: Soil						
	Sample Name:	080845 13-Mar-2008 10:10 am	080846 13-Mar-2008 10:30 am	080847 13-Mar-2008 10:40 am	080848 13-Mar-2008 10:45 am	
	Lab Number:	634740.6	634740.7	634740.8	634740.9	
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Fluoranthene	mg/kg dry wt	< 0.025	< 0.024	0.083	< 0.025	-
Fluorene	mg/kg dry wt	< 0.025	< 0.024	< 0.024	< 0.025	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.025	< 0.024	0.035	< 0.025	-
Naphthalene	mg/kg dry wt	< 0.13	< 0.12	< 0.12	< 0.13	-
Phenanthrene	mg/kg dry wt	< 0.025	< 0.024	0.057	< 0.025	-
Pyrene	mg/kg dry wt	< 0.025	< 0.024	0.067	< 0.025	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis	-	1-9
Dry Matter (Org)	Dried at 103°C (removes 3-5% more water than air dry), gravimetry.	0.10 g/100g as rcvd	1-9

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Karen Nichol BSc
Client Services Manager - Environmental Division

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R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	634741 SPv1
Contact:	Reynolds, Shane	**Date Registered:**	15-Mar-2008
	c/o Taranaki Regional Council	**Date Reported:**	25-Mar-2008
	Private Bag 713	**Quote No:**	32103
	STRATFORD	**Order No:**	10000
		Client Reference:	3337/0
		Submitted By:	Taranaki Regional Council

Sample Type: Soil

Sample Name:		080949 13-Mar-2008 1:10 pm	080950 13-Mar-2008 1:25 pm	080951 13-Mar-2008 1:30 pm	080952 13-Mar-2008 2:00 pm	080953 13-Mar-2008 2:10 pm
Lab Number:		634741.1	634741.2	634741.3	634741.4	634741.5
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	13	11	7.0	9.1	13
Total Recoverable Cadmium	mg/kg dry wt	0.47	0.32	0.42	0.27	0.38
Total Recoverable Chromium	mg/kg dry wt	20	16	15	15	23
Total Recoverable Copper	mg/kg dry wt	160	37	110	53	67
Total Recoverable Lead	mg/kg dry wt	170	78	89	31	100
Total Recoverable Nickel	mg/kg dry wt	18	12	16	20	24
Total Recoverable Zinc	mg/kg dry wt	470	230	310	120	260
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dry Matter	g/100g as rcvd	92	72	87	80	85
Acenaphthene	mg/kg dry wt	< 0.025	< 0.035	< 0.027	< 0.029	< 0.026
Acenaphthylene	mg/kg dry wt	0.026	< 0.035	< 0.027	< 0.029	0.11
Anthracene	mg/kg dry wt	0.073	0.067	0.095	< 0.029	< 0.026
Benzo[a]anthracene	mg/kg dry wt	0.11	0.15	0.094	< 0.029	0.11
Benzo[a]pyrene (BAP)	mg/kg dry wt	0.14	0.21	0.12	< 0.029	0.22
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	0.23	0.40	0.24	< 0.029	0.42
Benzo[g,h,i]perylene	mg/kg dry wt	0.15	0.21	0.10	< 0.029	0.30
Benzo[k]fluoranthene	mg/kg dry wt	0.19	0.19	0.17	< 0.029	0.25
Chrysene	mg/kg dry wt	0.26	0.27	0.21	< 0.029	0.20
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.025	< 0.035	< 0.027	< 0.029	< 0.026
Fluoranthene	mg/kg dry wt	0.29	0.31	0.28	< 0.029	0.35
Fluorene	mg/kg dry wt	< 0.025	< 0.035	< 0.027	< 0.029	< 0.026
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	0.093	0.15	0.050	< 0.029	0.17
Naphthalene	mg/kg dry wt	< 0.13	< 0.18	< 0.14	< 0.15	< 0.13
Phenanthrene	mg/kg dry wt	0.12	0.076	0.11	< 0.029	< 0.026
Pyrene	mg/kg dry wt	0.23	0.28	0.19	< 0.029	0.37

Sample Name:		080954 13-Mar-2008 2:20 pm	080955 13-Mar-2008 2:30 pm			
Lab Number:		634741.6	634741.7			
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	8.2	7.6	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	0.21	0.24	-	-	-
Total Recoverable Chromium	mg/kg dry wt	14	20	-	-	-
Total Recoverable Copper	mg/kg dry wt	60	64	-	-	-

Sample Type: Soil						
Sample Name:		080954 13-Mar-2008 2:20 pm	080955 13-Mar-2008 2:30 pm			
Lab Number:		634741.6	634741.7			
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Lead	mg/kg dry wt	73	130	-	-	-
Total Recoverable Nickel	mg/kg dry wt	12	14	-	-	-
Total Recoverable Zinc	mg/kg dry wt	130	230	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dry Matter	g/100g as rcvd	89	92	-	-	-
Acenaphthene	mg/kg dry wt	< 0.025	< 0.025	-	-	-
Acenaphthylene	mg/kg dry wt	< 0.025	< 0.025	-	-	-
Anthracene	mg/kg dry wt	< 0.025	< 0.025	-	-	-
Benzo[a]anthracene	mg/kg dry wt	0.080	< 0.025	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	0.093	< 0.025	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	0.096	< 0.025	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	0.14	0.067	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	0.072	< 0.025	-	-	-
Chrysene	mg/kg dry wt	0.11	< 0.025	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.025	< 0.025	-	-	-
Fluoranthene	mg/kg dry wt	0.25	0.090	-	-	-
Fluorene	mg/kg dry wt	< 0.025	< 0.025	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	0.048	0.026	-	-	-
Naphthalene	mg/kg dry wt	< 0.13	< 0.13	-	-	-
Phenanthrene	mg/kg dry wt	< 0.025	< 0.025	-	-	-
Pyrene	mg/kg dry wt	0.20	0.072	-	-	-

Sample Type: Clean waters						
Sample Name:		080861 12-Mar-2008 2:20 pm	080862 12-Mar-2008 3:20 pm			
Lab Number:		634741.8	634741.9			
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn						
Dissolved Arsenic	g/m³	< 0.0010	0.0067	-	-	-
Dissolved Cadmium	g/m³	< 0.000050	< 0.000050	-	-	-
Dissolved Chromium	g/m³	< 0.00050	< 0.00050	-	-	-
Dissolved Copper	g/m³	< 0.00050	< 0.00050	-	-	-
Dissolved Lead	g/m³	< 0.00010	< 0.00010	-	-	-
Dissolved Nickel	g/m³	< 0.00050	< 0.00050	-	-	-
Dissolved Zinc	g/m³	0.0073	< 0.0010	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Environmental Solids Sample Preparation*	Air dried at 35°C and sieved, <2mm fraction.	-	1-7
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn*	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	1-7
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis	-	1-7
Dry Matter (Org)	Dried at 103°C (removes 3-5% more water than air dry), gravimetry.	0.10 g/100g as rcvd	1-7
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2	-	1-7

Sample Type: Clean waters			
Test	**Method Description**	**Default Detection Limit**	**Samples**

Sample Type: Clean waters			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn*	0.45µm filtration, ICP-MS, trace level	-	8-9
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B 21st ed. 2005.	-	8-9

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Karen Nichol BSc
Client Services Manager - Environmental Division

Hill Laboratories
A WORLD LEADER IN ANALYTICAL SERVICES

RJ Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	636832	SPv1
Contact:	Reynolds, Shane	**Date Registered:**	02-Apr-2008	
	c/o Taranaki Regional Council	**Date Reported:**	07-Apr-2008	
	Private Bag 713	**Quote No:**	32103	
	STRATFORD	**Order No:**	10167	
		Client Reference:	3337/0	
		Submitted By:	Williams, John (Mr)	

Sample Type: Soil

		Sample Name:	081106 31-Mar-2008 10:00 am				
		Lab Number:	636832.1				
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn							
Total Recoverable Arsenic	mg/kg dry wt		3.3	-	-	-	-
Total Recoverable Cadmium	mg/kg dry wt		0.16	-	-	-	-
Total Recoverable Chromium	mg/kg dry wt		24	-	-	-	-
Total Recoverable Copper	mg/kg dry wt		25	-	-	-	-
Total Recoverable Lead	mg/kg dry wt		30	-	-	-	-
Total Recoverable Nickel	mg/kg dry wt		17	-	-	-	-
Total Recoverable Zinc	mg/kg dry wt		130	-	-	-	-
BTEX in Soil by Headspace GC-MS							
Dry Matter	g/100g as rcvd		78	-	-	-	-
Benzene	mg/kg dry wt		< 0.053	-	-	-	-
Toluene	mg/kg dry wt		< 0.053	-	-	-	-
Ethylbenzene	mg/kg dry wt		< 0.053	-	-	-	-
m&p-Xylene	mg/kg dry wt		< 0.11	-	-	-	-
o-Xylene	mg/kg dry wt		< 0.053	-	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil							
Dry Matter	g/100g as rcvd		78	-	-	-	-
Acenaphthene	mg/kg dry wt		< 0.028	-	-	-	-
Acenaphthylene	mg/kg dry wt		< 0.028	-	-	-	-
Anthracene	mg/kg dry wt		< 0.028	-	-	-	-
Benzo[a]anthracene	mg/kg dry wt		< 0.028	-	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt		< 0.028	-	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt		< 0.028	-	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt		< 0.028	-	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt		< 0.028	-	-	-	-
Chrysene	mg/kg dry wt		< 0.028	-	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt		< 0.028	-	-	-	-
Fluoranthene	mg/kg dry wt		< 0.028	-	-	-	-
Fluorene	mg/kg dry wt		< 0.028	-	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt		< 0.028	-	-	-	-
Naphthalene	mg/kg dry wt		< 0.14	-	-	-	-
Phenanthrene	mg/kg dry wt		< 0.028	-	-	-	-
Pyrene	mg/kg dry wt		0.030	-	-	-	-
Total Petroleum Hydrocarbons in Soil							

Sample Type: Soil						
Sample Name:		081106 31-Mar-2008 10:00 am				
Lab Number:		636832.1				
Total Petroleum Hydrocarbons in Soil						
Dry Matter	g/100g as rcvd	78	-	-	-	-
C7 - C9	mg/kg dry wt	< 8.2	-	-	-	-
C10 - C14	mg/kg dry wt	< 20	-	-	-	-
C15 - C36	mg/kg dry wt	< 30	-	-	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	< 60	-	-	-	-

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Environmental Solids Sample Preparation*	Air dried at 35°C and sieved, <2mm fraction.	-	1
TPH Oil Industry Profile + PAHscreen*	Sonication extraction, SPE cleanup, GC-FID & GC-MS analysis	-	1
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn*	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	1
BTEX in Soil by Headspace GC-MS*	Solvent extraction, Headspace GC-MS analysis	-	1
Polycyclic Aromatic Hydrocarbons Screening in Soil*	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis	-	1
Total Petroleum Hydrocarbons in Soil*	Sonication extraction, Silica cleanup, GC-FID analysis	-	1
Dry Matter (Org)	Dried at 103°C (removes 3-5% more water than air dry), gravimetry.	0.10 g/100g as rcvd	1
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2	-	1

These samples were collected by yourselves (or your agent) and analysed as received at the laboratory.

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Carole Rodgers-Carroll BA, NZCS
Client Services Manager - Environmental Division

Hill Laboratories
A WORLD LEADER IN ANALYTICAL SERVICES

R J Hill Laboratories Limited
1 Clyde Street
Private Bag 3205
Hamilton 3240, New Zealand

Tel +64 7 858 2000
Fax +64 7 858 2001
Email mail@hill-labs.co.nz
Web www.hill-labs.co.nz

ANALYSIS REPORT

Client:	Taranaki Regional Council	**Lab No:**	639603 SPv1
Contact:	Reynolds, Shane	**Date Registered:**	24-Apr-2008
	c/o Taranaki Regional Council	**Date Reported:**	05-May-2008
	Private Bag 713	**Quote No:**	32663
	STRATFORD	**Order No:**	10512
		Client Reference:	Groundwater Organics
		Submitted By:	Williams, John (Mr)

Sample Type: Clean waters

Sample Name:		MW1 21-Apr-2008 3:15 pm	MW2 21-Apr-2008 3:25 pm	MW3 21-Apr-2008 3:45 pm	MW4 21-Apr-2008 4:00 pm	MW5 21-Apr-2008 4:15 pm
Lab Number:		639603.1	639603.2	639603.3	639603.4	639603.5
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn						
Dissolved Arsenic	g/m³	< 0.020	< 0.0050	< 0.0010	0.0012	0.0019
Dissolved Cadmium	g/m³	< 0.0010	< 0.00025	< 0.000050	< 0.000050	< 0.000050
Dissolved Chromium	g/m³	< 0.010	< 0.0025	< 0.00050	< 0.00050	< 0.00050
Dissolved Copper	g/m³	< 0.010	< 0.0025	0.0021	< 0.00050	0.0013
Dissolved Lead	g/m³	< 0.0020	0.0038	< 0.00010	< 0.00010	0.00016
Dissolved Nickel	g/m³	< 0.010	< 0.0025	< 0.00050	< 0.00050	0.0019
Dissolved Zinc	g/m³	< 0.020	0.014	0.013	< 0.0010	0.0031
Polycyclic Aromatic Hydrocarbons Screening in Water, By SPE						
Acenaphthene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Acenaphthylene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Anthracene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Benzo[a]anthracene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Benzo[a]pyrene (BAP)	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Benzo[b]fluoranthene + Benzo[j] fluoranthene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Benzo[g,h,i]perylene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Benzo[k]fluoranthene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Chrysene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Dibenzo[a,h]anthracene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Fluoranthene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Fluorene	g/m³	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020
Indeno(1,2,3-c,d)pyrene	g/m³	< 0.00010	-	< 0.00010	< 0.00010	< 0.00010
Naphthalene	g/m³	< 0.00050	-	< 0.00050	< 0.00050	< 0.00050
Phenanthrene	g/m³	0.00059	-	< 0.00040	< 0.00040	< 0.00040
Pyrene	g/m³	< 0.00020	-	< 0.00020	< 0.00020	< 0.00020
Total Petroleum Hydrocarbons in Water						
C7 - C9	g/m³	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
C10 - C14	g/m³	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
C15 - C36	g/m³	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
Total hydrocarbons (C7 - C36)	g/m³	< 0.70	< 0.70	< 0.70	< 0.70	< 0.70

SUMMARY OF METHODS

The following table(s) gives a brief description of the methods used to conduct the analyses for this job. The detection limits given below are those attainable in a relatively clean matrix. Detection limits may be higher for individual samples should insufficient sample be available, or if the matrix requires that dilutions be performed during analysis.

Sample Type: Clean waters			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Heavy metals, dissolvd, trace As,Cd,Cr,Cu,Ni,Pb,Zn	0.45µm filtration, ICP-MS, trace level	-	1-5
Polycyclic Aromatic Hydrocarbons Screening in Water, By SPE	Solid phase extraction, SPE (if required), GC-MS SIM analysis	-	1, 3-5
Total Petroleum Hydrocarbons in Water	Solvent extraction, GC-FID analysis	-	1-5
Filtration for dissolved metals analysis	Sample filtration through 0.45µm membrane filter and preservation with nitric acid. APHA 3030 B 21st ed. 2005.	-	1-5

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Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

Peter Robinson MSc (Hons), PhD, FNZIC
Client Services Manager - Environmental Division

CES CAPITAL ENVIRONMENTAL

Lab No. GAD 35981 - 35987
26 February 2008

Shane Reynolds
Taranaki Regional Council
Private Bag 713
STRATFORD

IDENTIFICATION OF BULK ASBESTOS SAMPLE

Bulk samples received on 22 February 2008 from Patea Freezing Works. Sampled by Shane Reynolds.

RESULTS:

GAD #	Details	Asbestos Minerals
35981	080 605	Chrysotile
35982	080 606	Amosite and Chrysotile
35983	080 607	No asbestos detected
35984	080 608	Chrysotile
35985	080 609	Chrysotile
35986	080 6010	Amosite and Chrysotile
35987	080 6011	No asbestos detected

METHODS: Polarised Light Microscopy and Dispersion Staining. Precision is available on request. All results pertain to sample "as received".

Asbestos types: Amosite or Brown asbestos; Crocidolite or Blue asbestos, and Chrysotile or White asbestos.

Asbestos is a hazard. Provided it is incorporated into a stable matrix and no airborne dust is produced it presents minimal health risk. The Asbestos identified follows the definition of "asbestos" (even as a contaminant) in The Health and Safety in Employment (Asbestos) Regulations 1998. Any further query dealing with the asbestos in question should be directed to us.

Interpretations and opinions expressed in this report are outside this Laboratory's terms of Accreditation.

new zealand accredited laboratory

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Reported by
Jackie Herring
Analyst

Capital Environmental Services (2005) Ltd
2-4 Bell Road South
Gracefield, Lower Hutt

P.O. Box 38-328 Wellington Mail Centre 5045
Telephone 04-566 3311 Fax 04-566 3312
Email fibres@ihug.co.nz

Shane Reynolds
Taranaki Regional Council
Private Bag 713
STRATFORD

IDENTIFICATION AND ESTIMATION OF THE ASBESTOS CONTENT OF ASH/SOIL

Bulk samples received on 23 April 2008 from Patea Freezing Works site, Taranaki. Sampled by Shane Reynolds on 21 April 2008.

RESULTS:

GAD #	Details	Asbestos Minerals
36798	Ash 1	No asbestos detected
36799	Ash 2	No asbestos detected
36800	Ash 3	** Chrysotile (1-3%)
36801	Ash 4	No asbestos detected
36802	Ash 5	No asbestos detected
36803	Ash 6	** Chrysotile (8-10%)
36804	Ash 7	** Chrysotile (8-10%)
36805	Ash 8	** Chrysotile (8-10%)
36806	Ash 9	** Chrysotile (15-20%)
36807	Ash 10	** Chrysotile (8-10%)
36808	Ash 11	No asbestos detected
36809	Ash 12	No asbestos detected

NOTE – The estimated percentage (by vol) of Asbestos present is based on method NIOSH 9002 issue 2, Asbestos (bulk) by PLM. This method is not ideal for the quantitative analysis of asbestos in soils which are generally non-homogenous, therefore the term 'estimation' should be used in its broadest sense.

No pieces of asbestos cement debris were identified in the samples submitted. In samples marked **, asbestos fibre bundles were observed during the initial examination using the stereo microscope.

This report may not be reproduced, except in full.

METHODS: Polarised Light Microscopy and Dispersion Staining.

Precision is available on request.

All results pertain to sample "as received".

Asbestos types: Amosite or Brown asbestos; Crocidolite or Blue asbestos, and Chrysotile or White asbestos.

Asbestos is a hazard. Provided it is incorporated into a stable matrix and no airborne dust is produced it presents minimal health risk. The Asbestos identified follows the definition of "asbestos" (even as a contaminant) in The Health and Safety in Employment (Asbestos) Regulations 1998. Any further query dealing with the asbestos in question should be directed to us.

Reported by
Jackie Herring
Analyst

Capital Environmental Services (2005) Ltd
2-4 Bell Road South
Gracefield, Lower Hutt

P.O. Box 38-328 Wellington Mail Centre 5045
Telephone 04-566 3311 Fax 04-566 3312
Email fibres@ihug.co.nz www.fibres.co.nz