REPORT

Fulton Hogan Land Development Ltd

Detailed Site Investigation
Rosemerryn Subdivision, Lincoln

Report prepared for:

FULTON HOGAN LAND DEVELOPMENT LTD

Report prepared by:

Tonkin & Taylor Ltd

Distribution:

FULTON HOGAN LAND DEVELOPMENT LTD	1 copy
Tonkin & Taylor Ltd (FILE)	1 copy

May 2012

T&T Ref: 53036.001

Table of contents

1 Introduction

Tonkin & Taylor Ltd (T&T) is pleased to present the findings of this detailed site investigation for the Rosemerryn Subdivision (Stages 3-15), Lincoln, carried out in accordance with our proposal dated 2 April 2012. The site is a former sheep farm that is proposed to become a residential subdivision with some recreational areas. The proposed staging plan including recreational areas is attached in **Appendix A**.

A preliminary site assessment undertaken for the site[1] identified a number of former activities that have the potential to have caused contamination of the ground. These include the storage and use of agricultural chemicals, fuel storage, a probable sheep dip, waste storage and infilled land.

1.1 Objectives and scope of work

To investigate whether the potentially contaminating activities identified in the preliminary assessment report have lead to contamination of the ground and to assess the potential impact on site users and the environment, the following works were undertaken:

- Targeted sampling of localised potentially contaminating activities identified in the preliminary investigation by hand auger and test pit sampling;
- Grid-based hand auger sampling to assess broad-acre contamination by persistent agrichemicals across the paddocks;
- Evaluation of results against applicable residential guidelines and standards;
- Recommendations for the proposed subdivision to proceed under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (2012) (NES) based on the proposed staging plan (**Appendix A**); and
- Preparation of this report.

This report detailing the investigation and recommendations has been prepared in accordance with the Ministry for the Environment's "Contaminated Land Management Guideline 1: Reporting on Contaminated Sites in New Zealand" and the NES.

The qualifications and experience of the T&T personnel undertaking the fieldwork, management, and certification of this report comply with the requirements for "suitably qualified and experienced practitioners" set out in the Ministry for the Environment Users Guide (April 2012).

2 Interviews with current and former farmers

A T&T Environmental Consultant visited the site with Neville Sharp on 4 April 2012. Mr Sharp is the nephew of the prior owner and operator of the farm. He has been associated and familiar with the site for approximately 30 years, and now leases the site for farming.

At the time of the site walkover with Mr Sharp most of the structures had been demolished, with only three small sheds remaining on site – the pump and power sheds and one small storage shed to the rear of the northern house.

Discussions and the walkover with Mr Sharp revealed the following information (refer **Figure 2**):

- Approximate locations of the foot rot bath, kill shed, chemical storage shed (with diesel tank above) and two septic tanks (one at each house);

[1] Tonkin & Taylor, March 2012, Desk Study for Ground Contamination, Edward Street, Lincoln, Canterbury

- An approximate sheep dip location underlying the woolshed , which Mr Sharp assumed to have been removed prior to the shed being extended;
- Sheep went to concrete pad adjacent to the wool shed after being dipped;
- The northern former house was built 40-50 years ago and the southern former house approximately 140 years ago;
    - Two waste pits used for general waste and offal were located to either side of area of farm buildings. Waste was periodically burnt and covered with soil;
    - An old waste pit which was used prior to Mr Sharp's involvement with the far (30+ years) located to the east of the woolshed, adjacent to the stream bank. Mr Sharp did not know the depth or lateral extent of the old pit;
    - The new waste pit is still used (latest burn within the last couple of months) and is located to the west of the old house. The pit was originally more than 2m deep but now ground level lies approximately equal to the natural ground surface. The new waste pit has been extended north over the years;
- Liquid chemicals were likely to have been disposed in the creek/old waste pit area immediately north of the dip/woolshed area. The creek previously flowed;
- The former structures located near the newer house were used as a firewood shed and garage. An old orchard area was located to the east of these buildings.
- The concrete pad near the old house was the floor slab of a former garage use - no fuel or oil storage over and above that of a typical domestic garage occurred.

During the soil sampling, discussions were also held with a former worker (name was not obtained) who was also very familiar with the site. He was able to provide the following information:

- A sheep dip was used but its location is unknown (approximately 15 years prior to his time on the farm);
- The foot rot bath was approximately 300 mm deep, and comprised a concrete box with steel box inside;
- The stream was running 10 years ago and was spring fed, with the spring located approximately 800m upstream of woolshed.

3 Potential for contamination

The preliminary site assessment defined a range of activities with potential for contamination as summarised in **Table 1**. The discussions with Mr Sharp and the former worker supported the findings of the preliminary report and indicated specific locations for the sampling.

Sampling locations that are identified in **Table 1** are shown in **Figure 3a and 3b**.

Table 1: Potential sources for contamination

Potential source	Possible contaminants	Potential magnitude and distribution	Sampling locations
Hazardous chemical storage shed and surrounding drum storage	Metals, hydrocarbons and organochlorine pesticides (OCP)	The potential contamination in this area results from spillage during the storage, use and mixing of agrichemicals and fuels and will likely be localised to surface soils in the vicinity of the shed and outdoor storage area. A water tank was present to the west of the woolshed.	Chemical storage shed – test pit TP1 and hand samples TS13-TS15; water tank – hand sample TS12
Miscellaneous drum storage	Metals, hydrocarbons and OCP	Drums were stored in various locations around the property and may have led to localised contamination of surface soils.	Hand samples TS30
On site waste disposal	Wide range including metals, hydrocarbons, solvents, OCP, ONOP, asbestos.	Spread around the site particularly around demolished house site, in woolshed paddock and in the paddock to the west of the buildings. Potential for contamination of surface soil beneath debris piles and fire piles. Surface waste was also present in the pit in the northwestern paddock.	Old waste pit: test pits TP3-TP5; New waste pit: test pits TP10-TP12; Surface waste in northwestern paddock: grid sample S25
Fuel storage	Petroleum hydrocarbons	Mr Sharp was able to confirm that fuel storage was only above the chemical storage shed. Suspected fuel storage to the west of the houses was also sampled.	Test pits TP1 and TP13 and surface samples TS13-TS15;
Sheep dip, foot rot bath, wool shed, holding yard	Arsenic, copper, zinc, OCP	Location of sheep dip, if any, unknown. Potential for surface and subsurface soil contamination beneath and around dip structure. Waste dip materials may have been disposed of in the area.	Sheep dip: trenches T1a, b, c and T2 a, b, c; Potential disposal area in creek: test pits TP6 and TP7; Foot rot bath: test pit TP2 Woolshed: hand samples TS16-TS22 Holding yard: hand samples TS31 and TS32
Use of agrichemicals for pasture and cropping.	Persistent agricultural pesticides and herbicides, metals.	Based on typical application methods, and rates, residual agrichemicals within the soil are likely to be present at relatively low concentrations, but be widespread across the applications areas. Based on experience with similar site, the risk of these residual chemicals being at high levels is generally, low aside from areas of spills and mixing areas.	All grid samples S1-S42 and test pits TP13-TP15
Glasshouse	Persistent agricultural pesticides and	Contamination is likely to be localised to the footprint of the glasshouses.	Hand samples TS37-TS38

Potential source	Possible contaminants	Potential magnitude and distribution	Sampling locations
	herbicides, metals.		
In filled land	Various but including heavy metals, hydrocarbons, general refuse.	A pit present in the northwestern paddock that contained surface waste was unlikely to be in filled due to the shallow groundwater. It has also been noted that the area directly outside the western boundary of the site has been in filled. This is offsite and even if in filled with contaminated material is unlikely to impact on the site significantly.	As per onsite waste disposal: Old waste pit: test pits TP3-TP5; New waste pit: test pits TP10-TP12; Surface waste in northwestern paddock: grid sample S25
House sites	OCP and metals	Lead contamination of surface soils immediately around houses may have occurred if lead based paint had been used. Any contamination will likely be restricted to surface soils in the immediate vicinity of the houses and demolition materials. The use of sprays in garden areas may have results in accumulation of persistent OCP and metals, again localised to surface soils in areas of use.	Old house: hand samples TS9-TS11; Newer house: hand samples TS39-TS40
Stockpiled soils	Various but including heavy metals, hydrocarbons, persistent pesticides.	Based on site observations and discussions with land owners it is likely that the soils currently stockpiled onsite are associated with the redevelopment earthworks and were therefore sourced from the site or its immediate surrounds. No land use activities with the potential to cause contamination have been identified during the course of this investigation for the soil source area to the south west of the site. The potential for contamination is therefore considered to be low.	Most of the material south of the houses had been removed at the time of sampling. The large stockpile to the west of the houses was included in the gridded sampling S7.
Burn spots, building waste material present at surface	Heavy metals, PAHs	During the site walkover with Mr Sharp and at the time of sampling burn spots and building waste materials at surface were located within paddocks adjacent to old house and woolshed.	Hand samples TS4-TS8, TS12, TS27-29
Low points and depressions	Heavy metals and pesticides	This is limited to swampy areas, depressions and creek bed identified in Figure 2.	Swamp adjacent to woolshed: test pit TP8; Creek bed: test pit TP9 and samples TS1-TS3 and TS33-TS36 Depressions: hand samples TS23-TS26 and TS41

4 Soil sampling methodology

4.1 Sampling objectives

The objectives of the soil investigation and sampling at the Rosemerryn Subdivision site were to:

- Establish the type and location of sources of contamination on the site;
- Broadly establish the degree and extent of contaminant distribution across the site, both in terms of broad-acre contamination within the outer paddocks and of localised sources within the central area of farm buildings; and
- Approximate the volume of the two waste pits.

4.2 Sampling strategy

The sampling strategy comprised a mix of systematic and judgemental sampling patterns. A grid-based systematic sampling plan was applied to assess any broad-acre contamination relating to the use of persistent agrichemicals across the site. This was supplemented by judgemental or targeted sampling of likely "hot spot" areas where known or suspected sources of potential contamination were located. The grid based samples were collected at a grid spacing of approximately 100 m, appropriate for the assessment of the broad-acre contamination from former agricultural practices.

This sampling strategy approach allowed for general contamination levels to be assessed in a non-biased manner, while allowing potential contaminant concentrations around known features to be determined.

The sampling location plan is presented on **Figure 3a** and **Figure 3b**.

4.3 Sampling methodology

4.3.1 Outer paddock area

Sampling of the outer paddock area was undertaken by a T&T Environmental Engineer and assistant on the 18-19 April 2012. The use of persistent pesticides and fertilisers are likely to have occurred, but no specific sources of contamination were identified in the preliminary site assessment. The sample locations, numbered S1 – S42 are identified in **Figure 3a**.

All grid sample locations were sampled using a trowel for the surface sample with a hand auger used to obtain a deeper sample at 300mm depth at each location.

To avoid cross-contamination, fresh disposable gloves were used to collect each sample and equipment was decontaminated using Decon90^{TM} and tap water between each location.

4.3.2 Central farm area

Soil samples within the central farm area were obtained using a mix of trowel and hand auger, as well as test pits and trenches.

A total of 41 surface/near surface soil samples were obtained using a trowel and hand auger. The sampling was undertaken by a T&T Environmental Engineer and assistant on the 18/19 April 2012. The sample locations, numbered TS1-TS41, are identified in **Figure 3b**. To avoid cross-contamination, fresh disposable gloves were used to collect each sample and equipment was decontaminated using Decon90^{TM} and tap water between each location.

Test pits and investigative trenches were excavated on 12 April 2012 by Blakely Construction using an excavator. A T&T Environmental Engineer logged the pits and collected soil samples as

required. Test pits and trenches were undertaken at specific locations to allow for collection of deeper samples, determine the extent of waste pits and identify the location of the former sheep dip. Test pits were extended to a maximum depth of approximately 2.4m below ground level. All samples from test pits and trenches were taken using fresh disposable gloves between each sample. The samples were taken either from the pit face or the centre of the excavator bucket to ensure possible contaminants remaining on the bucket were not included in the sample.

In total 21 test pits and five investigative trenches were excavated. Samples were collected from 15 test pits (TP1-TP15) and two trench locations (T1-T2), as identified in **Figure 3b**. The remaining locations were undertaken for investigative purposes only, the areas of the former sheep dip and waste pits.

A selection of photographs of the excavations is included in **Appendix B**. Please note that all depths are metres below ground level and odour is only identified if any was notable in the soil.

4.3.3 Dispatch

All samples were collected into laboratory-supplied glass jar, appropriately labelled and placed immediately into a cooled chilly bin. At the end of each day of site work the samples were sent to Hills Laboratory under chain-of-custody documentation or placed into a fridge for storage.

5 Field observations

5.1 Outer paddock area

The broader paddocks (excluding the pit in the north west paddock) were generally free of waste or any additional sign of potential contamination. The pit in the northwest paddock (currently occupied by Crop & Food potato crops) is approximately 10m by 20 m in area and extends to a depth of 2m with the base at approximately groundwater level. Fibrous organics are present at the very base of the pit and some waste material has also been dumped in the pit including old house appliances, steel and plastics. Photographs of the pit are attached in **Appendix B**.

All surface soil samples obtained consisted of topsoil, with most excavation points reaching brown silts and some gravels by 300mm depth.

5.2 Central farm area

Waste, including household rubbish, old drums and chemical containers, was scattered on the surface in the creek bed and across the paddocks near the houses and woolshed.

Logs of soils encountered in the test pits in included in **Appendix C**. Soils comprised of topsoil overlying sands. Sandy gravels were encountered in some locations.

The surface soils encountered during trowel/hand augering consisted of topsoil with eight samples containing some gravel, overlying a range of brown silts, sandy gravel and sand at the base of the sampling points (300mm). The only notable odour was present in the deeper sample adjacent to chemical storage shed (TS13) which had a moderate hydrocarbon odour.

Five trenches were excavated to attempt to identify the former sheep dip, or evidence of the area of the former dip, if removed. The trenches were excavated in and around the area identified by Mr Sharp as location of the former sheep dip. The sheep dip was not encountered. Samples were collected from two of the trenches (T1 and T2) in the area indicated by Mr Sharp as to have been where the former dip was located. An additional three trenches were excavated for investigative purposes only. Further sampling of the area of the sheep dip was undertaken using other sampling methodologies including test pits and surface samples.

The investigative trench (0.5m deep) to the south east of the woolshed (across the drain along the fence line) had waste material present.

To determine the extent of the old waste pit (see **Figure 2**) four test pits were excavated. Three of the test pits were sampled and one additional pit was excavated to confirm the edge of the waste pit. Waste material was found to approximately 1.9m deep along the eastern extent of the pit and becomes shallow, within the top 0.5m, in the western extent. The volume of old waste pit is approximately 50-100m^3.

To determine the extent of the new waste pit (see **Figure 2**), three test pits were excavated for sampling purposes with five additional pits excavated to better delineate the waste volume. The new waste pit was approximately 2m deep in its southern end, becoming shallow to within the top 0.5m at the northern end. The new waste pit is approximately 300-400m^3 in volume.

The waste in both pits generally consisted of fabrics, plastics, glass, steel, farm equipment, bones, empty paint and chemical containers. The waste had been periodically burnt and covered with sandy silt and topsoil. The locations of the waste pits are shown in **Figure 2.**

6 Background levels and assessment criteria

Analytical results were evaluated by comparison with local background concentrations in soil and with relevant soil assessment criteria selected in accordance with MfE Guideline 2[2] as directed by the NES. The end use of the site is anticipated to be residential with small areas of recreational use (see Staging Plan in **Appendix A**) and so applicable residential and recreational human health criteria have been selected based on the proposed staging plan.

Relevant assessment criteria are provided in the following:

- National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (MfE, 2011);
- Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (MfE, 1999);
- Guidelines for Assessing and Managing Contaminated Gasworks Sites in New Zealand (MfE, 1997).

Where relevant New Zealand standards or guidelines were not available, the most conservative of the following international risk based guidance was used:

- Supplemental Guidance for Developing Soil Screening Levels at Superfund Sites (US EPA, 2001);
- Soil guideline values (DEFRA and EA, 2002);
- Guideline on the Investigation Levels for Soil and Groundwater (NEPC, 1999); or
- Region 9 Preliminary Remediation Goals (US EPA, 2002b).

Background levels for metal concentrations in soils in the area were obtained from reports commissioned by Environment Canterbury and produced by T&T[3].

[2] Contaminated Land Management Guidelines No.2: Hierarchy and Application in New Zealand of Environmental Guidelines: MfE 2003

[3] Background Concentrations of Selected Trace Elements in Major Canterbury Soils. Tonkin & Taylor, 2006.

7 Laboratory results

A total of 202 soil samples were taken and 103 samples were selected for laboratory analysis. Samples were selected for analysis based on their location on the site and the potential contaminants identified in the preliminary site assessment. Most of the surface samples and a number of the deeper soil samples were analysed. The remaining deeper samples have been held chilled, pending review of results for the surface samples.

7.1 Outer paddocks

In total across the area of the outer paddocks the following analysis was undertaken:

- 43 soil samples were analysed for heavy metals;
- 32 soil samples were analysed for organochlorine pesticides (OCPs);
- 11 soil samples were analysed for multiresidue pesticides;
- 1 soil sample was analysed for polyaromatic hydrocarbons (PAHs); and
- 5 soil samples were analysed for pH.

Collated laboratory analysis results are presented compared to guideline values in **Appendix D**. Full laboratory transcripts are included in **Appendix E**.

All surface samples were analysed for heavy metals and were approximately at or below expected background levels for Canterbury[4]. Six samples had detectable levels of OCPs, but these were within the same order of magnitude as than the laboratory detection limits. The pH of the soil from five different locations ranges from 5.5-5.8.

None of the samples from the outer paddocks as shown on **Figure 3a** exceed the concentrations of the residential or recreational guidelines

7.2 Central farm area

The following analysis was undertaken:

- 57 soil samples were analysed for heavy metals;
- 27 soil samples were analysed for OCPs;
- 6 soil samples were analysed for multiresidue pesticides;
- 15 soil samples were analysed for PAHs;
- 13 soil samples were analysed for TPH;
- 5 soil samples were analysed for asbestos; and
- 5 soil samples were analysed for BTEX.

Collated laboratory analysis results are presented compared to guideline values in **Appendix D**. Full laboratory transcripts are included in **Appendix E**.

With the exception of selected samples with exceedances (discussed further below) arsenic, chromium, lead and nickel were below expected background concentrations. The maximum detected levels of cadmium, copper and zinc were above expected background, but well below residential guidelines.

Four samples analysed for TPH showed detectable levels of hydrocarbons but were below residential guidelines. The maximum levels detected were at the location that odour was noted

[4] Background Concentrations of Selected Trace Elements in Major Canterbury Soils (Tonkin & Taylor Ltd, 2006)

(TS13). 17 samples had detected levels of OCPs including aldrin, deildrin and DDT isomers. Three samples had detected PAHs, but all were well below residential guidelines. No BTEX compounds were detected.

No asbestos was detected in the five samples that were analysed.

Samples from ten locations across the central farm area exceed the residential guidelines. These were for arsenic, lead, aldrin and dieldrin only and are summarised in **Table 2**.

Table 2: Soil samples exceeding guidelines (mg/kg)

Sample location		Arsenic	Lead	Aldrin	Dieldrin
TP4 0.5	Old waste pit	**35**	92	ND	0.92
TP5 0.5		**85**	38	ND	ND
TP7 0.5	Creek bed	**33**	92	**0.094**	**9.4**
TP10 0.5	New waste pit	**42**	**168**	ND	ND
TP11 0.5		**35**	**167**	-	-
TS9 0.0	Older house	5	**700**	-	-
TS10 0.0		7	**470**	-	ND
TS12 0.0	Old water tank	4	**220**	-	-
TS19 0.0	Woolshed	**22**	54	-	-
TS22 0.0		**81**	52	-	-
Expected background[1]		16.3	128.8	NA	NA
Residential guideline		20[2]	210[2]	0.04[4]	2.6[2]
Recreational guidelines		80[2]	880[2]	0.2[4]*	70[2]

- was not analysed

ND – below laboratory detection limits

NA – not applicable

[1]- Background Concentrations of Selected Trace Elements in Major Canterbury Soils (Tonkin & Taylor Ltd, 2006)

[2]- National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (MfE, 2012)

[3]-Soil guideline values (DEFRA and EA, 2002); sandy soil, all pathways

[4]-Supplemental Guidance for Developing Soil Screening Levels at Superfund Sites (US EPA, 2001)

[5]-Guideline on the Investigation Levels for Soil and Groundwater (NEPC, 1999)

Values in **bold** are above expected background levels. Highlighted values are above the residential guidelines. Underlined exceeds recreational guidelines.

*No recreational guideline available – outdoor commercial/industrial used

Based on the Staging Plan provided (**Appendix A**) parts of the site including a corridor running through the site adjacent to the creek will form a recreational area with no residential properties. As a lower likelihood of exposure to contamination is expected on recreational land use compared to residential, the guideline values for this land use allow for a higher concentration of contaminants (as shown in **Table 2**). Where there is certainty that recreational land use will occur in an area, soil data can be compared to recreational guideline values. Compared to recreational values the only exceedences onsite are for arsenic within the old waste pit (TP5) and the woolshed (TP22).

8 Discussion

8.1 Human health risk

All of the samples from within the outer paddocks area were below residential guidelines. This includes the sample taken from the pit with waste materials at the surface in the northwest paddock.

In regards to the central farm area, samples near the old house and an assumed old water tank (TS9, TS10 and TS12) have concentrations of lead that exceed residential guideline. It is probable that these elevated concentrations have resulted from flakes of lead-based paint used on the nearby buildings. Two samples on each side of the woolshed area (TS19 and TS22) have high levels of arsenic in surface soils, possibly resulting from sheep dipping processes. Other samples within the woolshed area did not contain concentrations of arsenic above the residential guideline, suggesting these samples are localised hotspots. Deeper samples in the area of TS19 and TS22 were not analysed for heavy metals so the depth of contamination in these areas has not been ascertained.

The two waste pits contained concentrations of arsenic that exceed the residential and recreational guideline values at 0.5m. The deeper samples analysed did not have elevated concentrations of arsenic. No other heavy metals or organic contaminants were encountered in samples from the waste pits at concentrations above the guideline values. Sampling of the natural soils underlying the waste pits did not detect elevated concentrations of contaminants.

Only one sample location in the creek bed (TP7) contained contaminants (arsenic, aldrin and dieldrin) that exceed residential guidelines at 0.5m depth. This test pit location is close to the woolshed and a likely discharge area for chemicals used in the woolshed. Analysis of nearby samples TS35 and TS36, and further along the creek, did not show elevated concentrations in the soils analysed. The vertical extent of the contamination at TP7 has not been ascertained.

Depending on the certainty of the subdivision proposals it may be possible to assess some of the contamination sources against the assessment criteria for recreational land use. As a lesser exposure scenario exists through recreational use of land, a higher concentration of contaminants in soil is acceptable than on residential land. The pesticide concentrations in the creek bed do not exceed recreational guidelines nor does the lead in soils around the former house or water tank. The arsenic concentrations in the new waste pit have not been found to exceed recreational assessment criteria. However, the arsenic concentrations at the woolshed and in the old waste pit do exceed the recreational guidelines. Detailed assessment of final layout of residential and recreational land use at the site is required to determine appropriate assessment criteria upon which to confirm areas of unacceptable contamination.

8.2 Environmental risk

The contaminants identified in soil also have the potential to impact the groundwater and local surface water features. To affect water resources contaminants must be present at sufficient concentration and volume in the soil, migration pathways to groundwater and surface water must exist. The depth to groundwater at the site has not been measured however is assumed to be shallow (~2m below ground level) as the groundwater table was encountered in the base of TP6 within the dried creek bed. Regional groundwater flow in the Canterbury Plains is to the south to south east. The aquifer is unconfined in this area. Groundwater in the vicinity of the site is noted to be for used for domestic supply, irrigation and stock watering (Environment Canterbury data base). The closest community water supply well (well number 175) is 170 m south of the western boundary of the site and is screened from 31.3m to 34.3m below ground. The protection zone for

this well as defined by Environment Canterbury covers approximately 1.6 ha in the south western corner of the site.

The dried creek bed is orientated west-east through the centre of the site. Anecdotal evidence suggests the creek used to flow, fed by a spring 800m to the west. The staging plan for the site development (**Appendix A**) suggests that the creek may be used as drainage for stormwater. It is understood that the creek itself will not be re-established; therefore the creek is not considered as potential receptor. The nearest natural water course at present is the L1 Stream 800 m to the south west of the site. Given the distance from the site the L1 Stream is not considered as a potential receptor.

The geology of the area is described by Brown[5] as alluvial silt and sand deposits of the Springston Formation.

The contamination identified onsite is limited to arsenic within the two waste pits to each side of the central farm area, surface lead contamination around the former old house, isolated hotpots of arsenic contamination in the vicinity of the former woolshed and a hotspot of pesticide contamination within the dried creek bed in the area nearest the woolshed. In regards to risk to the receiving environment the following is noted:

- The base of the waste pits are likely to be close to groundwater table indicating a short pathway for contaminant migration to groundwater and offering little opportunity for adsorption to soil in the unsaturated zone. Concentrations of contaminants in the soil material within the waste are elevated but not majorly nor consistently. The risk to groundwater from this source is low to moderate.
- Lead contamination around the former house and water tank is likely to be shallow and restricted to a relatively small area. The risk to groundwater from this source is low.
- Hotspots of arsenic contamination around the former woolshed and sheep dipping area appear to be relatively isolated as other sampling in the area has indicated low concentrations. The risk to groundwater is this area is considered to be low.
- The pesticide (aldrin, dieldrin, arsenic) contamination noted in TP7 in the creek bed: adjacent sampling has not detected pesticide contamination, although deeper samples in this location have not been analysed. Shallow groundwater is likely in the depression of the creek bed increasing the chance of contaminants reaching the water table. The increased infiltration of groundwater through soils will occur in the creek bed given the use of the area for stormwater from the proposed development. The increased infiltration of surface water has the potential to increase the transport of contaminants in the unsaturated zone to groundwater. However OCPs partition strongly to soils so groundwater contamination is likely only where there are large volumes of OCPs in soil. The volume and concentration of OCPs encountered in the creek bed are not considered significant in terms of risk to groundwater. Increased contaminant transport through entrainment of contaminant soils in overland flow, particularly if the contamination is exposed. The contamination data indicates the contamination is at 0.5m depth reducing the potential for erosion and entrapment in runoff, however further data may be required to confirm this.

[5] Forsyth, Barrell and Jongens, Geology of the Christchurch Area, Geological Map 16, GNS Science, 2008

9 Conclusions and recommendations

9.1 Conclusions

The potential sources of contamination as identified in the preliminary site assessment were investigated.

All samples taken in a grid format within the outer paddocks area contained contaminant concentrations below residential guidelines. No restrictions on land use exist in this area as a result of contamination.

Sampling within the central farm area has indicated the presence of hot spots, compared to residential guidelines, that are limited to:

- materials within the two waste pits (arsenic),
- soils surrounding the old house/water tank (lead),
- surface soils around the woolshed (arsenic), and
- soils in former creek bed nearest the woolshed (aldrin, dieldrin and arsenic).

However only the arsenic concentrations in the old waste pit and the woolshed exceed assessment criteria based on a recreational land use. Assessment of final layout of residential and recreational land use at the site is required to determine which assessment criteria apply to any given area.

Trenching around the location of the former sheep dip did not locate a buried structure. Anecdotal evidence suggests the dip was removed some time ago however this could not be confirmed.

The two waste pits (the old waste pit to the east of the former houses, and the new waste pit to the west of the former houses) contain waste materials that deem the materials unsuitable for construction. Also, while waste was burnt following placement in the pits, some putrescible material may remain presenting a risk of landfill gas generation.

Table 3 summarises the level of ground contamination, relative to guidelines, within each development stage as shown in the staging plan in **Appendix A**. Remediation requirements to allow the proposed development to proceed will depend on the final layout of residential and recreational land use.

Table 3: Contamination level of stages with respect to human health guidelines

Stage	Contamination with respect to guidelines	Issues to be addressed
3	Below residential and recreational	Nil
4	Residential **exceedances**, below recreational	New waste pit. Contamination and potential for landfill gas.
5	Residential **exceedances**, recreational **exceedances**	Lead hotspots by old house (if within residential area) and arsenic hotspots in vicinity of woolshed (under both residential and recreational land use scenarios).
6	Below residential	Nil
7	Below residential	Nil
8	Residential **exceedances**, recreational **exceedances**	Old waste pit. Contamination and potential for landfill gas.

Stage	Contamination with respect to guidelines	Issues to be addressed
		Localised pesticide contamination within creek bed (exceeds residential but not recreational assessment criteria).
9	Below residential	Nil
10	Below residential	Nil
11	Below residential	Nil
12	Below residential	Nil
13	Below residential	Nil
14	Below residential	Nil
15	Below residential	Nil

A qualitative risk assessment to the receiving environment suggests that the risk to groundwater from the sources is low or low to moderate. The materials in the waste pits present the most significant concern (low to moderate) however these materials may be removed due to other factors. Pesticide contamination in the creek bed and its potential for entrainment in stormwater within the drainage channel is a potential concern. Further assessment, in the context of the final design proposals for the drainage reserve may be required allow the proposed development to proceed.

9.2 Regulatory requirements

As past land uses have occurred onsite and have caused contamination, the activities of subdivision, land use change and earthworks trigger the requirement for consent from Selwyn District Council under the NES. This detailed site investigation has indicated the presence of contaminants above the relevant assessment criteria. The proposed activities are therefore Restricted Discretionary activities.

To gain resource consent the contaminant sources at the site will need to be addressed to ensure contaminant concentrations are acceptable for the proposed use.

To avoid the potential for production of landfill gas, soils and waste materials from the two waste pits may need to be removed. The volume of soils in the waste pits is estimated to be in the order of 50-100m^3 in the old waste pit and 300-400^3 in the newer waste pit.

To allow an appropriate contamination remediation/management strategy to be developed for the remainder of the site will require an assessment of the findings of the investigation against the final proposed layout of residential and recreational land use. Contaminant hotspots not acceptable for residential land use may be acceptable to remain if located in recreational areas. Arsenic concentrations in the old waste pit and in the vicinity of the woolshed, however, also exceed the less stringent recreational values and would need to be addressed to allow the proposed recreational land use in this area.

Potential options to address contamination at the site include:

- Soils that are contaminated to a degree unsuitable for residential land use but below guidelines for recreational land use could be placed within recreational parts of the development.
- The potential for exposure to contaminated soils could be minimised through the placement of a suitably designed capping layer such as a clay/silt layer of 0.6m-1.0m thickness over contaminated areas.

- Mixing of low volumes of low-level contamination with cleaner underlying soils may reduce concentrations to acceptable levels (e.g. lead contamination around the former older house site).
- Removal of contaminated soils offsite with disposal to a facility licensed to receive such material or to a suitable location with prior approval from the District and Regional Councils.

Development of a management approach for the pesticide contamination within the former creek bed area needs to considered in the context of the final design proposal for the stormwater drainage.

Further delineation (laterally and vertically) of these contaminant hot spots may be required prior to determining the most cost effective approach. Samples of deeper soils that have been collected during this investigation but not analysed could be submitted for analysis to assess the depth extent of contamination in the first instance.

In order to meet the requirements of the NES consent, Selwyn District Council may require a Remediation Action Plan (RAP) detailing the approach to remediation prior to works commencing. Procedures for the identification, handling, placement/disposal of soils, prevention of discharges (e.g. dust, sediment), addressing any unforeseen contamination, protection of health and safety of construction workers, and details on validation approach would likely be required to be included in the RAP.

Environment Canterbury require that this detailed site investigation report, and any subsequent investigation, remediation or validation reports are submitted for their information and Listed Land Use Register. Based on the results of this investigation the site (or parts thereof) would likely be categorised by Environment Canterbury as "Contaminated for [residential/recreational] land use". Following remediation of the site the classification would likely be changed to "Below guideline values for [residential/recreational] land use" or "Managed for [residential/recreational] land use" depending on the approach used to address the contamination.

10 Applicability

This report has been prepared for the benefit of Fulton Hogan Land Development Ltd with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

Recommendations and opinions in this report are based on data from soil samples. The nature and continuity of soil away from the sample locations are inferred but it must be appreciated that actual conditions could vary from the assumed model.

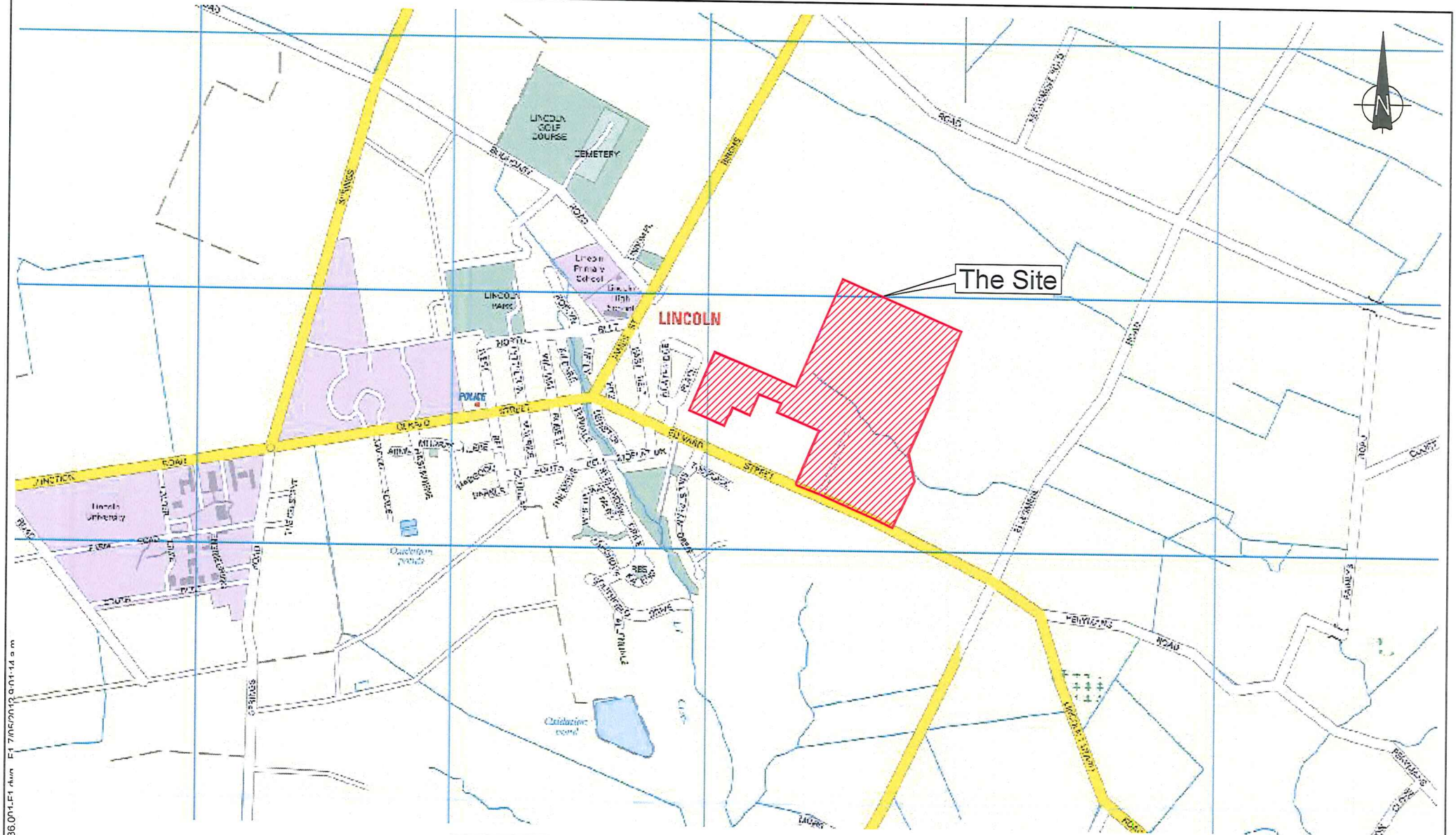
Tonkin & Taylor LTD

Environmental and Engineering Consultants

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
.....	.....
Wendy Dean	Grant Lovell
Environmental Engineer	Christchurch Group Manager

wed

P:\53036\53036.001\WorkingMaterial\20042012 dsi WED part reviewedLKH.docx



SCALE 1: 20,000

0 200 400 600 800 1000 (m)

Street map sourced from Land Information New Zealand data (Crown Copyright Reserved).

Tonkin & Taylor
Environmental and Engineering Consultants
33 Parkhouse Road, Wigram, Christchurch

DRAWN	RBS	May.12
DRAFTING CHECKED		
APPROVED		
CADFILE : \\53036.001-F1.dwg		
SCALES (AT A4 SIZE) 1: 20,000		
PROJECT No. 53036.001		

FULTON HOGAN LIMITED

DETAILED SITE INVESTIGATION–GROUND CONTAMINATION STAGES 3– 12 ROSEMERRYN SUBDIVISION, LINCOLN

Location Plan

FIG. No. Figure 1

REV. 0

\53036\WorkingMaterial\53036.001-F1.dwg F1 7/05/2012 9:11:14 a.m.

SCALE 1: 4000

0 40 80 120 160 200 (m)

Aerial photo sourced from Google Earth(Copyright: 2009). Image @ 2012 Digital Globe, @ 2012 Whereis Sensis Pty Ltd

Property boundaries sourced from Land Information New Zealand data as at 7–Feb–2012 (Crown Copyright Reserved).

L:\53036\WorkingMaterial\53036.001-F2.dwg, F2, 11/05/2012 8:02:55 a.m., rbs, 1:1

Tonkin & Taylor
Environmental and Engineering Consultants
33 Parkhouse Road, Wigram, Christchurch
www.tonkin.co.nz

DRAWN	RBS	May. 12
DRAFTING CHECKED		May 12
APPROVED		May 12
CADFILE : \\53036.001–F2.dwg		
SCALES (AT A3 SIZE) 1: 4000		
PROJECT No. 53036.001		

FULTON HOGAN LIMITED

DETAILED SITE INVESTIGATION–GROUND CONTAMINATION STAGES 3– 12 ROSEMERRYN SUBDIVISION, LINCOLN

Site Layout Plan

FIG. No. Figure 2

REV. 0

Aerial photo sourced from Google Earth(Copyright: 2009). Image @ 2012 Digital Globe, @ 2012 Whereis Sensis Pty Ltd
Property boundaries sourced from Land Information New Zealand data as at 7–Feb–2012 (Crown Copyright Reserved).

L:\53036\WorkingMaterial\53036.001-F3a.dwg, F3a, 7/05/2012 9:45:47 a.m., rbs, 1:1

Tonkin & Taylor
Environmental and Engineering Consultants
33 Parkhouse Road, Wigram, Christchurch
www.tonkin.co.nz

DRAWN	RBS	May. 12
DRAFTING CHECKED		May12
APPROVED		May12
CADFILE : 53036.001–F3a.dwg		
SCALES (AT A3 SIZE) 1: 4000		
PROJECT No. 53036.001		

FULTON HOGAN LIMITED

DETAILED SITE INVESTIGATION–GROUND CONTAMINATION STAGES 3– 12 ROSEMERRYN SUBDIVISION, LINCOLN

Sampling Layout Plan

FIG. No. Figure 3a

REV. 0

Aerial photo sourced from Google Earth(Copyright: 2009). Image @ 2012 Digital Globe, @ 2012 Whereis Sensis Pty Ltd
Property boundaries sourced from Land Information New Zealand data as at 7–Feb–2012 (Crown Copyright Reserved).

L:\53036\WorkingMaterial\53036.001-F3b.dwg, F3b, 14/05/2012 2:36:59 p.m., rbs, 1:1

Tonkin & Taylor
Environmental and Engineering Consultants
33 Parkhouse Road, Wigram, Christchurch
www.tonkin.co.nz

DRAWN	RBS	May. 12
DRAFTING CHECKED		
APPROVED		
CADFILE : 53036.001–F3b.dwg		
SCALES (AT A3 SIZE) 1: 1000		
PROJECT No. 53036.001		

FULTON HOGAN LIMITED

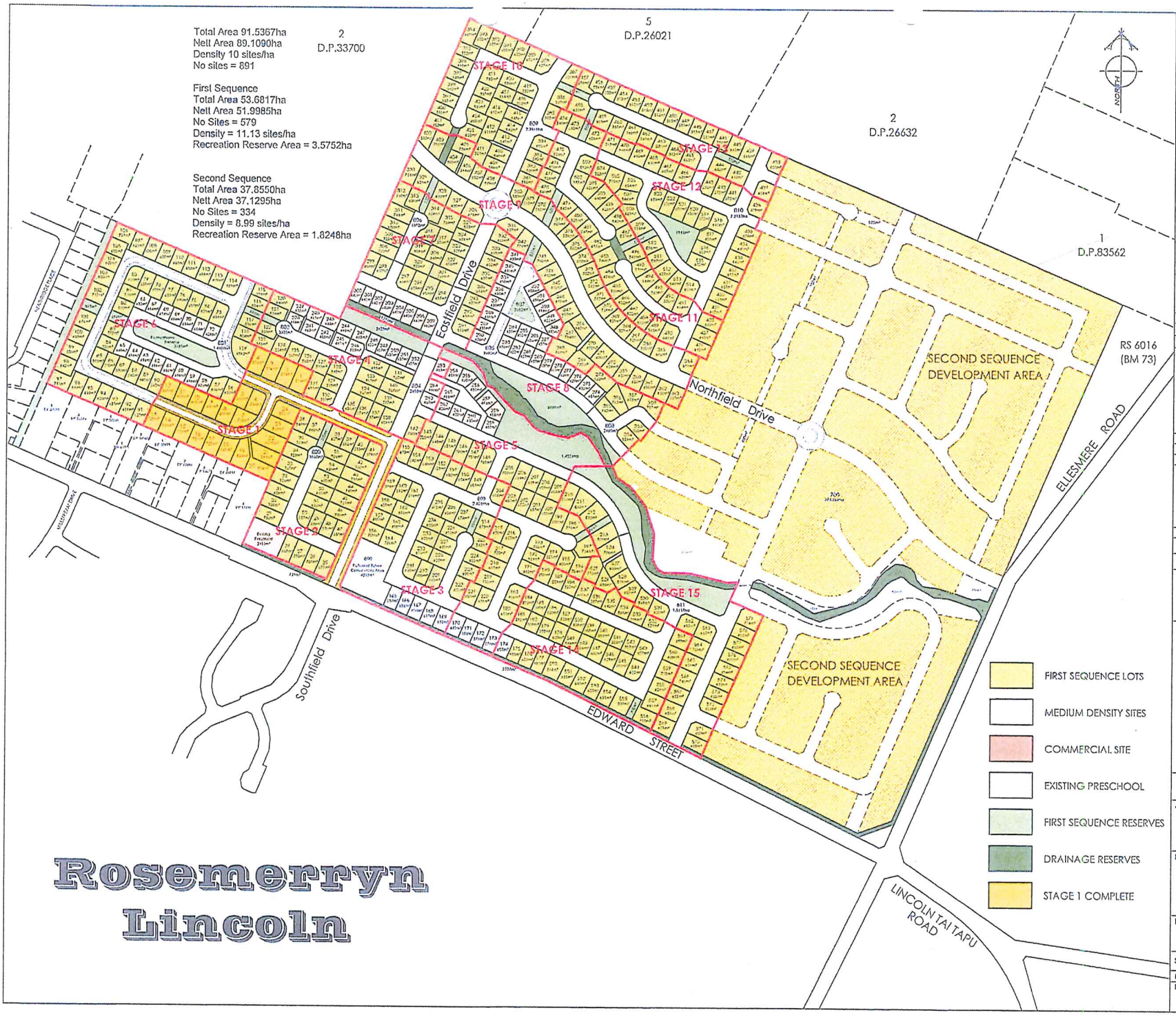
DETAILED SITE INVESTIGATION–GROUND CONTAMINATION STAGES 3– 12 ROSEMERRYN SUBDIVISION, LINCOLN

Sampling Layout Plan

FIG. No. Figure 3b

REV. 0

Appendix A: External figures



NOTES :

1) Areas and dimensions are subject to final survey and deposit of plans.
2) Service easements to be created as required.
3) This plan has been prepared for subdivision consent purposes only. No liability is accepted if the plan is used for any other purpose.
4) Any measurements taken from information which is not dimensioned on the electronic copy are at the risk of the recipient.
5) This plan is subject to the granting of subdivision and/or resource consents and should be treated as a proposal until such time as the necessary consents have been granted by the relevant authorities.

Average Sized Medium Density Lot = 431m²
Average Sized Low Density Lot = 616m²
Average Sized Low Density Lot Excl Stage 1 = 609m²

STAGE 1 SCHEDULE OF AREAS

Description	Area
Residential Lots (Lots 1 - 24)	1.8272ha
Bonding	1.2756ha
Existing Preschool	2110m²
TOTAL	3.3137ha

SCHEDULE OF AREAS

Description	Area
Residential Lots (Lots 25 - 579)	29.1511ha
Balance Lot (Lot 700)	37.0984ha
Right of Ways	2824m²
Recreation Reserves	3.4165ha
Drainage Reserves	2.0643ha
Roading (Lots 800 - 811)	12.4923ha
Commercial Area	4213m²
TOTAL	84.9512ha

Overall Residential Lots (Net Areas)

Lot Areas	No. of Lots	Total Areas
400m² - 499m²	77	3.3050ha
500m² - 599m²	177	9.5562ha
600m² - 699m²	234	14.6957ha
700m² - 799m²	74	5.3271ha
800m² & Over	17	1.4630ha
TOTALS	579	34.2650ha

Total Area: 88.2449ha

Comprised in: 268936, 523583, 550511

Fulton Hogan

DAVIE LOVELL·SMITH
PLANNING SURVEYING ENGINEERING

79 Cambridge Terrace P O Box 679 Christchurch 8140, New Zealand
Telephone: 03 379-0783 Fax: 03 379-0564 E-mail: dlsc@dls.co.nz

JOB TITLE :
Fulton Hogan Limited
Edward Street, Lincoln

SHEET TITLE :
Proposed Subdivision of Lot 200 DP441834, Lot 25 DP432078, Lot 2 DP364266 & Lot 27 DP432078

DRAWING STATUS
STAGING PLAN

SCALE : 1:2500@A1 1:5000@A3
DATE : 2 November 2011

CAD FILE : S17001 Staging Plan.dwg
REVISION : R6

DRAWING No : S.17001
SHEET No :

Appendix B: Site photographs

Photograph 1: Waste materials on the old waste pit

Photograph 2: Test pit 3 – edge of old waste pit

Photograph 3: Contents of test pit 3

Photograph 4: Waste pile at the north of the new waste pit

Photograph 5: Test pit 10 – new waste pit

Photograph 6: Pit present in northwest paddock

Photograph 7: Waste present in pit in northwest paddock

Appendix C: Test pit details

ID	Sampling depths and purpose	Soil Observations	Observations of contamination
TP1	Sampling at 0.5m and 1.5m	0.0-0.15m: grey gravelly sand 0.15m+: brown silty sand with orange inserts	Nil
TP2	Sampling at 0.5m and 1.5m	0.0-0.15m: dark grey stained gravelly sand 0.15-1.0m: brown silty sand with orange inserts 1.0m+: brown sand with orange inserts	Nil
TP3	Sampling at 0.5m, 0.5-1.5m and 2.2m, to determine extent of old waste pit	0.0-0.3m: topsoil 0.3-1.9m: waste in a sandy silt matrix 1.9m+: grey sand	Waste material – fabrics, plastics, glass, steel, farm equipment, bones, empty paint and unlabelled chemical containers
TP4	Sampling at 0.5m and 0.9m, to determine extent of old waste pit	0.0-0.5m: topsoil and waste 0.5-0.6m: brown silt 0.6m+: grey sand	Waste material – fabrics, plastics, glass, steel
TP5	Sampling at 0.5m and 1.2m, to determine extent of old waste pit	0.0-0.4m: topsoil and waste 0.4-1.0m: brown silt 1.0m+: grey sand	Waste material – fabrics, plastics, glass, steel
TP6	Sampling at 0.5m and 1.5m	0.0-0.6m: topsoil and some minor waste 0.6m+: blue grey sand, groundwater present at 1.5m	Waste – brick and glass fragments
TP7	Sampling at 0.5m and 1.5m	0.0-1.0m: topsoil with some minor waste 1.0m+: grey sand with a sulphur odour	Waste – glass and ceramic fragments Sulphur odour
TP8	Sampling at approximately 0.5m below base of swamp	Sample consisted of grey sandy silt	Nil
TP9	Sampling at 0.5m and 1.5m	0.0-0.5m: topsoil 0.5-1.0m: grey silt 1.0m+: grey sand and gravels	Some surface ash from scrub/tree fire
TP10	Sampling at 0.5m, 1.5m and 2.3m, to determine extent of new waste pit	0.0-0.3m: topsoil and waste 0.3-2.0m: waste in a brown silty sand matrix 2.0m+: grey sand	Waste material – fabrics, plastics, glass, steel, farm equipment, bones, empty paint and unlabelled chemical containers
TP11	Sampling at 0.5m and 1.5m, to determine extent of new waste pit	0.0-0.5m: topsoil and waste 0.5-0.8m: waste in a dark brown silty matrix 0.8-1.0m: light brown silt 1.0m+: grey sand	Waste material – fabrics, plastics, glass, steel

ID	Sampling depths and purpose	Soil Observations	Observations of contamination
TP12	Sampling, to determine extent of new waste pit	0.0-0.5m: topsoil and waste 0.5-0.8m: brown silt 0.8-1.0m: grey sand 1.0m+: grey sandy gravel	Waste material – fabrics, plastics, glass, steel
TP13	Sampling at 0.5m and 1.5m	0.0-0.3m: topsoil 0.3m+: brown sand	Nil
TP14	Sampling at 0.5m and 1.5m	0.0-0.2m: topsoil 0.2m+: brown to grey sand with orange inserts	Nil
TP15	Sampling at 0.5m and 1.5m	0.0-0.2m: topsoil 0.2m+: brown to grey sand with orange inserts	Nil
T1	Sampling, to determine location of sheep dip	0.0-0.5m: ash, building waste and gravels 0.5-1.5m: brown silt 1.5m+: brown sand	Ash present and building waste at surface – bricks, glass
T2	Sampling, to determine location of sheep dip	0.0-0.5m: ash, building waste and gravels 0.5-1.5m: brown silt 1.5m+: brown sand with orange inserts	Ash present and building waste at surface – bricks, glass

Appendix D: Soil sampling results

CENTRAL FARM SAMPLES

Sample ID	Assessment criteria		TP1	TP2	TP2	TP3	TP3 Nat	TP4	TP5	TP6	TP7	TP8	TP9	TP10	TP10	TP10 Nat	TP11	TP12	TP13	TP14	TP15	T1b	T1b	T2a	T2c	TS1	TS3	TS4	TS5	TS6	TS7	TS8	TS9
Depth of sample	Residential criteria	Recreational criteria	0.5m	0.5m	1.5m	1.5m	Natural ground	0.5m	0.5m	0.5m	0.5m	0.5m	0.5m	0.5m	1.5m	Natural ground	0.5m	0.5m	0.5m	0.5m	0.5m	0.5m	1.5m	0.5m	0.5m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m
Sampling date			12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	12-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12
Asbestos	0.001% by wieight [7]	0.001% by wieight [7]																															
Heavy metals																																	
Total Recoverable Arsenic	20 [1]	80 [1]	4	7	7	9	< 2	35	85	12	33	4	< 2	42	12	5	35	5	3	3	2	4	4	7	5	4 < 2		2 -		3	6 < 2		5
Total Recoverable Cadmium	3 [1]	400 [1]	< 0.10	< 0.10	< 0.10	0.54	< 0.10	0.39	0.24	0.16	0.44	< 0.10	< 0.10	1.86	0.38	< 0.10	1.19	0.17	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.45	0.12	0.15 -		0.15	< 0.10	< 0.10	0.22
Total Recoverable Chromium	NL (CrIII) [1] 460 (CrVI) [1]	NL (CrIII) [1] 2700 (CrVI) [1]	14	17	13	18	12	18	12	15	12	12	13	34	19	12	47	12	13	13	11	12	12	14	15	10	13	13 -		12	16	13	17
Total Recoverable Copper	NL [1]	NL [1]	5	96	21	52	9	107	9	42	200	11	6	103	34	7	123	14	5	4	4	9	8	12	7	22	11	7 -		12	12	5	11
Total Recoverable Lead	210 * [1]	880 * [1]	13.2	15.7	10	54	11.6	92	38	25	92	30	17.8	168	50	12.5	167	23	10.1	10.3	9.3	16.1	10.6	17.3	15	16.9	19.9	14.5 -		13.2	45	13.8	700
Total Recoverable Nickel	130 [2]	-	11	16	12	15	9	10	8	9	11	8	8	11	10	9	46	8	10	9	9	6	12	10	12	8	7	7 -		9	11	8	9
Total Recoverable Zinc	7,000 [3]	-	39	53	37	680	62	280	210	64	199	65	48	390	310	38	1,090	76	50	30	27	62	40	55	43	114	53	62 -		95	93	64	174
Polycyclic Aromatic Hydrocarbons																																	
Acenaphthene	170 [4]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Acenaphthylene	100 [4]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Anthracene	1700 [4]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Benzo[a]anthracene	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Benzo[a]pyrene (BAP)	10 [1]	40 [1]	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Benzo[b]fluoranthene + Benzo[j]fluora	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Benzo[g,h,i]perylene	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Benzo[k]fluoranthene	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Chrysene	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Dibenzo[a,h]anthracene	650 [4]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Fluoranthene	160 [4]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	0.04	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Fluorene	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Indeno(1,2,3-c,d)pyrene	-	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Naphthalene	63 [5]	-	< 0.14	-	-	< 0.14	< 0.14	< 0.13	< 0.14	< 0.18	-	-	-	< 0.14	< 0.14	< 0.14	< 0.13	< 0.14	-	-	-	-	-	-	-	-	-	-	-	< 0.14	-	-	
Phenanthrene	180 [4]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	0.03	< 0.03	< 0.03	0.13	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Pyrene	1600 [5]	-	< 0.03	-	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.04	-	-	-	0.04	< 0.03	< 0.03	< 0.03	< 0.03	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	
Total Petroleum Hydrocarbons																																	
C7 - C9	500	-	< 8	-	-	< 9	-	< 8	< 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 8	-	-	-	-	
C10 - C14	510	-	< 20	-	-	< 20	-	< 20	< 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 20	-	-	-	-	
C15 - C36	NA	-	< 40	-	-	< 40	-	< 40	< 40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 40	-	-	-	-	
Total hydrocarbons (C7 - C36)			< 70	-	-	< 70	-	< 70	< 70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 70	-	-	-	-	
BTEX in Soil by Headspace GC-MS																																	
Benzene	1 [4]	8 [4]	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.09	-	-	-	-	
Toluene	300 [4]	-	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.09	-	-	-	-	
Ethylbenzene	500 [4]	3,300 [4]	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.09	-	-	-	-	
m&p-Xylene	150 [4]	500 [4]	< 0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.18	-	-	-	-	
o-Xylene			< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.09	-	-	-	-	
Organochlorine Pesticides																																	
Aldrin	0.04 [6]		< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	0.094	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
alpha-BHC			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
beta-BHC			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
delta-BHC			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
gamma-BHC (Lindane)	139 [1]	1,370 [8]	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
cis-Chlordane			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
trans-Chlordane			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Total Chlordane [(cis+trans)*100/42]			< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	-	< 0.04	-	-	< 0.04	-	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	-	< 0.04	-	-	-
2,4'-DDD			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
4,4'-DDD	3 [6]		< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
2,4'-DDE			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
4,4'-DDE	2 [6]		< 0.011	< 0.010	< 0.011	0.027	< 0.010	0.015	< 0.011	< 0.011	< 0.010	< 0.011	-	0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
2,4'-DDT			< 0.011	< 0.010	< 0.011	0.026	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
4,4'-DDT	70 [1]	400 [1]	< 0.011	< 0.010	< 0.011	0.066	< 0.010	0.013	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Dieldrin	2.6 [1]	70 [1]	< 0.011	< 0.010	< 0.011	0.025	< 0.010	0.92	< 0.011	0.05	9.4	< 0.011	-	0.78	-	< 0.011	-	-	< 0.011	-	-	0.018	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Endosulfan I			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Endosulfan II			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Endosulfan sulphate			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Endrin	23 [6]		< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	0.026	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Endrin Aldehyde			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Endrin ketone			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Heptachlor			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Heptachlor epoxide			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Hexachlorobenzene			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Methoxychlor			< 0.011	< 0.010	< 0.011	< 0.011	< 0.010	< 0.010	< 0.011	< 0.011	< 0.010	< 0.011	-	< 0.011	-	< 0.011	-	-	< 0.011	-	-	< 0.011	< 0.010	< 0.011	< 0.010	< 0.011	< 0.010	-	-	< 0.010	-	-	-
Multiresidue Pesticides																																	
PESTICIDES THAT HAVE BEEN DETECTED IN SOILS ON SITE SHOWN ONLY. SEE LABORATORY SHEETS FOR FULL SUITE OF 142 PESTICIDES ANALYSED.																																	
Captan			-	-	-	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorothalonil			-	-	-	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDE	2 [6]		-	-	-	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4'-DDT			-	-	-	< 0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT			-	-	-	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total DDT Isomers	70 [1]	400 [1]	-	-	-	< 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlofenthion			-	-	-	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	2.6 [1]	70 [1]	-	-	-	< 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terbuthylazine			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

All results in mg/kg unless otherwise stated.

Indicates result exceeds **residential** guideline value

Indicates result exceeds **recreational** guideline value

* Inorganic lead

1 - Soil Contaminant Standard (Residential, 10% produce), National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (Ministry for the Environment 2012);

2 - Soil guideline values for the protection of human health (UK) (EA 2009); residentia

3 - Region 6 Human Health Medium - Specific Screening Levels (US EPA, 2002a)

4 - Guidelines for Assessing and Managing Contaminated Gasworks Sites in New Zealand (MfE, 1997); residential, with 50% produce

5 - Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (MfE 1999); surface soils, sand; residentia

6 - Supplemental Guidance for Developing Soil Screening Levels at Superfund Sites (US EPA, 2001);

7 - Guide to protocol for site investigation reports for subdivisions/developments in the Flat bush Area (Manukau City Council, 2000) (%

CENTRAL FARM SAMPLES

Sample ID	TS10	TS11	TS12	TS13	TS13	TS14	TS15	TS17	TS18	TS19	TS20	TS22	TS23	TS26	TS28	TS28 m	TS29 m	TS30 m	TS31	TS32	TS33	TS34	TS35	TS36	TS37	TS38	TS39	TS40	TS41
Depth of sample	0.0m	0.0m	0.0m	0.3m	0.0m	0.0m	0.0m	0.0m	0.3m	0.0m	0.3m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m
Sampling date	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12	20-Apr-12
Asbestos																													
Heavy metals																													
Total Recoverable Arsenic	7 -		4 -		8	5	12	2	2	22 #1	< 2	81	7	5	3	6	3	7	5	4	6	18	11	6	4	4	4	4 < 2	
Total Recoverable Cadmium	0.44 -		0.35 -		0.39 < 0.10		0.7 < 0.10		0.11	0.19 < 0.10		0.26	0.47	0.25 < 0.10		0.2	0.1	0.29	0.24	0.22	0.31	1	0.8	0.85	0.28	0.34	0.14	0.15 < 0.10	
Total Recoverable Chromium	17 -		22 -		15	15	15	11	10	15	12	13	16	17	11	13	12	12	17	13	12	16	15	17	12	14	13	11	11
Total Recoverable Copper	48 -		54 -		54	19	85	3	3	360	3	210	40	122	7	30	19	31	31	35	37	122	210	530	27	35	21	14	5
Total Recoverable Lead	470 -		220 -		87	38	106	10.2	11.8	54 #1	11.5	52	31	25	14.1	35	32	103	19.2	20	34	119	80	118	17.9	22	62	17.1	14.7
Total Recoverable Nickel	12 -		8 -		11	9	10	7	6	10	6	6	11	11	7	7	7	6	7	8	7	13	9	10	7	6	7	6	7
Total Recoverable Zinc	420 -		310 -		330	94	530	32	36	290	40	220	520	300	48	120	87	240	133	190	176	480	330	340	105	109	74	57	52
Polycyclic Aromatic Hydrocarbons																													
Acenaphthene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Acenaphthylene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Anthracene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Benzo[a]anthracene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Benzo[a]pyrene (BAP)	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Benzo[b]fluoranthene + Benzo[j]fluorai	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Benzo[k]fluoranthene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Chrysene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Dibenzo[a,h]anthracene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Fluoranthene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Fluorene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Indeno(1,2,3-c,d)pyrene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Naphthalene	-	-	-	-	-	-	-	-	< 0.14	-	-	-	-	-	< 0.14	< 3	-	-	-	-	-	-	-	-	-	-	-	-	
Phenanthrene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	0.6 -	-	-	-	-	-	-	-	-	-	-	-	-	
Pyrene	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	< 0.03	< 0.6	-	-	-	-	-	-	-	-	-	-	-	-	
Total Petroleum Hydrocarbons																													
C7 - C9	-	< 9	-	< 9	< 9	< 8	< 9	-	-	-	-	-	-	-	-	-	< 9	-	-	-	-	< 13	-	-	-	-	-	-	
C10 - C14	-	< 20	-	230	25 < 20	< 20	-	-	-	-	-	-	-	-	-	-	< 20	-	-	-	-	< 30	-	-	-	-	-	-	
C15 - C36	-	< 40	-	1,380	1,150 < 40		240 -	-	-	-	-	-	-	-	-	-	< 40	-	-	-	-		102 -	-	-	-	-	-	
Total hydrocarbons (C7 - C36)	-	< 70	-	1,620	1,170 < 70		240 -	-	-	-	-	-	-	-	-	-	< 70	-	-	-	-		102 -	-	-	-	-	-	
BTEX in Soil by Headspace GC-MS																													
Benzene	-	-	-		< 0.06	< 0.05	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Toluene	-	-	-		< 0.06	< 0.05	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ethylbenzene	-	-	-		< 0.06	< 0.05	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
m&p-Xylene	-	-	-		< 0.11	< 0.10	< 0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
o-Xylene	-	-	-		< 0.06	< 0.05	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Organochlorine Pesticides																													
Aldrin	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
alpha-BHC	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
beta-BHC	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
delta-BHC	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
cis-Chlordane	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
trans-Chlordane	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Total Chlordane [(cis+trans)*100/42]	-	-	-	-	-	-	-	-	-	< 0.04	-	-	< 0.04	-	-	-	-	-	-	-	-	< 0.04	-	< 0.04	< 0.04	< 0.04	-	-	< 0.04
2,4'-DDD	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
4,4'-DDD	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
2,4'-DDE	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
4,4'-DDE	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	0.036 -		0.019	0.019	0.014 -		-	0.022
2,4'-DDT	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
4,4'-DDT	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Dieldrin	-	-	-	-	-	-	-	-	-	0.073 -		-	0.036 -		-	-	-	-	-	-	-	0.34 -		1.3	0.026	0.046 -		-	< 0.010
Endosulfan I	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Endosulfan II	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Endosulfan sulphate	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Endrin	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Endrin Aldehyde	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Endrin ketone	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Heptachlor	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Heptachlor epoxide	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Hexachlorobenzene	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Methoxychlor	-	-	-	-	-	-	-	-	-	< 0.011	-	-	< 0.010	-	-	-	-	-	-	-	-	< 0.010	-	< 0.010	< 0.011	< 0.010	-	-	< 0.010
Multiresidue Pesticides																													
PESTICIDES THAT HAVE BEEN DETECTE																													
Captan	-	-	-	-	< 0.016	< 0.014	< 0.015	-	< 0.014	-	-	-	-	-	-	-	-	-	-	-	-	< 0.02	-	-	-	-	-	-	
Chlorothalonil	-	-	-	-	< 0.008	< 0.007	< 0.008	-	< 0.007	-	-	-	-	-	-	-	-	-	-	-	-	0.036 -		-	-	-	-	-	
4,4'-DDE	-	-	-	-	< 0.010	< 0.010	0.015 -		0.032 -		-	-	-	-	-	-	-	-	-	-	-	0.018 -		-	-	-	-	-	
2,4'-DDT	-	-	-	-	< 0.010	< 0.010	< 0.010	-	< 0.010	-	-	-	-	-	-	-	-	-	-	-	-	< 0.010	-	-	-	-	-	-	
4,4'-DDT	-	-	-	-	< 0.010	< 0.010	0.011 -		< 0.010	-	-	-	-	-	-	-	-	-	-	-	-	< 0.010	-	-	-	-	-	-	
Total DDT Isomers	-	-	-	-	< 0.06	< 0.06	< 0.06	-	< 0.06	-	-	-	-	-	-	-	-	-	-	-	-	< 0.06	-	-	-	-	-	-	
Dichlofenthion	-	-	-	-	< 0.008	< 0.007	0.015 -		< 0.007	-	-	-	-	-	-	-	-	-	-	-	-	< 0.010	-	-	-	-	-	-	
Dieldrin	-	-	-	-	0.47	0.145	0.21 -		< 0.010	-	-	-	-	-	-	-	-	-	-	-	-	0.61 -		-	-	-	-	-	
Terbuthylazine	-	-	-	-	< 0.004	0.018	0.004 -		< 0.004	-	-	-	-	-	-	-	-	-	-	-	-	< 0.005	-	-	-	-	-	-	

All results in mg/kg unless otherwise st

Indicates result exceeds **residential** gu

Indicates result exceeds **recreational** g

* Inorganic lead

1 - Soil Contaminant Standard (Resider

2 - Soil guideline values for the protecti

3 - Region 6 Human Health Medium - S

4 - Guidelines for Assessing and Manag

5 - Guidelines for Assessing and Manag

6 - Supplemental Guidance for Develop

7 - Guide to protocol for site investigati

OUTER PADDOCK SAMPLES

Sample ID	Assessment criteria		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S25	S26	S27	S28 0.0	S29	S30	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40	S41	S42
Depth of sample	Residential criteria	Recreational criteria	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.3m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m	0.0m
Sampling date			18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	18-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12	19-Apr-12
pH (pH units)			-	5.8	-	-	-	-	-	-	-	-	5.6	-	-	-	-	-	-	-	5.5	-	-	-	-	-	-	-	-	-	5.7	-	-	5.8	-	-	-	-	-	-	-	-	-	-	-
Heavy metals																																													
Total Recoverable Arsenic	20 [1]	80 [1]	< 2	< 2	< 2	2	< 2	< 2	3	3	< 2	< 2	< 2	3	< 2	3	< 2	2	< 2 #1	< 2	2	2	2	< 2	2	4	5	3	2	3	2	< 2	3	< 2	2	< 2	2	2	2	< 2	2	3	3	
Total Recoverable Cadmium	3 [1]	400 [1]	0.11	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.15	0.13	0.1	< 0.10	0.13	< 0.10	< 0.10	< 0.10	0.18	0.15	0.17	0.17	0.15	0.13	< 0.10	< 0.10	0.14	< 0.10	0.22	0.11	0.1	0.16	0.11	0.12	0.11	0.11	< 0.10	0.14	0.14	0.12	0.13	0.17	0.13	0.13	0.14	0.15
Total Recoverable Chromium	NL (CrIII) [1] 460 (CRVI) [1]	NL (CrIII) [1] 2700 (CRVI) [1]	13	12	14	13	14	15	14	16	14	14	12	14	14	19	12	11	11	12	16	11	12	13	15	14	12	18	17	14	16	13	12	15	14	13	14	13	16	13	12	10	11	12	16
Total Recoverable Copper	NL [1]	NL [1]	4	4	4	4	4	4	5	6	5	4	4	6	4	8	3	5	4	5	13	5	4	4	4	4	7	13	6	5	4	4	4	4	4	4	4	4	4	4	9	4	4	4	8
Total Recoverable Lead	210 * [1]	880 * [1]	11.2	10.8	12.1	11.1	10.9	11.1	10.5	12.9	11.4	11.2	10.9	12.7	11.5	15.3	10.9	12.6	10.9	11.9	15.6	12.1	11.9	11.1	12.6	10.7	11.8	18.1	22	12.4	13.4	10.9	11.3	16.5	10.7	10.5	11.4	12.4	11.5	11.1	14.6	12	12.6	11.3	18.1
Total Recoverable Nickel	130 [2]	-	8	9	8	8	9	10	10	11	8	7	7	8	7	13	7	6	6	6	8	5	6	7	7	8	9	9	11	9	9	7	7	8	7	7	8	7	9	7	8	6	7	6	10
Total Recoverable Zinc	7,000 [3]	-	44	45	47	44	44	46	34	49	48	43	46	48	42	53	37	42	38	40	62	40	37	40	40	44	44	100	59	46	46	40	42	47	51	35	39	35	37	39	58	40	37	31	70
Polycyclic Aromatic Hydrocarbons																																													
Acenaphthene	170 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	100 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	1700 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[a]anthracene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[a]pyrene (BAP)	10 [3]	40 [1]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[b]fluoranthene + Benzo[j]fluora	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[g,h,i]perylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo[k]fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo[a,h]anthracene	650 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	160 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-c,d)pyrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	63 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	180 [4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	1600 [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides	0.04 [6]																																												
Aldrin			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
alpha-BHC			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
beta-BHC			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
delta-BHC	139 [1]	1,370 [2]	< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
gamma-BHC (Lindane)			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
cis-Chlordane			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
trans-Chlordane			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Chlordane [(cis+trans)*100/42]			< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	-	-	< 0.04	-	< 0.04	< 0.04	< 0.04	-	-	< 0.04	< 0.04	< 0.04	-	< 0.04	-	< 0.04	-	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
2,4'-DDD	3 [6]		< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
4,4'-DDD			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	0.02	0.018	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	0.013	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
2,4'-DDE	2 [6]		< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
4,4'-DDE			< 0.011	-	< 0.011	< 0.011	< 0.011	0.012	-	0.015	< 0.010	0.039	-	< 0.010	1.1	0.025	0.37	0.45	0.47	-	-	0.06	-	0.049	0.034	< 0.010	-	-	< 0.010	0.011	0.074	-	0.23	-	0.075	-	0.179	< 0.010	0.09	0.029	< 0.010	0.037	0.124	0.85	< 0.010
2,4'-DDT	70 [1]	400 [1]	< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	0.084	< 0.010	0.018	0.018	0.021	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	0.014	-	< 0.011	-	0.017	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	0.017	0.189	< 0.010
4,4'-DDT	2.6 [1]	70 [1]	< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	0.27	< 0.010	0.111	0.08	0.094	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	0.012	-	0.054	-	< 0.011	-	0.017	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	0.189	< 0.010
Dieldrin			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endosulfan I			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endosulfan II			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endosulfan sulphate	23 [6]		< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endrin			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endrin Aldehyde			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Endrin ketone			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Heptachlor			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Heptachlor epoxide			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Hexachlorobenzene			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Methoxychlor			< 0.011	-	< 0.011	< 0.011	< 0.011	< 0.011	-	< 0.011	< 0.010	< 0.011	-	< 0.010	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	-	-	< 0.010	-	< 0.010	< 0.010	< 0.010	-	-	< 0.010	< 0.011	< 0.011	-	< 0.011	-	< 0.011	-	< 0.010	< 0.010	< 0.011	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Multiresidue Pesticides Suite	**AVE BEEN DETECTED IN SOILS ON SITE SHOWN ONLY. SEE LABORATORY SHEETS FOR FULL SUITE OF 142 PESTICIDES ANALYSED.**																																											
Captan			-	< 0.015	-	-	-	-	< 0.013	-	-	-	< 0.014	-	-	-	-	-	-	< 0.014	< 0.015	-	< 0.015	-	-	-	-	0.051	-	-	-	< 0.015	-	< 0.015	-	< 0.015	-	-	-	-	-	-	-	-	-
Chlorothalonil			-	< 0.008	-	-	-	-	< 0.007	-	-	-	< 0.007	-	-	-	-	-	-	< 0.007	< 0.008	-	< 0.008	-	-	-	-	< 0.007	-	-	-	< 0.008	-	< 0.008	-	< 0.008	-	-	-	-	-	-	-	-	-
4,4'-DDE	2 [6]		-	< 0.010	-	-	-	-	< 0.010	-	-	-	0.049	-	-	-	-	-	-	0.092	< 0.010	-	0.086	-	-	-	-	0.011	-	-	-	< 0.010	-	0.24	-	0.195	-	-	-	-	-	-	-	-	-
2,4'-DDT			-	< 0.010	-	-	-	-	< 0.010	-	-	-	< 0.010	-	-	-	-	-	-	< 0.011	< 0.010	-	< 0.011	-	-	-	-	< 0.010	-	-	-	< 0.010	-	0.011	-	< 0.011	-	-	-	-	-	-	-	-	-
4,4'-DDT			-	< 0.010	-	-	-	-	< 0.010	-	-	-	< 0.010	-	-	-	-	-	-	< 0.011	< 0.010	-	< 0.011	-	-	-	-	< 0.010	-	-	-	< 0.010	-	0.045	-	0.022	-	-	-	-	-	-	-	-	-
Total DDT Isomers	70 [1]	400 [1]	-	< 0.06	-	-	-	-	< 0.06	-	-	-	< 0.06	-	-	-	-	-	-	0.09	< 0.06	-	0.09	-	-	-	-	< 0.06	-	-	-	< 0.06	-	0.3	-	0.22	-	-	-	-	-	-	-	-	-
Dichlofenthion			-	< 0.008	-	-	-	-	< 0.007	-	-	-	< 0.007	-	-	-	-	-	-	< 0.007	< 0.008	-	< 0.008	-	-	-	-	< 0.007	-	-	-	< 0.008	-	< 0.008	-	< 0.008	-	-	-	-	-	-	-	-	-
Dieldrin	2.6 [1]	70 [1]	-	< 0.010	-	-	-	-	< 0.010	-	-	-	< 0.010	-	-	-	-	-	-	< 0.011	< 0.010	-	< 0.011	-	-	-	-	< 0.010	-	-	-	< 0.010	-	< 0.011	-	< 0.011	-	-	-	-	-	-	-	-	-
Terbuthylazine			-	< 0.004	-	-	-	-	< 0.004	-	-	-	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	-	< 0.004	-	-	-	-	< 0.004	-	-	-	< 0.004	-	< 0.004	-	< 0.004	-	-	-	-	-	-	-	-	-

All results in mg/kg unless otherwise stated.

Indicates result exceeds **residential** guideline value

Indicates result exceeds **recreational** guideline value

* Inorganic lead

1 - Soil Contaminant Standard (Residential, 10% produce), National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (Ministry for the Environment 2012);

2 - Soil guideline values for the protection of human health (UK) (EA 2009); residential

3 - Region 6 Human Health Medium - Specific Screening Levels (US EPA, 2002a)

4 - Guidelines for Assessing and Managing Contaminated Gasworks Sites in New Zealand (MfE, 1997); residential, with 50% produce

5 - Guidelines for Assessing and Managing Petroleum Hydrocarbon Contaminated Sites in New Zealand (MfE 1999); surface soils, sand; residential

Appendix E: Laboratory transcripts

Hill Laboratories
BETTER TESTING BETTER RESULTS

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:	Tonkin & Taylor	**Lab No:**	997765	SPv2
Contact:	Lucy Hine	**Date Registered:**	13-Apr-2012	
	C/- Tonkin & Taylor	**Date Reported:**	01-May-2012	
	PO Box 13055	**Quote No:**		
	CHRISTCHURCH 8141	**Order No:**	53036.001	
		Client Reference:	53036.001	
		Submitted By:	Wendy Dean	

Sample Type: Soil

Sample Name:		TP1 0.5 12-Apr-2012	TP2 0.5 12-Apr-2012	TP2 1.5 12-Apr-2012	T1b 0.5 12-Apr-2012	T1b 1.5 12-Apr-2012
Lab Number:		997765.1	997765.3	997765.4	997765.7	997765.8
Individual Tests						
Dry Matter	g/100g as rcvd	82	-	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	4	7	7	4	4
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	14	17	13	12	12
Total Recoverable Copper	mg/kg dry wt	5	96	21	9	8
Total Recoverable Lead	mg/kg dry wt	13.2	15.7	10.0	16.1	10.6
Total Recoverable Nickel	mg/kg dry wt	11	16	12	6	12
Total Recoverable Zinc	mg/kg dry wt	39	53	37	62	40
BTEX in Soil by Headspace GC-MS						
Benzene	mg/kg dry wt	< 0.05	-	-	-	-
Toluene	mg/kg dry wt	< 0.05	-	-	-	-
Ethylbenzene	mg/kg dry wt	< 0.05	-	-	-	-
m&p-Xylene	mg/kg dry wt	< 0.10	-	-	-	-
o-Xylene	mg/kg dry wt	< 0.05	-	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
alpha-BHC	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
beta-BHC	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
delta-BHC	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
4,4'-DDE	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
2,4'-DDT	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
4,4'-DDT	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Dieldrin	mg/kg dry wt	< 0.011	< 0.010	< 0.011	0.018	< 0.010
Endosulfan I	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Endosulfan II	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Endrin	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Endrin Aldehyde	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010

Sample Type: Soil						
Sample Name:		TP1 0.5 12-Apr-2012	TP2 0.5 12-Apr-2012	TP2 1.5 12-Apr-2012	T1b 0.5 12-Apr-2012	T1b 1.5 12-Apr-2012
Lab Number:		997765.1	997765.3	997765.4	997765.7	997765.8
Organochlorine Pesticides Screening in Soil						
Endrin ketone	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Heptachlor	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Methoxychlor	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.011	< 0.010
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.03	-	-	-	-
Acenaphthylene	mg/kg dry wt	< 0.03	-	-	-	-
Anthracene	mg/kg dry wt	< 0.03	-	-	-	-
Benzo[a]anthracene	mg/kg dry wt	< 0.03	-	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.03	-	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.03	-	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.03	-	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	< 0.03	-	-	-	-
Chrysene	mg/kg dry wt	< 0.03	-	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.03	-	-	-	-
Fluoranthene	mg/kg dry wt	< 0.03	-	-	-	-
Fluorene	mg/kg dry wt	< 0.03	-	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.03	-	-	-	-
Naphthalene	mg/kg dry wt	< 0.14	-	-	-	-
Phenanthrene	mg/kg dry wt	< 0.03	-	-	-	-
Pyrene	mg/kg dry wt	< 0.03	-	-	-	-
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	< 8	-	-	-	-
C10 - C14	mg/kg dry wt	< 20	-	-	-	-
C15 - C36	mg/kg dry wt	< 40	-	-	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	< 70	-	-	-	-

Sample Name:		T2a 0.5 12-Apr-2012	T2c 0.5 12-Apr-2012	TP3 1.5 12-Apr-2012	TP3 Nat 12-Apr-2012	TP4 0.5 12-Apr-2012
Lab Number:		997765.11	997765.15	997765.18	997765.19	997765.20
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	81	80	83
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	7	5	9	< 2	35
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	0.54	< 0.10	0.39
Total Recoverable Chromium	mg/kg dry wt	14	15	18	12	18
Total Recoverable Copper	mg/kg dry wt	12	7	52	9	107
Total Recoverable Lead	mg/kg dry wt	17.3	15.0	54	11.6	92
Total Recoverable Nickel	mg/kg dry wt	10	12	15	9	10
Total Recoverable Zinc	mg/kg dry wt	55	43	680	62	280
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	< 0.011	< 0.010	0.027	< 0.010	0.015

Sample Type: Soil						
Sample Name:		T2a 0.5 12-Apr-2012	T2c 0.5 12-Apr-2012	TP3 1.5 12-Apr-2012	TP3 Nat 12-Apr-2012	TP4 0.5 12-Apr-2012
Lab Number:		997765.11	997765.15	997765.18	997765.19	997765.20
Organochlorine Pesticides Screening in Soil						
2,4'-DDT	mg/kg dry wt	< 0.011	< 0.010	0.026	< 0.010	< 0.010
4,4'-DDT	mg/kg dry wt	< 0.011	< 0.010	0.066	< 0.010	0.013
Dieldrin	mg/kg dry wt	< 0.011	< 0.010	0.025	< 0.010	0.92
Endosulfan I	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Endrin Aldehyde	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.011	< 0.010	< 0.011	< 0.010	< 0.010
Organonitro&phosphorus Pesticides Screen in Soil by GCMS						
Acetochlor	mg/kg	-	-	< 0.06	-	-
Alachlor	mg/kg	-	-	< 0.05	-	-
Atrazine	mg/kg	-	-	< 0.06	-	-
Atrazine-desethyl	mg/kg	-	-	< 0.06	-	-
Atrazine-desisopropyl	mg/kg	-	-	< 0.12	-	-
Azaconazole	mg/kg	-	-	< 0.03	-	-
Azinphos-methyl	mg/kg	-	-	< 0.12	-	-
Benalaxyl	mg/kg	-	-	< 0.03	-	-
Bitertanol	mg/kg	-	-	< 0.12	-	-
Bromacil	mg/kg	-	-	< 0.06	-	-
Bromopropylate	mg/kg	-	-	< 0.06	-	-
Butachlor	mg/kg	-	-	< 0.06	-	-
Captan	mg/kg	-	-	< 0.12	-	-
Carbaryl	mg/kg	-	-	< 0.06	-	-
Carbofuran	mg/kg	-	-	< 0.06	-	-
Chlorfluazuron	mg/kg	-	-	< 0.06	-	-
Chlorothalonil	mg/kg	-	-	< 0.06	-	-
Chlorpyrifos	mg/kg	-	-	< 0.06	-	-
Chlorpyrifos-methyl	mg/kg	-	-	< 0.06	-	-
Chlortoluron	mg/kg	-	-	< 0.12	-	-
Cyanazine	mg/kg	-	-	< 0.06	-	-
Cyfluthrin	mg/kg	-	-	< 0.06	-	-
Cyhalothrin	mg/kg	-	-	< 0.06	-	-
Cypermethrin	mg/kg	-	-	< 0.12	-	-
Deltamethrin (Tralomethrin)	mg/kg	-	-	< 0.06	-	-
Diazinon	mg/kg	-	-	< 0.03	-	-
Dichlofluanid	mg/kg	-	-	< 0.06	-	-
Dichloran	mg/kg	-	-	< 0.2	-	-
Dichlorvos	mg/kg	-	-	< 0.09	-	-
Difenoconazole	mg/kg	-	-	< 0.09	-	-
Dimethoate	mg/kg	-	-	< 0.12	-	-
Diphenylamine	mg/kg	-	-	< 0.12	-	-
Diuron	mg/kg	-	-	< 0.06	-	-
Fenpropimorph	mg/kg	-	-	< 0.06	-	-
Fluazifop-butyl	mg/kg	-	-	< 0.06	-	-
Fluometuron	mg/kg	-	-	< 0.06	-	-
Flusilazole	mg/kg	-	-	< 0.06	-	-
Fluvalinate	mg/kg	-	-	< 0.05	-	-
Furalaxyl	mg/kg	-	-	< 0.03	-	-
Haloxyfop-methyl	mg/kg	-	-	< 0.06	-	-
Hexaconazole	mg/kg	-	-	< 0.06	-	-

Sample Type: Soil						
Sample Name:		T2a 0.5 12-Apr-2012	T2c 0.5 12-Apr-2012	TP3 1.5 12-Apr-2012	TP3 Nat 12-Apr-2012	TP4 0.5 12-Apr-2012
Lab Number:		997765.11	997765.15	997765.18	997765.19	997765.20
Organonitro&phosphorus Pesticides Screen in Soil by GCMS						
Hexazinone	mg/kg	-	-	< 0.03	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.3	-	-
Iprodione	mg/kg	-	-	< 0.06	-	-
Kresoxim-methyl	mg/kg	-	-	< 0.03	-	-
Linuron	mg/kg	-	-	< 0.06	-	-
Malathion	mg/kg	-	-	< 0.06	-	-
Metalaxyl (Mefenoxam)	mg/kg	-	-	< 0.06	-	-
Methamidophos	mg/kg	-	-	< 0.3	-	-
Metolachlor	mg/kg	-	-	< 0.05	-	-
Metribuzin	mg/kg	-	-	< 0.06	-	-
Molinate	mg/kg	-	-	< 0.12	-	-
Myclobutanil	mg/kg	-	-	< 0.06	-	-
Naled	mg/kg	-	-	< 0.3	-	-
Norflurazon	mg/kg	-	-	< 0.12	-	-
Oxadiazon	mg/kg	-	-	< 0.06	-	-
Oxyfluorfen	mg/kg	-	-	< 0.03	-	-
Paclobutrazol	mg/kg	-	-	< 0.06	-	-
Parathion-ethyl	mg/kg	-	-	< 0.06	-	-
Parathion-methyl	mg/kg	-	-	< 0.06	-	-
Pendimethalin	mg/kg	-	-	< 0.06	-	-
Permethrin	mg/kg	-	-	< 0.02	-	-
Pirimicarb	mg/kg	-	-	< 0.06	-	-
Pirimiphos-methyl	mg/kg	-	-	< 0.06	-	-
Prochloraz	mg/kg	-	-	< 0.3	-	-
Procymidone	mg/kg	-	-	< 0.06	-	-
Prometryn	mg/kg	-	-	< 0.03	-	-
Propachlor	mg/kg	-	-	< 0.06	-	-
Propanil	mg/kg	-	-	< 0.2	-	-
Propazine	mg/kg	-	-	< 0.03	-	-
Propiconazole	mg/kg	-	-	< 0.05	-	-
Pyriproxyfen	mg/kg	-	-	< 0.06	-	-
Quizalofop-ethyl	mg/kg	-	-	< 0.06	-	-
Simazine	mg/kg	-	-	< 0.06	-	-
Simetryn	mg/kg	-	-	< 0.06	-	-
Sulfentrazone	mg/kg	-	-	< 0.3	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.12	-	-
Tebuconazole	mg/kg	-	-	< 0.06	-	-
Terbacil	mg/kg	-	-	< 0.06	-	-
Terbufos	mg/kg	-	-	< 0.06	-	-
Terbumeton	mg/kg	-	-	< 0.06	-	-
Terbuthylazine	mg/kg	-	-	< 0.03	-	-
Terbuthylazine-desethyl	mg/kg	-	-	< 0.06	-	-
Terbutryn	mg/kg	-	-	< 0.06	-	-
Thiabendazole	mg/kg	-	-	< 0.3	-	-
Thiobencarb	mg/kg	-	-	< 0.06	-	-
Tolylfluanid	mg/kg	-	-	< 0.03	-	-
Triazophos	mg/kg	-	-	< 0.06	-	-
Trifluralin	mg/kg	-	-	< 0.06	-	-
Vinclozolin	mg/kg	-	-	< 0.06	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Acenaphthylene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Anthracene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03

Sample Type: Soil						
Sample Name:		T2a 0.5 12-Apr-2012	T2c 0.5 12-Apr-2012	TP3 1.5 12-Apr-2012	TP3 Nat 12-Apr-2012	TP4 0.5 12-Apr-2012
Lab Number:		997765.11	997765.15	997765.18	997765.19	997765.20
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Benzo[a]anthracene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Benzo[g,h,i]perylene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Benzo[k]fluoranthene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Chrysene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Dibenzo[a,h]anthracene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Fluoranthene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Fluorene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Naphthalene	mg/kg dry wt	-	-	< 0.14	< 0.14	< 0.13
Phenanthrene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Pyrene	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	-	-	< 9	-	< 8
C10 - C14	mg/kg dry wt	-	-	< 20	-	< 20
C15 - C36	mg/kg dry wt	-	-	< 40	-	< 40
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	-	< 70	-	< 70

Sample Name:		TP5 0.5 12-Apr-2012	TP6 0.5 12-Apr-2012	TP7 0.5 12-Apr-2012	TP8 12-Apr-2012	TP9 0.5 12-Apr-2012
Lab Number:		997765.22	997765.24	997765.26	997765.28	997765.29
Individual Tests						
Dry Matter	g/100g as rcvd	80	63	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	85	12	33	4	< 2
Total Recoverable Cadmium	mg/kg dry wt	0.24	0.16	0.44	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	12	15	12	12	13
Total Recoverable Copper	mg/kg dry wt	9	42	200	11	6
Total Recoverable Lead	mg/kg dry wt	38	25	92	30	17.8
Total Recoverable Nickel	mg/kg dry wt	8	9	11	8	8
Total Recoverable Zinc	mg/kg dry wt	210	64	199	65	48
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	< 0.011	0.094	< 0.011	-
alpha-BHC	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
beta-BHC	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
delta-BHC	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
cis-Chlordane	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
trans-Chlordane	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	< 0.04	< 0.04	-
2,4'-DDD	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
4,4'-DDD	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
2,4'-DDE	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
4,4'-DDE	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
2,4'-DDT	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
4,4'-DDT	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Dieldrin	mg/kg dry wt	< 0.011	0.050	9.4	< 0.011	-
Endosulfan I	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Endosulfan II	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Endrin	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Endrin ketone	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-

Sample Type: Soil						
Sample Name:		TP5 0.5 12-Apr-2012	TP6 0.5 12-Apr-2012	TP7 0.5 12-Apr-2012	TP8 12-Apr-2012	TP9 0.5 12-Apr-2012
Lab Number:		997765.22	997765.24	997765.26	997765.28	997765.29
Organochlorine Pesticides Screening in Soil						
Heptachlor	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Methoxychlor	mg/kg dry wt	< 0.011	< 0.011	< 0.010	< 0.011	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Acenaphthylene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Anthracene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Benzo[a]anthracene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Chrysene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Fluoranthene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Fluorene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Naphthalene	mg/kg dry wt	< 0.14	< 0.18	-	-	-
Phenanthrene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Pyrene	mg/kg dry wt	< 0.03	< 0.04	-	-	-
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	< 9	-	-	-	-
C10 - C14	mg/kg dry wt	< 20	-	-	-	-
C15 - C36	mg/kg dry wt	< 40	-	-	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	< 70	-	-	-	-

Sample Name:		TP10 0.5 12-Apr-2012	TP10 1.5 12-Apr-2012	TP10 Nat 12-Apr-2012	TP11 0.5 12-Apr-2012	TP12 0.5 12-Apr-2012
Lab Number:		997765.31	997765.32	997765.33	997765.34	997765.36
Individual Tests						
Dry Matter	g/100g as rcvd	80	76	85	81	87
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	42	12	5	35	5
Total Recoverable Cadmium	mg/kg dry wt	1.86	0.38	< 0.10	1.19	0.17
Total Recoverable Chromium	mg/kg dry wt	34	19	12	47	12
Total Recoverable Copper	mg/kg dry wt	103	34	7	123	14
Total Recoverable Lead	mg/kg dry wt	168	50	12.5	167	23
Total Recoverable Nickel	mg/kg dry wt	11	10	9	46	8
Total Recoverable Zinc	mg/kg dry wt	390	310	38	1,090	76
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	< 0.011	-	-
alpha-BHC	mg/kg dry wt	< 0.011	-	< 0.011	-	-
beta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	-	-
delta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	< 0.011	-	-
cis-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	-	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	< 0.04	-	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	-	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	-	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.011	-	-
4,4'-DDE	mg/kg dry wt	0.011	-	< 0.011	-	-
2,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.011	-	-

Sample Type: Soil						
Sample Name:		TP10 0.5 12-Apr-2012	TP10 1.5 12-Apr-2012	TP10 Nat 12-Apr-2012	TP11 0.5 12-Apr-2012	TP12 0.5 12-Apr-2012
Lab Number:		997765.31	997765.32	997765.33	997765.34	997765.36
Organochlorine Pesticides Screening in Soil						
4,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Dieldrin	mg/kg dry wt	0.78	-	< 0.011	-	-
Endosulfan I	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Endosulfan II	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Endrin	mg/kg dry wt	0.026	-	< 0.011	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Endrin ketone	mg/kg dry wt	0.011	-	< 0.011	-	-
Heptachlor	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Methoxychlor	mg/kg dry wt	< 0.011	-	< 0.011	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo[a]anthracene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo[k]fluoranthene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	mg/kg dry wt	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Naphthalene	mg/kg dry wt	< 0.14	< 0.14	< 0.13	< 0.14	< 0.13
Phenanthrene	mg/kg dry wt	0.03	< 0.03	< 0.03	0.13	< 0.03
Pyrene	mg/kg dry wt	0.04	< 0.03	< 0.03	< 0.03	< 0.03

Sample Name:		TP13 0.5 12-Apr-2012	TP14 0.5 12-Apr-2012	TP15 0.5 12-Apr-2012		
Lab Number:		997765.38	997765.40	997765.42		
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	3	2	-	-
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	-	-
Total Recoverable Chromium	mg/kg dry wt	13	13	11	-	-
Total Recoverable Copper	mg/kg dry wt	5	4	4	-	-
Total Recoverable Lead	mg/kg dry wt	10.1	10.3	9.3	-	-
Total Recoverable Nickel	mg/kg dry wt	10	9	9	-	-
Total Recoverable Zinc	mg/kg dry wt	50	30	27	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	-	-	-
alpha-BHC	mg/kg dry wt	< 0.011	-	-	-	-
beta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
delta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDE	mg/kg dry wt	< 0.011	-	-	-	-

Sample Type: Soil						
Sample Name:		TP13 0.5 12-Apr-2012	TP14 0.5 12-Apr-2012	TP15 0.5 12-Apr-2012		
Lab Number:		997765.38	997765.40	997765.42		
Organochlorine Pesticides Screening in Soil						
2,4'-DDT	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDT	mg/kg dry wt	< 0.011	-	-	-	-
Dieldrin	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan I	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan II	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	-	-	-
Endrin	mg/kg dry wt	< 0.011	-	-	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	-	-	-
Endrin ketone	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	-	-	-
Methoxychlor	mg/kg dry wt	< 0.011	-	-	-	-

Analyst's Comments

Appendix No.1 - Asbestos Report - 997765

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. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1, 3-4, 7-8, 11, 15, 18-20, 22, 24, 26, 28-29, 31-34, 36, 38, 40, 42
TPH Oil Industry Profile + PAHscreen	Sonication in DCM extraction, SPE cleanup, GC-FID & GC-MS analysis. Tested on as received sample. US EPA 8015B/MfE Petroleum Industry Guidelines	-	18, 20, 22
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	1, 3-4, 7-8, 11, 15, 18-20, 22, 24, 26, 28-29, 31-34, 36, 38, 40, 42
BTEX in Soil by Headspace GC-MS	Solvent extraction, Headspace GC-MS analysis US EPA 8260B. Tested on as received sample	-	1
Organochlorine/nitro&phosphorus Pest.s Screen in Soils, GCMS	Sonication extraction, Dilution cleanup, GC-MS analysis. Tested on as received sample	-	18
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	-	1, 3-4, 7-8, 11, 15, 19-20, 22, 24, 26, 28, 31, 33, 38
Polycyclic Aromatic Hydrocarbons Screening in Soil	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis (modified US EPA 8270). Tested on as received sample.	-	1, 19, 24, 31-34, 36
Total Petroleum Hydrocarbons in Soil	Sonication extraction in DCM, Silica cleanup, GC-FID analysis US EPA 8015B/MfE Petroleum Industry Guidelines. Tested on as received sample	-	1
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	1, 18-20, 22, 24, 31-34, 36
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1, 3-4, 7-8, 11, 15, 18-20, 22, 24, 26, 28-29, 31-34, 36, 38, 40, 42

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Asbestos	150-200g, sealed plastic bag. Polarised Light Microscopy and dispersion staining techniques. Subcontracted to Dowdell & Associates, 4 Cain Road, Penrose, Auckland. AS 4964 (2004) - Method for the Qualitative / Semi-Quantitative Identification of Asbestos in Bulk Samples.	-	18, 20, 32

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

DOWDELL & ASSOCIATES LTD

OCCUPATIONAL HEALTH ANALYSTS & CONSULTANTS

4 Cain Rd, Penrose, PO Box 112-017 Auckland 1642, Phone (09) 5260-246. Fax (09) 5795-389.

18th April 2012

Hill Laboratories
Private Bag 3205
Hamilton

Dear Sir/Madam,

Re: Bulk Fibre Analysis -

Sampled by	: Client
Date Samples Received	: 18th April 2012
Laboratory No.	: 27430
Location/Description	: 3 x soil samples for asbestos ID (P/O: 129128)
Method	: AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.

The following samples were examined using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including Dispersion Staining Techniques.
The following results apply to the samples as received.

Reg No: 94127 **Description:** Soil 997765/18
Sample Size: 82.67g wet weight / 63.97g dry
Result: Asbestos **NOT** detected

Reg No: 94128 **Description:** Soil 997765/20
Sample Size: 93.84g wet weight / 73.96g dry
Result: Asbestos **NOT** detected

Reg No: 94129 **Description:** Soil 997765/32
Sample Size: 64.67g wet weight / 44.70g dry
Result: Asbestos **NOT** detected

Yours Faithfully
DOWDELL & ASSOCIATES LTD

I.B. Murgatroyd BSc.
Consultant

Q.E. Dowdell NZCS MNZMS
Director

586

NOTES:

- This report must not be altered, or reproduced except in full.

- Sample weights are defined as;

a) (Wet Weight) – Weight of Sample that has been Analysed.

b) (Dry Basis) - The combusted dry weight of the Analysed Sample.

- New Zealand has no specific guidelines with regard to asbestos content in soils. However, we recommend that the Australian Government's enHealth Council's Document 'Management of Asbestos in the Non-Occupational Environment' – 2005 and the (DOH) WA's 'Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia – May 2009 be consulted.

Hill Laboratories
BETTER TESTING BETTER RESULTS

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:	Tonkin & Taylor	**Lab No:**	999240	SPv1
Contact:	Lucy Hine	**Date Registered:**	19-Apr-2012	
	C/- Tonkin & Taylor	**Date Reported:**	02-May-2012	
	PO Box 13055	**Quote No:**		
	CHRISTCHURCH 8141	**Order No:**	53036.001	
		Client Reference:	53036.001 Grid	
		Submitted By:	Wendy Dean	

Sample Type: Soil

Sample Name:		S28 0.0 18-Apr-2012	S31 0.0 18-Apr-2012	S30 0.0 18-Apr-2012	S35 0.0 18-Apr-2012	S29 0.0 18-Apr-2012
Lab Number:		999240.1	999240.2	999240.3	999240.4	999240.5
Individual Tests						
Dry Matter	g/100g as rcvd	-	83	-	-	82
pH*	pH Units	-	5.8	-	-	5.7
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	3	< 2	2	2
Total Recoverable Cadmium	mg/kg dry wt	0.16	0.11	0.12	0.14	0.11
Total Recoverable Chromium	mg/kg dry wt	16	15	12	13	13
Total Recoverable Copper	mg/kg dry wt	4	4	4	4	4
Total Recoverable Lead	mg/kg dry wt	13.4	16.5	11.3	12.4	10.9
Total Recoverable Nickel	mg/kg dry wt	9	8	7	7	7
Total Recoverable Zinc	mg/kg dry wt	46	47	42	35	40
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Alachlor	mg/kg dry wt	-	< 0.006	-	-	< 0.006
Aldrin	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Atrazine	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Atrazine-desethyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Atrazine-desisopropyl	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Azaconazole	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Azinphos-methyl	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Benalaxyl	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Bendiocarb	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Benodanil	mg/kg dry wt	-	< 0.015	-	-	< 0.015
alpha-BHC	mg/kg dry wt	-	< 0.011	-	-	< 0.010
beta-BHC	mg/kg dry wt	-	< 0.011	-	-	< 0.010
delta-BHC	mg/kg dry wt	-	< 0.011	-	-	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Bifenthrin	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Bitertanol	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Bromacil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Bromophos-ethyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Bromopropylate	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Bupirimate	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Buprofezin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Butachlor	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Captafol	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Captan	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Carbaryl	mg/kg dry wt	-	< 0.008	-	-	< 0.008

Sample Type: Soil						
Sample Name:		S28 0.0 18-Apr-2012	S31 0.0 18-Apr-2012	S30 0.0 18-Apr-2012	S35 0.0 18-Apr-2012	S29 0.0 18-Apr-2012
Lab Number:		999240.1	999240.2	999240.3	999240.4	999240.5
Multiresidue Pesticides in Soil samples by GCMS						
Carbofenothion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Carbofuran	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Carboxin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
cis-Chlordane	mg/kg dry wt	-	< 0.011	-	-	< 0.010
trans-Chlordane	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Chlorfenvinphos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Chlorfluazuron	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Chlorothalonil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Chlorpropham	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Chlorpyrifos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Chlorpyrifos-methyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Chlortoluron	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Chlozolinate	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Coumaphos	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Cyanazine	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Cyfluthrin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Cyhalothrin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Cypermethrin	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Cyproconazole	mg/kg dry wt	-	< 0.011	-	-	< 0.011
Cyprodinil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
2,4'-DDD	mg/kg dry wt	-	< 0.011	-	-	< 0.010
4,4'-DDD	mg/kg dry wt	-	0.012	-	-	< 0.010
2,4'-DDE	mg/kg dry wt	-	< 0.011	-	-	< 0.010
4,4'-DDE	mg/kg dry wt	-	0.24	-	-	< 0.010
2,4'-DDT	mg/kg dry wt	-	0.011	-	-	< 0.010
4,4'-DDT	mg/kg dry wt	-	0.045	-	-	< 0.010
Total DDT Isomers	mg/kg dry wt	-	0.30	-	-	< 0.06
Deltamethrin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Demeton-S-methyl	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Diazinon	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Dichlobenil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Dichlofenthion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Dichlofluanid	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Dichloran	mg/kg dry wt	-	< 0.03	-	-	< 0.03
Dichlorvos	mg/kg dry wt	-	< 0.010	-	-	< 0.010
Dicofol	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Dicrotophos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Dieldrin	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Difenoconazole	mg/kg dry wt	-	< 0.011	-	-	< 0.011
Dimethoate	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Dinocap	mg/kg dry wt	-	< 0.08	-	-	< 0.09
Diphenylamine	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Disulfoton	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Diuron	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Endosulfan I	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Endosulfan II	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Endosulfan sulphate	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Endrin	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Endrin Aldehyde	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Endrin ketone	mg/kg dry wt	-	< 0.011	-	-	< 0.010
EPN	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Esfenvalerate	mg/kg dry wt	-	< 0.011	-	-	< 0.011
Ethion	mg/kg dry wt	-	< 0.008	-	-	< 0.008

Sample Type: Soil						
Sample Name:		S28 0.0 18-Apr-2012	S31 0.0 18-Apr-2012	S30 0.0 18-Apr-2012	S35 0.0 18-Apr-2012	S29 0.0 18-Apr-2012
Lab Number:		999240.1	999240.2	999240.3	999240.4	999240.5
Multiresidue Pesticides in Soil samples by GCMS						
Etrimfos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Famphur	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenamiphos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenarimol	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenitrothion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenpropathrin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenpropimorph	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fensulfothion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenthion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fenvalerate	mg/kg dry wt	-	< 0.011	-	-	< 0.011
Fluazifop-butyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fluometuron	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Flusilazole	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Fluvalinate	mg/kg dry wt	-	< 0.006	-	-	< 0.006
Folpet	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Furalaxyl	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Haloxyfop-methyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Heptachlor	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Heptachlor epoxide	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Hexachlorobenzene	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Hexaconazole	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Hexazinone	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Hexythiazox	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Imazalil	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Indoxacarb	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Iodofenphos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Iprodione	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Isazophos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Isofenphos	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Kresoxim-methyl	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Leptophos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Linuron	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Malathion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Metalaxyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Methacrifos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Methamidophos	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Methidathion	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Methiocarb	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Methoxychlor	mg/kg dry wt	-	< 0.011	-	-	< 0.010
Metolachlor	mg/kg dry wt	-	< 0.006	-	-	< 0.006
Metribuzin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Mevinphos	mg/kg dry wt	-	< 0.03	-	-	< 0.03
Molinate	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Myclobutanil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Naled	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Nitrofen	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Nitrothal-isopropyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Norflurazon	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Omethoate	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Oxadiazon	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Oxychlordane	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Oxyfluorfen	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Paclobutrazol	mg/kg dry wt	-	< 0.008	-	-	< 0.008

Sample Type: Soil						
Sample Name:		S28 0.0 18-Apr-2012	S31 0.0 18-Apr-2012	S30 0.0 18-Apr-2012	S35 0.0 18-Apr-2012	S29 0.0 18-Apr-2012
Lab Number:		999240.1	999240.2	999240.3	999240.4	999240.5
Multiresidue Pesticides in Soil samples by GCMS						
Parathion-ethyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Parathion-methyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Penconazole	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Pendimethalin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Permethrin	mg/kg dry wt	-	< 0.003	-	-	< 0.003
Phorate	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Phosmet	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Phosphamidon	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Pirimicarb	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Pirimiphos-methyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Prochloraz	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Procymidone	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Prometryn	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Propachlor	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Propanil	mg/kg dry wt	-	< 0.03	-	-	< 0.03
Propazine	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Propetamphos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Propham	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Propiconazole	mg/kg dry wt	-	< 0.006	-	-	< 0.006
Prothiofos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Pyrazophos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Pyrifenox	mg/kg dry wt	-	< 0.011	-	-	< 0.011
Pyrimethanil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Pyriproxyfen	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Quintozene	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Quizalofop-ethyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Simazine	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Simetryn	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Sulfentrazone	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Sulfotep	mg/kg dry wt	-	< 0.008	-	-	< 0.008
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Tebuconazole	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Tebufenpyrad	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Terbacil	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Terbufos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Terbumeton	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Terbuthylazine	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Terbuthylazine-desethyl	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Terbutryn	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Tetrachlorvinphos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Thiabendazole	mg/kg dry wt	-	< 0.04	-	-	< 0.04
Thiobencarb	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Thiometon	mg/kg dry wt	-	< 0.015	-	-	< 0.015
Tolylfluanid	mg/kg dry wt	-	< 0.004	-	-	< 0.004
Triadimefon	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Triazophos	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Trifluralin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Vinclozolin	mg/kg dry wt	-	< 0.008	-	-	< 0.008
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
alpha-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
beta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
delta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-

Sample Type: Soil						
	Sample Name:	S28 0.0 18-Apr-2012	S31 0.0 18-Apr-2012	S30 0.0 18-Apr-2012	S35 0.0 18-Apr-2012	S29 0.0 18-Apr-2012
	Lab Number:	999240.1	999240.2	999240.3	999240.4	999240.5
Organochlorine Pesticides Screening in Soil						
cis-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	< 0.04	< 0.04	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	0.013	< 0.010	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
4,4'-DDE	mg/kg dry wt	0.074	-	0.23	< 0.010	-
2,4'-DDT	mg/kg dry wt	< 0.011	-	0.014	< 0.010	-
4,4'-DDT	mg/kg dry wt	0.012	-	0.054	< 0.010	-
Dieldrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Endosulfan I	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Endosulfan II	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Endrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Endrin ketone	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Heptachlor	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-
Methoxychlor	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	-

	Sample Name:	S32 0.0 18-Apr-2012	S34 0.0 18-Apr-2012	S33 0.0 18-Apr-2012	S36 0.0 18-Apr-2012	S21 0.0 18-Apr-2012
	Lab Number:	999240.6	999240.7	999240.8	999240.9	999240.10
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	83	-	82
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	< 2	< 2	2	2	2
Total Recoverable Cadmium	mg/kg dry wt	0.11	0.14	< 0.10	0.12	0.13
Total Recoverable Chromium	mg/kg dry wt	14	14	13	16	12
Total Recoverable Copper	mg/kg dry wt	4	4	4	4	4
Total Recoverable Lead	mg/kg dry wt	10.7	11.4	10.5	11.5	11.9
Total Recoverable Nickel	mg/kg dry wt	7	8	7	9	6
Total Recoverable Zinc	mg/kg dry wt	51	39	35	37	37
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Alachlor	mg/kg dry wt	-	-	< 0.006	-	< 0.006
Aldrin	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Atrazine	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Atrazine-desethyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Atrazine-desisopropyl	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Azaconazole	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Azinphos-methyl	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Benalaxyl	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Bendiocarb	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Benodanil	mg/kg dry wt	-	-	< 0.015	-	< 0.015
alpha-BHC	mg/kg dry wt	-	-	< 0.011	-	< 0.011
beta-BHC	mg/kg dry wt	-	-	< 0.011	-	< 0.011
delta-BHC	mg/kg dry wt	-	-	< 0.011	-	< 0.011
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Bifenthrin	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Bitertanol	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Bromacil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Bromophos-ethyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Bromopropylate	mg/kg dry wt	-	-	< 0.008	-	< 0.008

Sample Type: Soil						
Sample Name:		S32 0.0 18-Apr-2012	S34 0.0 18-Apr-2012	S33 0.0 18-Apr-2012	S36 0.0 18-Apr-2012	S21 0.0 18-Apr-2012
Lab Number:		999240.6	999240.7	999240.8	999240.9	999240.10
Multiresidue Pesticides in Soil samples by GCMS						
Bupirimate	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Buprofezin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Butachlor	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Captafol	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Captan	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Carbaryl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Carbofenothion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Carbofuran	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Carboxin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
cis-Chlordane	mg/kg dry wt	-	-	< 0.011	-	< 0.011
trans-Chlordane	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Chlorfenvinphos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Chlorfluazuron	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Chlorothalonil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Chlorpropham	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Chlorpyrifos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Chlorpyrifos-methyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Chlortoluron	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Chlozolinate	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Coumaphos	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Cyanazine	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Cyfluthrin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Cyhalothrin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Cypermethrin	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Cyproconazole	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Cyprodinil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
2,4'-DDD	mg/kg dry wt	-	-	< 0.011	-	< 0.011
4,4'-DDD	mg/kg dry wt	-	-	< 0.011	-	< 0.011
2,4'-DDE	mg/kg dry wt	-	-	< 0.011	-	< 0.011
4,4'-DDE	mg/kg dry wt	-	-	0.195	-	0.086
2,4'-DDT	mg/kg dry wt	-	-	< 0.011	-	< 0.011
4,4'-DDT	mg/kg dry wt	-	-	0.022	-	< 0.011
Total DDT Isomers	mg/kg dry wt	-	-	0.22	-	0.09
Deltamethrin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Demeton-S-methyl	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Diazinon	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Dichlobenil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Dichlofenthion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Dichlofluanid	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Dichloran	mg/kg dry wt	-	-	< 0.03	-	< 0.03
Dichlorvos	mg/kg dry wt	-	-	< 0.010	-	< 0.010
Dicofol	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Dicrotophos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Dieldrin	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Difenoconazole	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Dimethoate	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Dinocap	mg/kg dry wt	-	-	< 0.08	-	< 0.09
Diphenylamine	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Disulfoton	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Diuron	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Endosulfan I	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Endosulfan II	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.011	-	< 0.011

Sample Type: Soil						
Sample Name:		S32 0.0 18-Apr-2012	S34 0.0 18-Apr-2012	S33 0.0 18-Apr-2012	S36 0.0 18-Apr-2012	S21 0.0 18-Apr-2012
Lab Number:		999240.6	999240.7	999240.8	999240.9	999240.10
Multiresidue Pesticides in Soil samples by GCMS						
Endrin	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Endrin Aldehyde	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Endrin ketone	mg/kg dry wt	-	-	< 0.011	-	< 0.011
EPN	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Esfenvalerate	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Ethion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Etrimfos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Famphur	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenamiphos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenarimol	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenitrothion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenpropathrin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenpropimorph	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fensulfothion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenthion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fenvalerate	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Fluazifop-butyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fluometuron	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Flusilazole	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Fluvalinate	mg/kg dry wt	-	-	< 0.006	-	< 0.006
Folpet	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Furalaxyl	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Haloxyfop-methyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Heptachlor	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Hexaconazole	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Hexazinone	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Hexythiazox	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Imazalil	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Indoxacarb	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Iodofenphos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Iprodione	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Isazophos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Isofenphos	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Kresoxim-methyl	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Leptophos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Linuron	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Malathion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Metalaxyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Methacrifos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Methamidophos	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Methidathion	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Methiocarb	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Methoxychlor	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Metolachlor	mg/kg dry wt	-	-	< 0.006	-	< 0.006
Metribuzin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Mevinphos	mg/kg dry wt	-	-	< 0.03	-	< 0.03
Molinate	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Myclobutanil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Naled	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Nitrofen	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Nitrothal-isopropyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008

Sample Type: Soil						
Sample Name:		S32 0.0 18-Apr-2012	S34 0.0 18-Apr-2012	S33 0.0 18-Apr-2012	S36 0.0 18-Apr-2012	S21 0.0 18-Apr-2012
Lab Number:		999240.6	999240.7	999240.8	999240.9	999240.10
Multiresidue Pesticides in Soil samples by GCMS						
Norflurazon	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Omethoate	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Oxadiazon	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Oxychlordane	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Oxyfluorfen	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Paclobutrazol	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Parathion-ethyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Parathion-methyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Penconazole	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Pendimethalin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Permethrin	mg/kg dry wt	-	-	< 0.003	-	< 0.003
Phorate	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Phosmet	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Phosphamidon	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Pirimicarb	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Pirimiphos-methyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Prochloraz	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Procymidone	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Prometryn	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Propachlor	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Propanil	mg/kg dry wt	-	-	< 0.03	-	< 0.03
Propazine	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Propetamphos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Propham	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Propiconazole	mg/kg dry wt	-	-	< 0.006	-	< 0.006
Prothiofos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Pyrazophos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Pyrifenox	mg/kg dry wt	-	-	< 0.011	-	< 0.011
Pyrimethanil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Pyriproxyfen	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Quintozene	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Quizalofop-ethyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Simazine	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Simetryn	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Sulfentrazone	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Sulfotep	mg/kg dry wt	-	-	< 0.008	-	< 0.008
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Tebuconazole	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Tebufenpyrad	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Terbacil	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Terbufos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Terbumeton	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Terbuthylazine	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Terbuthylazine-desethyl	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Terbutryn	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Tetrachlorvinphos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Thiabendazole	mg/kg dry wt	-	-	< 0.04	-	< 0.04
Thiobencarb	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Thiometon	mg/kg dry wt	-	-	< 0.015	-	< 0.015
Tolylfluanid	mg/kg dry wt	-	-	< 0.004	-	< 0.004
Triadimefon	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Triazophos	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Trifluralin	mg/kg dry wt	-	-	< 0.008	-	< 0.008
Vinclozolin	mg/kg dry wt	-	-	< 0.008	-	< 0.008

Sample Type: Soil						
Sample Name:		S32 0.0 18-Apr-2012	S34 0.0 18-Apr-2012	S33 0.0 18-Apr-2012	S36 0.0 18-Apr-2012	S21 0.0 18-Apr-2012
Lab Number:		999240.6	999240.7	999240.8	999240.9	999240.10
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
alpha-BHC	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
beta-BHC	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
delta-BHC	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
cis-Chlordane	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
trans-Chlordane	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	-	< 0.04	-
2,4'-DDD	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
4,4'-DDD	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
2,4'-DDE	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
4,4'-DDE	mg/kg dry wt	0.075	0.179	-	0.090	-
2,4'-DDT	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
4,4'-DDT	mg/kg dry wt	< 0.011	0.017	-	< 0.011	-
Dieldrin	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Endosulfan I	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Endosulfan II	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Endrin	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Endrin ketone	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Heptachlor	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-
Methoxychlor	mg/kg dry wt	< 0.011	< 0.010	-	< 0.011	-

Sample Name:		S26 0.0 18-Apr-2012	S12 0.0 18-Apr-2012	S25 0.0 18-Apr-2012	S27 0.0 18-Apr-2012	S24 0.0 18-Apr-2012
Lab Number:		999240.11	999240.12	999240.13	999240.14	999240.15
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	85	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	3	5	2	2
Total Recoverable Cadmium	mg/kg dry wt	0.11	0.13	0.22	0.10	0.14
Total Recoverable Chromium	mg/kg dry wt	17	14	18	14	14
Total Recoverable Copper	mg/kg dry wt	6	6	13	5	4
Total Recoverable Lead	mg/kg dry wt	22	12.7	18.1	12.4	10.7
Total Recoverable Nickel	mg/kg dry wt	11	8	9	9	8
Total Recoverable Zinc	mg/kg dry wt	59	48	100	46	44
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	< 0.007	-	-
Alachlor	mg/kg dry wt	-	-	< 0.006	-	-
Aldrin	mg/kg dry wt	-	-	< 0.010	-	-
Atrazine	mg/kg dry wt	-	-	< 0.007	-	-
Atrazine-desethyl	mg/kg dry wt	-	-	< 0.007	-	-
Atrazine-desisopropyl	mg/kg dry wt	-	-	< 0.014	-	-
Azaconazole	mg/kg dry wt	-	-	< 0.004	-	-
Azinphos-methyl	mg/kg dry wt	-	-	< 0.014	-	-
Benalaxyl	mg/kg dry wt	-	-	< 0.004	-	-
Bendiocarb	mg/kg dry wt	-	-	< 0.007	-	-
Benodanil	mg/kg dry wt	-	-	< 0.014	-	-
alpha-BHC	mg/kg dry wt	-	-	< 0.010	-	-
beta-BHC	mg/kg dry wt	-	-	< 0.010	-	-
delta-BHC	mg/kg dry wt	-	-	< 0.010	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.010	-	-

Sample Type: Soil						
Sample Name:		S26 0.0 18-Apr-2012	S12 0.0 18-Apr-2012	S25 0.0 18-Apr-2012	S27 0.0 18-Apr-2012	S24 0.0 18-Apr-2012
Lab Number:		999240.11	999240.12	999240.13	999240.14	999240.15
Multiresidue Pesticides in Soil samples by GCMS						
Bifenthrin	mg/kg dry wt	-	-	< 0.004	-	-
Bitertanol	mg/kg dry wt	-	-	< 0.014	-	-
Bromacil	mg/kg dry wt	-	-	< 0.007	-	-
Bromophos-ethyl	mg/kg dry wt	-	-	< 0.007	-	-
Bromopropylate	mg/kg dry wt	-	-	< 0.007	-	-
Bupirimate	mg/kg dry wt	-	-	< 0.007	-	-
Buprofezin	mg/kg dry wt	-	-	< 0.007	-	-
Butachlor	mg/kg dry wt	-	-	< 0.007	-	-
Captafol	mg/kg dry wt	-	-	< 0.04	-	-
Captan	mg/kg dry wt	-	-	0.051	-	-
Carbaryl	mg/kg dry wt	-	-	< 0.007	-	-
Carbofenothion	mg/kg dry wt	-	-	< 0.007	-	-
Carbofuran	mg/kg dry wt	-	-	< 0.007	-	-
Carboxin	mg/kg dry wt	-	-	< 0.007	-	-
cis-Chlordane	mg/kg dry wt	-	-	< 0.010	-	-
trans-Chlordane	mg/kg dry wt	-	-	< 0.010	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	< 0.04	-	-
Chlorfenvinphos	mg/kg dry wt	-	-	< 0.007	-	-
Chlorfluazuron	mg/kg dry wt	-	-	< 0.007	-	-
Chlorothalonil	mg/kg dry wt	-	-	< 0.007	-	-
Chlorpropham	mg/kg dry wt	-	-	< 0.014	-	-
Chlorpyrifos	mg/kg dry wt	-	-	< 0.007	-	-
Chlorpyrifos-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Chlortoluron	mg/kg dry wt	-	-	< 0.014	-	-
Chlozolinate	mg/kg dry wt	-	-	< 0.007	-	-
Coumaphos	mg/kg dry wt	-	-	< 0.014	-	-
Cyanazine	mg/kg dry wt	-	-	< 0.007	-	-
Cyfluthrin	mg/kg dry wt	-	-	< 0.007	-	-
Cyhalothrin	mg/kg dry wt	-	-	< 0.007	-	-
Cypermethrin	mg/kg dry wt	-	-	< 0.014	-	-
Cyproconazole	mg/kg dry wt	-	-	< 0.010	-	-
Cyprodinil	mg/kg dry wt	-	-	< 0.007	-	-
2,4'-DDD	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDD	mg/kg dry wt	-	-	< 0.010	-	-
2,4'-DDE	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDE	mg/kg dry wt	-	-	0.011	-	-
2,4'-DDT	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDT	mg/kg dry wt	-	-	< 0.010	-	-
Total DDT Isomers	mg/kg dry wt	-	-	< 0.06	-	-
Deltamethrin	mg/kg dry wt	-	-	< 0.007	-	-
Demeton-S-methyl	mg/kg dry wt	-	-	< 0.014	-	-
Diazinon	mg/kg dry wt	-	-	< 0.004	-	-
Dichlobenil	mg/kg dry wt	-	-	< 0.007	-	-
Dichlofenthion	mg/kg dry wt	-	-	< 0.007	-	-
Dichlofluanid	mg/kg dry wt	-	-	< 0.007	-	-
Dichloran	mg/kg dry wt	-	-	< 0.03	-	-
Dichlorvos	mg/kg dry wt	-	-	< 0.010	-	-
Dicofol	mg/kg dry wt	-	-	< 0.04	-	-
Dicrotophos	mg/kg dry wt	-	-	< 0.007	-	-
Dieldrin	mg/kg dry wt	-	-	0.021	-	-
Difenoconazole	mg/kg dry wt	-	-	< 0.010	-	-
Dimethoate	mg/kg dry wt	-	-	< 0.014	-	-
Dinocap	mg/kg dry wt	-	-	< 0.08	-	-
Diphenylamine	mg/kg dry wt	-	-	< 0.014	-	-

Sample Type: Soil						
Sample Name:		S26 0.0 18-Apr-2012	S12 0.0 18-Apr-2012	S25 0.0 18-Apr-2012	S27 0.0 18-Apr-2012	S24 0.0 18-Apr-2012
Lab Number:		999240.11	999240.12	999240.13	999240.14	999240.15
Multiresidue Pesticides in Soil samples by GCMS						
Disulfoton	mg/kg dry wt	-	-	< 0.007	-	-
Diuron	mg/kg dry wt	-	-	< 0.007	-	-
Endosulfan I	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan II	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.010	-	-
Endrin	mg/kg dry wt	-	-	< 0.010	-	-
Endrin Aldehyde	mg/kg dry wt	-	-	< 0.010	-	-
Endrin ketone	mg/kg dry wt	-	-	< 0.010	-	-
EPN	mg/kg dry wt	-	-	< 0.007	-	-
Esfenvalerate	mg/kg dry wt	-	-	< 0.010	-	-
Ethion	mg/kg dry wt	-	-	< 0.007	-	-
Etrimfos	mg/kg dry wt	-	-	< 0.007	-	-
Famphur	mg/kg dry wt	-	-	< 0.007	-	-
Fenamiphos	mg/kg dry wt	-	-	< 0.007	-	-
Fenarimol	mg/kg dry wt	-	-	< 0.007	-	-
Fenitrothion	mg/kg dry wt	-	-	< 0.007	-	-
Fenpropathrin	mg/kg dry wt	-	-	< 0.007	-	-
Fenpropimorph	mg/kg dry wt	-	-	< 0.007	-	-
Fensulfothion	mg/kg dry wt	-	-	< 0.007	-	-
Fenthion	mg/kg dry wt	-	-	< 0.007	-	-
Fenvalerate	mg/kg dry wt	-	-	< 0.010	-	-
Fluazifop-butyl	mg/kg dry wt	-	-	< 0.007	-	-
Fluometuron	mg/kg dry wt	-	-	< 0.007	-	-
Flusilazole	mg/kg dry wt	-	-	< 0.007	-	-
Fluvalinate	mg/kg dry wt	-	-	< 0.006	-	-
Folpet	mg/kg dry wt	-	-	< 0.014	-	-
Furalaxyl	mg/kg dry wt	-	-	< 0.004	-	-
Haloxyfop-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Heptachlor	mg/kg dry wt	-	-	< 0.010	-	-
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.010	-	-
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.010	-	-
Hexaconazole	mg/kg dry wt	-	-	< 0.007	-	-
Hexazinone	mg/kg dry wt	-	-	< 0.004	-	-
Hexythiazox	mg/kg dry wt	-	-	< 0.04	-	-
Imazalil	mg/kg dry wt	-	-	< 0.04	-	-
Indoxacarb	mg/kg dry wt	-	-	< 0.007	-	-
Iodofenphos	mg/kg dry wt	-	-	< 0.007	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.04	-	-
Iprodione	mg/kg dry wt	-	-	< 0.007	-	-
Isazophos	mg/kg dry wt	-	-	< 0.007	-	-
Isofenphos	mg/kg dry wt	-	-	< 0.004	-	-
Kresoxim-methyl	mg/kg dry wt	-	-	< 0.004	-	-
Leptophos	mg/kg dry wt	-	-	< 0.007	-	-
Linuron	mg/kg dry wt	-	-	< 0.007	-	-
Malathion	mg/kg dry wt	-	-	< 0.007	-	-
Metalaxyl	mg/kg dry wt	-	-	< 0.007	-	-
Methacrifos	mg/kg dry wt	-	-	< 0.007	-	-
Methamidophos	mg/kg dry wt	-	-	< 0.04	-	-
Methidathion	mg/kg dry wt	-	-	< 0.007	-	-
Methiocarb	mg/kg dry wt	-	-	< 0.007	-	-
Methoxychlor	mg/kg dry wt	-	-	< 0.010	-	-
Metolachlor	mg/kg dry wt	-	-	< 0.006	-	-
Metribuzin	mg/kg dry wt	-	-	< 0.007	-	-
Mevinphos	mg/kg dry wt	-	-	< 0.02	-	-

Sample Type: Soil							
	Sample Name:	S26 0.0 18-Apr-2012	S12 0.0 18-Apr-2012	S25 0.0 18-Apr-2012	S27 0.0 18-Apr-2012	S24 0.0 18-Apr-2012
	Lab Number:	999240.11	999240.12	999240.13	999240.14	999240.15
Multiresidue Pesticides in Soil samples by GCMS						
Molinate	mg/kg dry wt	-	-	< 0.014	-	-
Myclobutanil	mg/kg dry wt	-	-	< 0.007	-	-
Naled	mg/kg dry wt	-	-	< 0.04	-	-
Nitrofen	mg/kg dry wt	-	-	< 0.014	-	-
Nitrothal-isopropyl	mg/kg dry wt	-	-	< 0.007	-	-
Norflurazon	mg/kg dry wt	-	-	< 0.014	-	-
Omethoate	mg/kg dry wt	-	-	< 0.04	-	-
Oxadiazon	mg/kg dry wt	-	-	< 0.007	-	-
Oxychlordane	mg/kg dry wt	-	-	< 0.004	-	-
Oxyfluorfen	mg/kg dry wt	-	-	< 0.004	-	-
Paclobutrazol	mg/kg dry wt	-	-	< 0.007	-	-
Parathion-ethyl	mg/kg dry wt	-	-	< 0.007	-	-
Parathion-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Penconazole	mg/kg dry wt	-	-	< 0.007	-	-
Pendimethalin	mg/kg dry wt	-	-	< 0.007	-	-
Permethrin	mg/kg dry wt	-	-	< 0.003	-	-
Phorate	mg/kg dry wt	-	-	< 0.014	-	-
Phosmet	mg/kg dry wt	-	-	< 0.007	-	-
Phosphamidon	mg/kg dry wt	-	-	< 0.007	-	-
Pirimicarb	mg/kg dry wt	-	-	< 0.007	-	-
Pirimiphos-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Prochloraz	mg/kg dry wt	-	-	< 0.04	-	-
Procymidone	mg/kg dry wt	-	-	< 0.007	-	-
Prometryn	mg/kg dry wt	-	-	< 0.004	-	-
Propachlor	mg/kg dry wt	-	-	< 0.007	-	-
Propanil	mg/kg dry wt	-	-	< 0.03	-	-
Propazine	mg/kg dry wt	-	-	< 0.004	-	-
Propetamphos	mg/kg dry wt	-	-	< 0.007	-	-
Propham	mg/kg dry wt	-	-	< 0.007	-	-
Propiconazole	mg/kg dry wt	-	-	< 0.006	-	-
Prothiofos	mg/kg dry wt	-	-	< 0.007	-	-
Pyrazophos	mg/kg dry wt	-	-	< 0.007	-	-
Pyrifenox	mg/kg dry wt	-	-	< 0.010	-	-
Pyrimethanil	mg/kg dry wt	-	-	< 0.007	-	-
Pyriproxyfen	mg/kg dry wt	-	-	< 0.007	-	-
Quintozene	mg/kg dry wt	-	-	< 0.014	-	-
Quizalofop-ethyl	mg/kg dry wt	-	-	< 0.007	-	-
Simazine	mg/kg dry wt	-	-	< 0.007	-	-
Simetryn	mg/kg dry wt	-	-	< 0.007	-	-
Sulfentrazone	mg/kg dry wt	-	-	< 0.04	-	-
Sulfotep	mg/kg dry wt	-	-	< 0.007	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.014	-	-
Tebuconazole	mg/kg dry wt	-	-	< 0.007	-	-
Tebufenpyrad	mg/kg dry wt	-	-	< 0.004	-	-
Terbacil	mg/kg dry wt	-	-	< 0.007	-	-
Terbufos	mg/kg dry wt	-	-	< 0.007	-	-
Terbumeton	mg/kg dry wt	-	-	< 0.007	-	-
Terbuthylazine	mg/kg dry wt	-	-	< 0.004	-	-
Terbuthylazine-desethyl	mg/kg dry wt	-	-	< 0.007	-	-
Terbutryn	mg/kg dry wt	-	-	< 0.007	-	-
Tetrachlorvinphos	mg/kg dry wt	-	-	< 0.007	-	-
Thiabendazole	mg/kg dry wt	-	-	< 0.04	-	-
Thiobencarb	mg/kg dry wt	-	-	< 0.007	-	-
Thiometon	mg/kg dry wt	-	-	< 0.014	-	-

Sample Type: Soil						
Sample Name:		S26 0.0 18-Apr-2012	S12 0.0 18-Apr-2012	S25 0.0 18-Apr-2012	S27 0.0 18-Apr-2012	S24 0.0 18-Apr-2012
Lab Number:		999240.11	999240.12	999240.13	999240.14	999240.15
Multiresidue Pesticides in Soil samples by GCMS						
Tolylfluanid	mg/kg dry wt	-	-	< 0.004	-	-
Triadimefon	mg/kg dry wt	-	-	< 0.007	-	-
Triazophos	mg/kg dry wt	-	-	< 0.007	-	-
Trifluralin	mg/kg dry wt	-	-	< 0.007	-	-
Vinclozolin	mg/kg dry wt	-	-	< 0.007	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
alpha-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
beta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
delta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	-	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
4,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
2,4'-DDT	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
4,4'-DDT	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Dieldrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Endosulfan I	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Endosulfan II	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Endrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Endrin Aldehyde	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Endrin ketone	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Heptachlor	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010
Methoxychlor	mg/kg dry wt	< 0.010	< 0.010	-	< 0.011	< 0.010

Sample Name:		S11 0.0 18-Apr-2012	S23 0.0 18-Apr-2012	S22 0.0 18-Apr-2012	S10 0.0 18-Apr-2012	S9 0.0 18-Apr-2012
Lab Number:		999240.16	999240.17	999240.18	999240.19	999240.20
Individual Tests						
Dry Matter	g/100g as rcvd	87	-	-	-	-
pH*	pH Units	5.6	-	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	< 2	2	< 2	< 2	< 2
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	0.10	0.13
Total Recoverable Chromium	mg/kg dry wt	12	15	13	14	14
Total Recoverable Copper	mg/kg dry wt	4	4	4	4	5
Total Recoverable Lead	mg/kg dry wt	10.9	12.6	11.1	11.2	11.4
Total Recoverable Nickel	mg/kg dry wt	7	7	7	7	8
Total Recoverable Zinc	mg/kg dry wt	46	40	40	43	48
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	< 0.007	-	-	-	-
Alachlor	mg/kg dry wt	< 0.006	-	-	-	-
Aldrin	mg/kg dry wt	< 0.010	-	-	-	-
Atrazine	mg/kg dry wt	< 0.007	-	-	-	-
Atrazine-desethyl	mg/kg dry wt	< 0.007	-	-	-	-
Atrazine-desisopropyl	mg/kg dry wt	< 0.014	-	-	-	-
Azaconazole	mg/kg dry wt	< 0.004	-	-	-	-
Azinphos-methyl	mg/kg dry wt	< 0.014	-	-	-	-

Sample Type: Soil						
Sample Name:		S11 0.0 18-Apr-2012	S23 0.0 18-Apr-2012	S22 0.0 18-Apr-2012	S10 0.0 18-Apr-2012	S9 0.0 18-Apr-2012
Lab Number:		999240.16	999240.17	999240.18	999240.19	999240.20
Multiresidue Pesticides in Soil samples by GCMS						
Benalaxyl	mg/kg dry wt	< 0.004	-	-	-	-
Bendiocarb	mg/kg dry wt	< 0.007	-	-	-	-
Benodanil	mg/kg dry wt	< 0.014	-	-	-	-
alpha-BHC	mg/kg dry wt	< 0.010	-	-	-	-
beta-BHC	mg/kg dry wt	< 0.010	-	-	-	-
delta-BHC	mg/kg dry wt	< 0.010	-	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	-	-	-	-
Bifenthrin	mg/kg dry wt	< 0.004	-	-	-	-
Bitertanol	mg/kg dry wt	< 0.014	-	-	-	-
Bromacil	mg/kg dry wt	< 0.007	-	-	-	-
Bromophos-ethyl	mg/kg dry wt	< 0.007	-	-	-	-
Bromopropylate	mg/kg dry wt	< 0.007	-	-	-	-
Bupirimate	mg/kg dry wt	< 0.007	-	-	-	-
Buprofezin	mg/kg dry wt	< 0.007	-	-	-	-
Butachlor	mg/kg dry wt	< 0.007	-	-	-	-
Captafol	mg/kg dry wt	< 0.04	-	-	-	-
Captan	mg/kg dry wt	< 0.014	-	-	-	-
Carbaryl	mg/kg dry wt	< 0.007	-	-	-	-
Carbofenothion	mg/kg dry wt	< 0.007	-	-	-	-
Carbofuran	mg/kg dry wt	< 0.007	-	-	-	-
Carboxin	mg/kg dry wt	< 0.007	-	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.010	-	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.010	-	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	-	-
Chlorfenvinphos	mg/kg dry wt	< 0.007	-	-	-	-
Chlorfluazuron	mg/kg dry wt	< 0.007	-	-	-	-
Chlorothalonil	mg/kg dry wt	< 0.007	-	-	-	-
Chlorpropham	mg/kg dry wt	< 0.014	-	-	-	-
Chlorpyrifos	mg/kg dry wt	< 0.007	-	-	-	-
Chlorpyrifos-methyl	mg/kg dry wt	< 0.007	-	-	-	-
Chlortoluron	mg/kg dry wt	< 0.014	-	-	-	-
Chlozolinate	mg/kg dry wt	< 0.007	-	-	-	-
Coumaphos	mg/kg dry wt	< 0.014	-	-	-	-
Cyanazine	mg/kg dry wt	< 0.007	-	-	-	-
Cyfluthrin	mg/kg dry wt	< 0.007	-	-	-	-
Cyhalothrin	mg/kg dry wt	< 0.007	-	-	-	-
Cypermethrin	mg/kg dry wt	< 0.014	-	-	-	-
Cyproconazole	mg/kg dry wt	< 0.010	-	-	-	-
Cyprodinil	mg/kg dry wt	< 0.007	-	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.010	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.010	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.010	-	-	-	-
4,4'-DDE	mg/kg dry wt	0.049	-	-	-	-
2,4'-DDT	mg/kg dry wt	< 0.010	-	-	-	-
4,4'-DDT	mg/kg dry wt	< 0.010	-	-	-	-
Total DDT Isomers	mg/kg dry wt	< 0.06	-	-	-	-
Deltamethrin	mg/kg dry wt	< 0.007	-	-	-	-
Demeton-S-methyl	mg/kg dry wt	< 0.014	-	-	-	-
Diazinon	mg/kg dry wt	< 0.004	-	-	-	-
Dichlobenil	mg/kg dry wt	< 0.007	-	-	-	-
Dichlofenthion	mg/kg dry wt	< 0.007	-	-	-	-
Dichlofluanid	mg/kg dry wt	< 0.007	-	-	-	-
Dichloran	mg/kg dry wt	< 0.03	-	-	-	-
Dichlorvos	mg/kg dry wt	< 0.010	-	-	-	-

Sample Type: Soil						
	Sample Name:	S11 0.0 18-Apr-2012	S23 0.0 18-Apr-2012	S22 0.0 18-Apr-2012	S10 0.0 18-Apr-2012	S9 0.0 18-Apr-2012
	Lab Number:	999240.16	999240.17	999240.18	999240.19	999240.20
Multiresidue Pesticides in Soil samples by GCMS						
Dicofol	mg/kg dry wt	< 0.04	-	-	-	-
Dicrotophos	mg/kg dry wt	< 0.007	-	-	-	-
Dieldrin	mg/kg dry wt	< 0.010	-	-	-	-
Difenoconazole	mg/kg dry wt	< 0.010	-	-	-	-
Dimethoate	mg/kg dry wt	< 0.014	-	-	-	-
Dinocap	mg/kg dry wt	< 0.08	-	-	-	-
Diphenylamine	mg/kg dry wt	< 0.014	-	-	-	-
Disulfoton	mg/kg dry wt	< 0.007	-	-	-	-
Diuron	mg/kg dry wt	< 0.007	-	-	-	-
Endosulfan I	mg/kg dry wt	< 0.010	-	-	-	-
Endosulfan II	mg/kg dry wt	< 0.010	-	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.010	-	-	-	-
Endrin	mg/kg dry wt	< 0.010	-	-	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.010	-	-	-	-
Endrin ketone	mg/kg dry wt	< 0.010	-	-	-	-
EPN	mg/kg dry wt	< 0.007	-	-	-	-
Esfenvalerate	mg/kg dry wt	< 0.010	-	-	-	-
Ethion	mg/kg dry wt	< 0.007	-	-	-	-
Etrimfos	mg/kg dry wt	< 0.007	-	-	-	-
Famphur	mg/kg dry wt	< 0.007	-	-	-	-
Fenamiphos	mg/kg dry wt	< 0.007	-	-	-	-
Fenarimol	mg/kg dry wt	< 0.007	-	-	-	-
Fenitrothion	mg/kg dry wt	< 0.007	-	-	-	-
Fenpropathrin	mg/kg dry wt	< 0.007	-	-	-	-
Fenpropimorph	mg/kg dry wt	< 0.007	-	-	-	-
Fensulfothion	mg/kg dry wt	< 0.007	-	-	-	-
Fenthion	mg/kg dry wt	< 0.007	-	-	-	-
Fenvalerate	mg/kg dry wt	< 0.010	-	-	-	-
Fluazifop-butyl	mg/kg dry wt	< 0.007	-	-	-	-
Fluometuron	mg/kg dry wt	< 0.007	-	-	-	-
Flusilazole	mg/kg dry wt	< 0.007	-	-	-	-
Fluvalinate	mg/kg dry wt	< 0.006	-	-	-	-
Folpet	mg/kg dry wt	< 0.014	-	-	-	-
Furalaxyl	mg/kg dry wt	< 0.004	-	-	-	-
Haloxyfop-methyl	mg/kg dry wt	< 0.007	-	-	-	-
Heptachlor	mg/kg dry wt	< 0.010	-	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.010	-	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.010	-	-	-	-
Hexaconazole	mg/kg dry wt	< 0.007	-	-	-	-
Hexazinone	mg/kg dry wt	< 0.004	-	-	-	-
Hexythiazox	mg/kg dry wt	< 0.04	-	-	-	-
Imazalil	mg/kg dry wt	< 0.04	-	-	-	-
Indoxacarb	mg/kg dry wt	< 0.007	-	-	-	-
Iodofenphos	mg/kg dry wt	< 0.007	-	-	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	< 0.04	-	-	-	-
Iprodione	mg/kg dry wt	< 0.007	-	-	-	-
Isazophos	mg/kg dry wt	< 0.007	-	-	-	-
Isofenphos	mg/kg dry wt	< 0.004	-	-	-	-
Kresoxim-methyl	mg/kg dry wt	< 0.004	-	-	-	-
Leptophos	mg/kg dry wt	< 0.007	-	-	-	-
Linuron	mg/kg dry wt	< 0.007	-	-	-	-
Malathion	mg/kg dry wt	< 0.007	-	-	-	-
Metalaxyl	mg/kg dry wt	< 0.007	-	-	-	-
Methacrifos	mg/kg dry wt	< 0.007	-	-	-	-

Sample Type: Soil						
Sample Name:		S11 0.0 18-Apr-2012	S23 0.0 18-Apr-2012	S22 0.0 18-Apr-2012	S10 0.0 18-Apr-2012	S9 0.0 18-Apr-2012
Lab Number:		999240.16	999240.17	999240.18	999240.19	999240.20
Multiresidue Pesticides in Soil samples by GCMS						
Methamidophos	mg/kg dry wt	< 0.04	-	-	-	-
Methidathion	mg/kg dry wt	< 0.007	-	-	-	-
Methiocarb	mg/kg dry wt	< 0.007	-	-	-	-
Methoxychlor	mg/kg dry wt	< 0.010	-	-	-	-
Metolachlor	mg/kg dry wt	< 0.006	-	-	-	-
Metribuzin	mg/kg dry wt	< 0.007	-	-	-	-
Mevinphos	mg/kg dry wt	< 0.02	-	-	-	-
Molinate	mg/kg dry wt	< 0.014	-	-	-	-
Myclobutanil	mg/kg dry wt	< 0.007	-	-	-	-
Naled	mg/kg dry wt	< 0.04	-	-	-	-
Nitrofen	mg/kg dry wt	< 0.014	-	-	-	-
Nitrothal-isopropyl	mg/kg dry wt	< 0.007	-	-	-	-
Norflurazon	mg/kg dry wt	< 0.014	-	-	-	-
Omethoate	mg/kg dry wt	< 0.04	-	-	-	-
Oxadiazon	mg/kg dry wt	< 0.007	-	-	-	-
Oxychlordane	mg/kg dry wt	< 0.004	-	-	-	-
Oxyfluorfen	mg/kg dry wt	< 0.004	-	-	-	-
Paclobutrazol	mg/kg dry wt	< 0.007	-	-	-	-
Parathion-ethyl	mg/kg dry wt	< 0.007	-	-	-	-
Parathion-methyl	mg/kg dry wt	< 0.007	-	-	-	-
Penconazole	mg/kg dry wt	< 0.007	-	-	-	-
Pendimethalin	mg/kg dry wt	< 0.007	-	-	-	-
Permethrin	mg/kg dry wt	< 0.003	-	-	-	-
Phorate	mg/kg dry wt	< 0.014	-	-	-	-
Phosmet	mg/kg dry wt	< 0.007	-	-	-	-
Phosphamidon	mg/kg dry wt	< 0.007	-	-	-	-
Pirimicarb	mg/kg dry wt	< 0.007	-	-	-	-
Pirimiphos-methyl	mg/kg dry wt	< 0.007	-	-	-	-
Prochloraz	mg/kg dry wt	< 0.04	-	-	-	-
Procymidone	mg/kg dry wt	< 0.007	-	-	-	-
Prometryn	mg/kg dry wt	< 0.004	-	-	-	-
Propachlor	mg/kg dry wt	< 0.007	-	-	-	-
Propanil	mg/kg dry wt	< 0.03	-	-	-	-
Propazine	mg/kg dry wt	< 0.004	-	-	-	-
Propetamphos	mg/kg dry wt	< 0.007	-	-	-	-
Propham	mg/kg dry wt	< 0.007	-	-	-	-
Propiconazole	mg/kg dry wt	< 0.006	-	-	-	-
Prothiofos	mg/kg dry wt	< 0.007	-	-	-	-
Pyrazophos	mg/kg dry wt	< 0.007	-	-	-	-
Pyrifenox	mg/kg dry wt	< 0.010	-	-	-	-
Pyrimethanil	mg/kg dry wt	< 0.007	-	-	-	-
Pyriproxyfen	mg/kg dry wt	< 0.007	-	-	-	-
Quintozene	mg/kg dry wt	< 0.014	-	-	-	-
Quizalofop-ethyl	mg/kg dry wt	< 0.007	-	-	-	-
Simazine	mg/kg dry wt	< 0.007	-	-	-	-
Simetryn	mg/kg dry wt	< 0.007	-	-	-	-
Sulfentrazone	mg/kg dry wt	< 0.04	-	-	-	-
Sulfotep	mg/kg dry wt	< 0.007	-	-	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	< 0.014	-	-	-	-
Tebuconazole	mg/kg dry wt	< 0.007	-	-	-	-
Tebufenpyrad	mg/kg dry wt	< 0.004	-	-	-	-
Terbacil	mg/kg dry wt	< 0.007	-	-	-	-
Terbufos	mg/kg dry wt	< 0.007	-	-	-	-
Terbumeton	mg/kg dry wt	< 0.007	-	-	-	-

Sample Type: Soil						
Sample Name:		S11 0.0 18-Apr-2012	S23 0.0 18-Apr-2012	S22 0.0 18-Apr-2012	S10 0.0 18-Apr-2012	S9 0.0 18-Apr-2012
Lab Number:		999240.16	999240.17	999240.18	999240.19	999240.20
Multiresidue Pesticides in Soil samples by GCMS						
Terbuthylazine	mg/kg dry wt	< 0.004	-	-	-	-
Terbuthylazine-desethyl	mg/kg dry wt	< 0.007	-	-	-	-
Terbutryn	mg/kg dry wt	< 0.007	-	-	-	-
Tetrachlorvinphos	mg/kg dry wt	< 0.007	-	-	-	-
Thiabendazole	mg/kg dry wt	< 0.04	-	-	-	-
Thiobencarb	mg/kg dry wt	< 0.007	-	-	-	-
Thiometon	mg/kg dry wt	< 0.014	-	-	-	-
Tolylfluanid	mg/kg dry wt	< 0.004	-	-	-	-
Triadimefon	mg/kg dry wt	< 0.007	-	-	-	-
Triazophos	mg/kg dry wt	< 0.007	-	-	-	-
Trifluralin	mg/kg dry wt	< 0.007	-	-	-	-
Vinclozolin	mg/kg dry wt	< 0.007	-	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
alpha-BHC	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
beta-BHC	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
delta-BHC	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
cis-Chlordane	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
trans-Chlordane	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	< 0.04	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
4,4'-DDD	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
2,4'-DDE	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
4,4'-DDE	mg/kg dry wt	-	0.034	0.049	0.039	< 0.010
2,4'-DDT	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
4,4'-DDT	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Dieldrin	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Endosulfan I	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Endosulfan II	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Endosulfan sulphate	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Endrin	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Endrin Aldehyde	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Endrin ketone	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Heptachlor	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Heptachlor epoxide	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Hexachlorobenzene	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010
Methoxychlor	mg/kg dry wt	-	< 0.010	< 0.010	< 0.011	< 0.010

Sample Name:		S8 0.0 18-Apr-2012	S7 0.0 18-Apr-2012	S6 0.0 18-Apr-2012	S5 0.0 18-Apr-2012	S4 0.0 18-Apr-2012
Lab Number:		999240.21	999240.22	999240.23	999240.24	999240.25
Individual Tests						
Dry Matter	g/100g as rcvd	-	93	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	3	< 2	< 2	2
Total Recoverable Cadmium	mg/kg dry wt	0.15	< 0.10	< 0.10	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	16	14	15	14	13
Total Recoverable Copper	mg/kg dry wt	6	5	4	4	4
Total Recoverable Lead	mg/kg dry wt	12.9	10.5	11.1	10.9	11.1
Total Recoverable Nickel	mg/kg dry wt	11	10	10	9	8
Total Recoverable Zinc	mg/kg dry wt	49	34	46	44	44
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	< 0.007	-	-	-
Alachlor	mg/kg dry wt	-	< 0.006	-	-	-

Sample Type: Soil						
Sample Name:		S8 0.0 18-Apr-2012	S7 0.0 18-Apr-2012	S6 0.0 18-Apr-2012	S5 0.0 18-Apr-2012	S4 0.0 18-Apr-2012
Lab Number:		999240.21	999240.22	999240.23	999240.24	999240.25
Multiresidue Pesticides in Soil samples by GCMS						
Aldrin	mg/kg dry wt	-	< 0.010	-	-	-
Atrazine	mg/kg dry wt	-	< 0.007	-	-	-
Atrazine-desethyl	mg/kg dry wt	-	< 0.007	-	-	-
Atrazine-desisopropyl	mg/kg dry wt	-	< 0.013	-	-	-
Azaconazole	mg/kg dry wt	-	< 0.004	-	-	-
Azinphos-methyl	mg/kg dry wt	-	< 0.013	-	-	-
Benalaxyl	mg/kg dry wt	-	< 0.004	-	-	-
Bendiocarb	mg/kg dry wt	-	< 0.007	-	-	-
Benodanil	mg/kg dry wt	-	< 0.013	-	-	-
alpha-BHC	mg/kg dry wt	-	< 0.010	-	-	-
beta-BHC	mg/kg dry wt	-	< 0.010	-	-	-
delta-BHC	mg/kg dry wt	-	< 0.010	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	< 0.010	-	-	-
Bifenthrin	mg/kg dry wt	-	< 0.004	-	-	-
Bitertanol	mg/kg dry wt	-	< 0.013	-	-	-
Bromacil	mg/kg dry wt	-	< 0.007	-	-	-
Bromophos-ethyl	mg/kg dry wt	-	< 0.007	-	-	-
Bromopropylate	mg/kg dry wt	-	< 0.007	-	-	-
Bupirimate	mg/kg dry wt	-	< 0.007	-	-	-
Buprofezin	mg/kg dry wt	-	< 0.007	-	-	-
Butachlor	mg/kg dry wt	-	< 0.007	-	-	-
Captafol	mg/kg dry wt	-	< 0.04	-	-	-
Captan	mg/kg dry wt	-	< 0.013	-	-	-
Carbaryl	mg/kg dry wt	-	< 0.007	-	-	-
Carbofenothion	mg/kg dry wt	-	< 0.007	-	-	-
Carbofuran	mg/kg dry wt	-	< 0.007	-	-	-
Carboxin	mg/kg dry wt	-	< 0.007	-	-	-
cis-Chlordane	mg/kg dry wt	-	< 0.010	-	-	-
trans-Chlordane	mg/kg dry wt	-	< 0.010	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	< 0.04	-	-	-
Chlorfenvinphos	mg/kg dry wt	-	< 0.007	-	-	-
Chlorfluazuron	mg/kg dry wt	-	< 0.007	-	-	-
Chlorothalonil	mg/kg dry wt	-	< 0.007	-	-	-
Chlorpropham	mg/kg dry wt	-	< 0.013	-	-	-
Chlorpyrifos	mg/kg dry wt	-	< 0.007	-	-	-
Chlorpyrifos-methyl	mg/kg dry wt	-	< 0.007	-	-	-
Chlortoluron	mg/kg dry wt	-	< 0.013	-	-	-
Chlozolinate	mg/kg dry wt	-	< 0.007	-	-	-
Coumaphos	mg/kg dry wt	-	< 0.013	-	-	-
Cyanazine	mg/kg dry wt	-	< 0.007	-	-	-
Cyfluthrin	mg/kg dry wt	-	< 0.007	-	-	-
Cyhalothrin	mg/kg dry wt	-	< 0.007	-	-	-
Cypermethrin	mg/kg dry wt	-	< 0.013	-	-	-
Cyproconazole	mg/kg dry wt	-	< 0.009	-	-	-
Cyprodinil	mg/kg dry wt	-	< 0.007	-	-	-
2,4'-DDD	mg/kg dry wt	-	< 0.010	-	-	-
4,4'-DDD	mg/kg dry wt	-	< 0.010	-	-	-
2,4'-DDE	mg/kg dry wt	-	< 0.010	-	-	-
4,4'-DDE	mg/kg dry wt	-	< 0.010	-	-	-
2,4'-DDT	mg/kg dry wt	-	< 0.010	-	-	-
4,4'-DDT	mg/kg dry wt	-	< 0.010	-	-	-
Total DDT Isomers	mg/kg dry wt	-	< 0.06	-	-	-
Deltamethrin	mg/kg dry wt	-	< 0.007	-	-	-
Demeton-S-methyl	mg/kg dry wt	-	< 0.013	-	-	-

Sample Type: Soil						
Sample Name:		S8 0.0 18-Apr-2012	S7 0.0 18-Apr-2012	S6 0.0 18-Apr-2012	S5 0.0 18-Apr-2012	S4 0.0 18-Apr-2012
Lab Number:		999240.21	999240.22	999240.23	999240.24	999240.25
Multiresidue Pesticides in Soil samples by GCMS						
Diazinon	mg/kg dry wt	-	< 0.004	-	-	-
Dichlobenil	mg/kg dry wt	-	< 0.007	-	-	-
Dichlofenthion	mg/kg dry wt	-	< 0.007	-	-	-
Dichlofluanid	mg/kg dry wt	-	< 0.007	-	-	-
Dichloran	mg/kg dry wt	-	< 0.03	-	-	-
Dichlorvos	mg/kg dry wt	-	< 0.010	-	-	-
Dicofol	mg/kg dry wt	-	< 0.04	-	-	-
Dicrotophos	mg/kg dry wt	-	< 0.007	-	-	-
Dieldrin	mg/kg dry wt	-	< 0.010	-	-	-
Difenoconazole	mg/kg dry wt	-	< 0.010	-	-	-
Dimethoate	mg/kg dry wt	-	< 0.013	-	-	-
Dinocap	mg/kg dry wt	-	< 0.08	-	-	-
Diphenylamine	mg/kg dry wt	-	< 0.013	-	-	-
Disulfoton	mg/kg dry wt	-	< 0.007	-	-	-
Diuron	mg/kg dry wt	-	< 0.007	-	-	-
Endosulfan I	mg/kg dry wt	-	< 0.010	-	-	-
Endosulfan II	mg/kg dry wt	-	< 0.010	-	-	-
Endosulfan sulphate	mg/kg dry wt	-	< 0.010	-	-	-
Endrin	mg/kg dry wt	-	< 0.010	-	-	-
Endrin Aldehyde	mg/kg dry wt	-	< 0.010	-	-	-
Endrin ketone	mg/kg dry wt	-	< 0.010	-	-	-
EPN	mg/kg dry wt	-	< 0.007	-	-	-
Esfenvalerate	mg/kg dry wt	-	< 0.009	-	-	-
Ethion	mg/kg dry wt	-	< 0.007	-	-	-
Etrimfos	mg/kg dry wt	-	< 0.007	-	-	-
Famphur	mg/kg dry wt	-	< 0.007	-	-	-
Fenamiphos	mg/kg dry wt	-	< 0.007	-	-	-
Fenarimol	mg/kg dry wt	-	< 0.007	-	-	-
Fenitrothion	mg/kg dry wt	-	< 0.007	-	-	-
Fenpropathrin	mg/kg dry wt	-	< 0.007	-	-	-
Fenpropimorph	mg/kg dry wt	-	< 0.007	-	-	-
Fensulfothion	mg/kg dry wt	-	< 0.007	-	-	-
Fenthion	mg/kg dry wt	-	< 0.007	-	-	-
Fenvalerate	mg/kg dry wt	-	< 0.009	-	-	-
Fluazifop-butyl	mg/kg dry wt	-	< 0.007	-	-	-
Fluometuron	mg/kg dry wt	-	< 0.007	-	-	-
Flusilazole	mg/kg dry wt	-	< 0.007	-	-	-
Fluvalinate	mg/kg dry wt	-	< 0.006	-	-	-
Folpet	mg/kg dry wt	-	< 0.013	-	-	-
Furalaxyl	mg/kg dry wt	-	< 0.004	-	-	-
Haloxyfop-methyl	mg/kg dry wt	-	< 0.007	-	-	-
Heptachlor	mg/kg dry wt	-	< 0.010	-	-	-
Heptachlor epoxide	mg/kg dry wt	-	< 0.010	-	-	-
Hexachlorobenzene	mg/kg dry wt	-	< 0.010	-	-	-
Hexaconazole	mg/kg dry wt	-	< 0.007	-	-	-
Hexazinone	mg/kg dry wt	-	< 0.004	-	-	-
Hexythiazox	mg/kg dry wt	-	< 0.04	-	-	-
Imazalil	mg/kg dry wt	-	< 0.04	-	-	-
Indoxacarb	mg/kg dry wt	-	< 0.007	-	-	-
Iodofenphos	mg/kg dry wt	-	< 0.007	-	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	< 0.04	-	-	-
Iprodione	mg/kg dry wt	-	< 0.007	-	-	-
Isazophos	mg/kg dry wt	-	< 0.007	-	-	-
Isofenphos	mg/kg dry wt	-	< 0.004	-	-	-

Sample Type: Soil						
Sample Name:		S8 0.0 18-Apr-2012	S7 0.0 18-Apr-2012	S6 0.0 18-Apr-2012	S5 0.0 18-Apr-2012	S4 0.0 18-Apr-2012
Lab Number:		999240.21	999240.22	999240.23	999240.24	999240.25
Multiresidue Pesticides in Soil samples by GCMS						
Kresoxim-methyl	mg/kg dry wt	-	< 0.004	-	-	-
Leptophos	mg/kg dry wt	-	< 0.007	-	-	-
Linuron	mg/kg dry wt	-	< 0.007	-	-	-
Malathion	mg/kg dry wt	-	< 0.007	-	-	-
Metalaxyl	mg/kg dry wt	-	< 0.007	-	-	-
Methacrifos	mg/kg dry wt	-	< 0.007	-	-	-
Methamidophos	mg/kg dry wt	-	< 0.04	-	-	-
Methidathion	mg/kg dry wt	-	< 0.007	-	-	-
Methiocarb	mg/kg dry wt	-	< 0.007	-	-	-
Methoxychlor	mg/kg dry wt	-	< 0.010	-	-	-
Metolachlor	mg/kg dry wt	-	< 0.006	-	-	-
Metribuzin	mg/kg dry wt	-	< 0.007	-	-	-
Mevinphos	mg/kg dry wt	-	< 0.018	-	-	-
Molinate	mg/kg dry wt	-	< 0.013	-	-	-
Myclobutanil	mg/kg dry wt	-	< 0.007	-	-	-
Naled	mg/kg dry wt	-	< 0.04	-	-	-
Nitrofen	mg/kg dry wt	-	< 0.013	-	-	-
Nitrothal-isopropyl	mg/kg dry wt	-	< 0.007	-	-	-
Norflurazon	mg/kg dry wt	-	< 0.013	-	-	-
Omethoate	mg/kg dry wt	-	< 0.04	-	-	-
Oxadiazon	mg/kg dry wt	-	< 0.007	-	-	-
Oxychlordane	mg/kg dry wt	-	< 0.004	-	-	-
Oxyfluorfen	mg/kg dry wt	-	< 0.004	-	-	-
Paclobutrazol	mg/kg dry wt	-	< 0.007	-	-	-
Parathion-ethyl	mg/kg dry wt	-	< 0.007	-	-	-
Parathion-methyl	mg/kg dry wt	-	< 0.007	-	-	-
Penconazole	mg/kg dry wt	-	< 0.007	-	-	-
Pendimethalin	mg/kg dry wt	-	< 0.007	-	-	-
Permethrin	mg/kg dry wt	-	< 0.003	-	-	-
Phorate	mg/kg dry wt	-	< 0.013	-	-	-
Phosmet	mg/kg dry wt	-	< 0.007	-	-	-
Phosphamidon	mg/kg dry wt	-	< 0.007	-	-	-
Pirimicarb	mg/kg dry wt	-	< 0.007	-	-	-
Pirimiphos-methyl	mg/kg dry wt	-	< 0.007	-	-	-
Prochloraz	mg/kg dry wt	-	< 0.04	-	-	-
Procymidone	mg/kg dry wt	-	< 0.007	-	-	-
Prometryn	mg/kg dry wt	-	< 0.004	-	-	-
Propachlor	mg/kg dry wt	-	< 0.007	-	-	-
Propanil	mg/kg dry wt	-	< 0.03	-	-	-
Propazine	mg/kg dry wt	-	< 0.004	-	-	-
Propetamphos	mg/kg dry wt	-	< 0.007	-	-	-
Propham	mg/kg dry wt	-	< 0.007	-	-	-
Propiconazole	mg/kg dry wt	-	< 0.006	-	-	-
Prothiofos	mg/kg dry wt	-	< 0.007	-	-	-
Pyrazophos	mg/kg dry wt	-	< 0.007	-	-	-
Pyrifenox	mg/kg dry wt	-	< 0.009	-	-	-
Pyrimethanil	mg/kg dry wt	-	< 0.007	-	-	-
Pyriproxyfen	mg/kg dry wt	-	< 0.007	-	-	-
Quintozene	mg/kg dry wt	-	< 0.013	-	-	-
Quizalofop-ethyl	mg/kg dry wt	-	< 0.007	-	-	-
Simazine	mg/kg dry wt	-	< 0.007	-	-	-
Simetryn	mg/kg dry wt	-	< 0.007	-	-	-
Sulfentrazone	mg/kg dry wt	-	< 0.04	-	-	-
Sulfotep	mg/kg dry wt	-	< 0.007	-	-	-

Sample Type: Soil						
Sample Name:		S8 0.0 18-Apr-2012	S7 0.0 18-Apr-2012	S6 0.0 18-Apr-2012	S5 0.0 18-Apr-2012	S4 0.0 18-Apr-2012
Lab Number:		999240.21	999240.22	999240.23	999240.24	999240.25
Multiresidue Pesticides in Soil samples by GCMS						
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	< 0.013	-	-	-
Tebuconazole	mg/kg dry wt	-	< 0.007	-	-	-
Tebufenpyrad	mg/kg dry wt	-	< 0.004	-	-	-
Terbacil	mg/kg dry wt	-	< 0.007	-	-	-
Terbufos	mg/kg dry wt	-	< 0.007	-	-	-
Terbumeton	mg/kg dry wt	-	< 0.007	-	-	-
Terbuthylazine	mg/kg dry wt	-	< 0.004	-	-	-
Terbuthylazine-desethyl	mg/kg dry wt	-	< 0.007	-	-	-
Terbutryn	mg/kg dry wt	-	< 0.007	-	-	-
Tetrachlorvinphos	mg/kg dry wt	-	< 0.007	-	-	-
Thiabendazole	mg/kg dry wt	-	< 0.04	-	-	-
Thiobencarb	mg/kg dry wt	-	< 0.007	-	-	-
Thiometon	mg/kg dry wt	-	< 0.013	-	-	-
Tolylfluanid	mg/kg dry wt	-	< 0.004	-	-	-
Triadimefon	mg/kg dry wt	-	< 0.007	-	-	-
Triazophos	mg/kg dry wt	-	< 0.007	-	-	-
Trifluralin	mg/kg dry wt	-	< 0.007	-	-	-
Vinclozolin	mg/kg dry wt	-	< 0.007	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
alpha-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
beta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
delta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
cis-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
trans-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
4,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
2,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
4,4'-DDE	mg/kg dry wt	0.015	-	0.012	< 0.011	< 0.011
2,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
4,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Dieldrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Endosulfan I	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Endosulfan II	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Endrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Endrin ketone	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Heptachlor	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011
Methoxychlor	mg/kg dry wt	< 0.011	-	< 0.011	< 0.011	< 0.011

Sample Name:		S3 0.0 18-Apr-2012	S2 0.0 18-Apr-2012	S1 0.0 18-Apr-2012	S13 0.0 18-Apr-2012	S14 0.0 18-Apr-2012
Lab Number:		999240.26	999240.27	999240.28	999240.29	999240.30
Individual Tests						
Dry Matter	g/100g as rcvd	-	81	-	-	-
pH*	pH Units	-	5.8	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	< 2	< 2	< 2	< 2	3
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	0.10	0.11	< 0.10	< 0.10

Sample Type: Soil						
Sample Name:		S3 0.0 18-Apr-2012	S2 0.0 18-Apr-2012	S1 0.0 18-Apr-2012	S13 0.0 18-Apr-2012	S14 0.0 18-Apr-2012
Lab Number:		999240.26	999240.27	999240.28	999240.29	999240.30
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Chromium	mg/kg dry wt	14	12	13	14	19
Total Recoverable Copper	mg/kg dry wt	4	4	4	4	8
Total Recoverable Lead	mg/kg dry wt	12.1	10.8	11.2	11.5	15.3
Total Recoverable Nickel	mg/kg dry wt	8	9	8	7	13
Total Recoverable Zinc	mg/kg dry wt	47	45	44	42	53
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	< 0.008	-	-	-
Alachlor	mg/kg dry wt	-	< 0.006	-	-	-
Aldrin	mg/kg dry wt	-	< 0.010	-	-	-
Atrazine	mg/kg dry wt	-	< 0.008	-	-	-
Atrazine-desethyl	mg/kg dry wt	-	< 0.008	-	-	-
Atrazine-desisopropyl	mg/kg dry wt	-	< 0.015	-	-	-
Azaconazole	mg/kg dry wt	-	< 0.004	-	-	-
Azinphos-methyl	mg/kg dry wt	-	< 0.015	-	-	-
Benalaxyl	mg/kg dry wt	-	< 0.004	-	-	-
Bendiocarb	mg/kg dry wt	-	< 0.008	-	-	-
Benodanil	mg/kg dry wt	-	< 0.015	-	-	-
alpha-BHC	mg/kg dry wt	-	< 0.010	-	-	-
beta-BHC	mg/kg dry wt	-	< 0.010	-	-	-
delta-BHC	mg/kg dry wt	-	< 0.010	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	< 0.010	-	-	-
Bifenthrin	mg/kg dry wt	-	< 0.004	-	-	-
Bitertanol	mg/kg dry wt	-	< 0.015	-	-	-
Bromacil	mg/kg dry wt	-	< 0.008	-	-	-
Bromophos-ethyl	mg/kg dry wt	-	< 0.008	-	-	-
Bromopropylate	mg/kg dry wt	-	< 0.008	-	-	-
Bupirimate	mg/kg dry wt	-	< 0.008	-	-	-
Buprofezin	mg/kg dry wt	-	< 0.008	-	-	-
Butachlor	mg/kg dry wt	-	< 0.008	-	-	-
Captafol	mg/kg dry wt	-	< 0.04	-	-	-
Captan	mg/kg dry wt	-	< 0.015	-	-	-
Carbaryl	mg/kg dry wt	-	< 0.008	-	-	-
Carbofenothion	mg/kg dry wt	-	< 0.008	-	-	-
Carbofuran	mg/kg dry wt	-	< 0.008	-	-	-
Carboxin	mg/kg dry wt	-	< 0.008	-	-	-
cis-Chlordane	mg/kg dry wt	-	< 0.010	-	-	-
trans-Chlordane	mg/kg dry wt	-	< 0.010	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	< 0.04	-	-	-
Chlorfenvinphos	mg/kg dry wt	-	< 0.008	-	-	-
Chlorfluazuron	mg/kg dry wt	-	< 0.008	-	-	-
Chlorothalonil	mg/kg dry wt	-	< 0.008	-	-	-
Chlorpropham	mg/kg dry wt	-	< 0.015	-	-	-
Chlorpyrifos	mg/kg dry wt	-	< 0.008	-	-	-
Chlorpyrifos-methyl	mg/kg dry wt	-	< 0.008	-	-	-
Chlortoluron	mg/kg dry wt	-	< 0.015	-	-	-
Chlozolinate	mg/kg dry wt	-	< 0.008	-	-	-
Coumaphos	mg/kg dry wt	-	< 0.015	-	-	-
Cyanazine	mg/kg dry wt	-	< 0.008	-	-	-
Cyfluthrin	mg/kg dry wt	-	< 0.008	-	-	-
Cyhalothrin	mg/kg dry wt	-	< 0.008	-	-	-
Cypermethrin	mg/kg dry wt	-	< 0.015	-	-	-
Cyproconazole	mg/kg dry wt	-	< 0.011	-	-	-
Cyprodinil	mg/kg dry wt	-	< 0.008	-	-	-
2,4'-DDD	mg/kg dry wt	-	< 0.010	-	-	-

Sample Type: Soil						
Sample Name:		S3 0.0 18-Apr-2012	S2 0.0 18-Apr-2012	S1 0.0 18-Apr-2012	S13 0.0 18-Apr-2012	S14 0.0 18-Apr-2012
Lab Number:		999240.26	999240.27	999240.28	999240.29	999240.30
Multiresidue Pesticides in Soil samples by GCMS						
4,4'-DDD	mg/kg dry wt	-	< 0.010	-	-	-
2,4'-DDE	mg/kg dry wt	-	< 0.010	-	-	-
4,4'-DDE	mg/kg dry wt	-	< 0.010	-	-	-
2,4'-DDT	mg/kg dry wt	-	< 0.010	-	-	-
4,4'-DDT	mg/kg dry wt	-	< 0.010	-	-	-
Total DDT Isomers	mg/kg dry wt	-	< 0.06	-	-	-
Deltamethrin	mg/kg dry wt	-	< 0.008	-	-	-
Demeton-S-methyl	mg/kg dry wt	-	< 0.015	-	-	-
Diazinon	mg/kg dry wt	-	< 0.004	-	-	-
Dichlobenil	mg/kg dry wt	-	< 0.008	-	-	-
Dichlofenthion	mg/kg dry wt	-	< 0.008	-	-	-
Dichlofluanid	mg/kg dry wt	-	< 0.008	-	-	-
Dichloran	mg/kg dry wt	-	< 0.03	-	-	-
Dichlorvos	mg/kg dry wt	-	< 0.010	-	-	-
Dicofol	mg/kg dry wt	-	< 0.04	-	-	-
Dicrotophos	mg/kg dry wt	-	< 0.008	-	-	-
Dieldrin	mg/kg dry wt	-	< 0.010	-	-	-
Difenoconazole	mg/kg dry wt	-	< 0.011	-	-	-
Dimethoate	mg/kg dry wt	-	< 0.015	-	-	-
Dinocap	mg/kg dry wt	-	< 0.09	-	-	-
Diphenylamine	mg/kg dry wt	-	< 0.015	-	-	-
Disulfoton	mg/kg dry wt	-	< 0.008	-	-	-
Diuron	mg/kg dry wt	-	< 0.008	-	-	-
Endosulfan I	mg/kg dry wt	-	< 0.010	-	-	-
Endosulfan II	mg/kg dry wt	-	< 0.010	-	-	-
Endosulfan sulphate	mg/kg dry wt	-	< 0.010	-	-	-
Endrin	mg/kg dry wt	-	< 0.010	-	-	-
Endrin Aldehyde	mg/kg dry wt	-	< 0.010	-	-	-
Endrin ketone	mg/kg dry wt	-	< 0.010	-	-	-
EPN	mg/kg dry wt	-	< 0.008	-	-	-
Esfenvalerate	mg/kg dry wt	-	< 0.011	-	-	-
Ethion	mg/kg dry wt	-	< 0.008	-	-	-
Etrimfos	mg/kg dry wt	-	< 0.008	-	-	-
Famphur	mg/kg dry wt	-	< 0.008	-	-	-
Fenamiphos	mg/kg dry wt	-	< 0.008	-	-	-
Fenarimol	mg/kg dry wt	-	< 0.008	-	-	-
Fenitrothion	mg/kg dry wt	-	< 0.008	-	-	-
Fenpropathrin	mg/kg dry wt	-	< 0.008	-	-	-
Fenpropimorph	mg/kg dry wt	-	< 0.008	-	-	-
Fensulfothion	mg/kg dry wt	-	< 0.008	-	-	-
Fenthion	mg/kg dry wt	-	< 0.008	-	-	-
Fenvalerate	mg/kg dry wt	-	< 0.011	-	-	-
Fluazifop-butyl	mg/kg dry wt	-	< 0.008	-	-	-
Fluometuron	mg/kg dry wt	-	< 0.008	-	-	-
Flusilazole	mg/kg dry wt	-	< 0.008	-	-	-
Fluvalinate	mg/kg dry wt	-	< 0.006	-	-	-
Folpet	mg/kg dry wt	-	< 0.015	-	-	-
Furalaxyl	mg/kg dry wt	-	< 0.004	-	-	-
Haloxyfop-methyl	mg/kg dry wt	-	< 0.008	-	-	-
Heptachlor	mg/kg dry wt	-	< 0.010	-	-	-
Heptachlor epoxide	mg/kg dry wt	-	< 0.010	-	-	-
Hexachlorobenzene	mg/kg dry wt	-	< 0.010	-	-	-
Hexaconazole	mg/kg dry wt	-	< 0.008	-	-	-
Hexazinone	mg/kg dry wt	-	< 0.004	-	-	-
Hexythiazox	mg/kg dry wt	-	< 0.04	-	-	-

Sample Type: Soil						
Sample Name:		S3 0.0 18-Apr-2012	S2 0.0 18-Apr-2012	S1 0.0 18-Apr-2012	S13 0.0 18-Apr-2012	S14 0.0 18-Apr-2012
Lab Number:		999240.26	999240.27	999240.28	999240.29	999240.30
Multiresidue Pesticides in Soil samples by GCMS						
Imazalil	mg/kg dry wt	-	< 0.04	-	-	-
Indoxacarb	mg/kg dry wt	-	< 0.008	-	-	-
Iodofenphos	mg/kg dry wt	-	< 0.008	-	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	< 0.04	-	-	-
Iprodione	mg/kg dry wt	-	< 0.008	-	-	-
Isazophos	mg/kg dry wt	-	< 0.008	-	-	-
Isofenphos	mg/kg dry wt	-	< 0.004	-	-	-
Kresoxim-methyl	mg/kg dry wt	-	< 0.004	-	-	-
Leptophos	mg/kg dry wt	-	< 0.008	-	-	-
Linuron	mg/kg dry wt	-	< 0.008	-	-	-
Malathion	mg/kg dry wt	-	< 0.008	-	-	-
Metalaxyl	mg/kg dry wt	-	< 0.008	-	-	-
Methacrifos	mg/kg dry wt	-	< 0.008	-	-	-
Methamidophos	mg/kg dry wt	-	< 0.04	-	-	-
Methidathion	mg/kg dry wt	-	< 0.008	-	-	-
Methiocarb	mg/kg dry wt	-	< 0.008	-	-	-
Methoxychlor	mg/kg dry wt	-	< 0.010	-	-	-
Metolachlor	mg/kg dry wt	-	< 0.006	-	-	-
Metribuzin	mg/kg dry wt	-	< 0.008	-	-	-
Mevinphos	mg/kg dry wt	-	< 0.03	-	-	-
Molinate	mg/kg dry wt	-	< 0.015	-	-	-
Myclobutanil	mg/kg dry wt	-	< 0.008	-	-	-
Naled	mg/kg dry wt	-	< 0.04	-	-	-
Nitrofen	mg/kg dry wt	-	< 0.015	-	-	-
Nitrothal-isopropyl	mg/kg dry wt	-	< 0.008	-	-	-
Norflurazon	mg/kg dry wt	-	< 0.015	-	-	-
Omethoate	mg/kg dry wt	-	< 0.04	-	-	-
Oxadiazon	mg/kg dry wt	-	< 0.008	-	-	-
Oxychlordane	mg/kg dry wt	-	< 0.004	-	-	-
Oxyfluorfen	mg/kg dry wt	-	< 0.004	-	-	-
Paclobutrazol	mg/kg dry wt	-	< 0.008	-	-	-
Parathion-ethyl	mg/kg dry wt	-	< 0.008	-	-	-
Parathion-methyl	mg/kg dry wt	-	< 0.008	-	-	-
Penconazole	mg/kg dry wt	-	< 0.008	-	-	-
Pendimethalin	mg/kg dry wt	-	< 0.008	-	-	-
Permethrin	mg/kg dry wt	-	< 0.003	-	-	-
Phorate	mg/kg dry wt	-	< 0.015	-	-	-
Phosmet	mg/kg dry wt	-	< 0.008	-	-	-
Phosphamidon	mg/kg dry wt	-	< 0.008	-	-	-
Pirimicarb	mg/kg dry wt	-	< 0.008	-	-	-
Pirimiphos-methyl	mg/kg dry wt	-	< 0.008	-	-	-
Prochloraz	mg/kg dry wt	-	< 0.04	-	-	-
Procymidone	mg/kg dry wt	-	< 0.008	-	-	-
Prometryn	mg/kg dry wt	-	< 0.004	-	-	-
Propachlor	mg/kg dry wt	-	< 0.008	-	-	-
Propanil	mg/kg dry wt	-	< 0.03	-	-	-
Propazine	mg/kg dry wt	-	< 0.004	-	-	-
Propetamphos	mg/kg dry wt	-	< 0.008	-	-	-
Propham	mg/kg dry wt	-	< 0.008	-	-	-
Propiconazole	mg/kg dry wt	-	< 0.006	-	-	-
Prothiofos	mg/kg dry wt	-	< 0.008	-	-	-
Pyrazophos	mg/kg dry wt	-	< 0.008	-	-	-
Pyrifenox	mg/kg dry wt	-	< 0.011	-	-	-
Pyrimethanil	mg/kg dry wt	-	< 0.008	-	-	-

Sample Type: Soil						
Sample Name:		S3 0.0 18-Apr-2012	S2 0.0 18-Apr-2012	S1 0.0 18-Apr-2012	S13 0.0 18-Apr-2012	S14 0.0 18-Apr-2012
Lab Number:		999240.26	999240.27	999240.28	999240.29	999240.30
Multiresidue Pesticides in Soil samples by GCMS						
Pyriproxyfen	mg/kg dry wt	-	< 0.008	-	-	-
Quintozene	mg/kg dry wt	-	< 0.015	-	-	-
Quizalofop-ethyl	mg/kg dry wt	-	< 0.008	-	-	-
Simazine	mg/kg dry wt	-	< 0.008	-	-	-
Simetryn	mg/kg dry wt	-	< 0.008	-	-	-
Sulfentrazone	mg/kg dry wt	-	< 0.04	-	-	-
Sulfotep	mg/kg dry wt	-	< 0.008	-	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	< 0.015	-	-	-
Tebuconazole	mg/kg dry wt	-	< 0.008	-	-	-
Tebufenpyrad	mg/kg dry wt	-	< 0.004	-	-	-
Terbacil	mg/kg dry wt	-	< 0.008	-	-	-
Terbufos	mg/kg dry wt	-	< 0.008	-	-	-
Terbumeton	mg/kg dry wt	-	< 0.008	-	-	-
Terbuthylazine	mg/kg dry wt	-	< 0.004	-	-	-
Terbuthylazine-desethyl	mg/kg dry wt	-	< 0.008	-	-	-
Terbutryn	mg/kg dry wt	-	< 0.008	-	-	-
Tetrachlorvinphos	mg/kg dry wt	-	< 0.008	-	-	-
Thiabendazole	mg/kg dry wt	-	< 0.04	-	-	-
Thiobencarb	mg/kg dry wt	-	< 0.008	-	-	-
Thiometon	mg/kg dry wt	-	< 0.015	-	-	-
Tolylfluanid	mg/kg dry wt	-	< 0.004	-	-	-
Triadimefon	mg/kg dry wt	-	< 0.008	-	-	-
Triazophos	mg/kg dry wt	-	< 0.008	-	-	-
Trifluralin	mg/kg dry wt	-	< 0.008	-	-	-
Vinclozolin	mg/kg dry wt	-	< 0.008	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	< 0.04	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.011	1.10	0.025
2,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.011	0.084	< 0.010
4,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.011	0.27	< 0.010
Dieldrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Endosulfan I	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.011	-	< 0.011	< 0.010	< 0.010

Sample Type: Soil						
Sample Name:		S15 0.0 18-Apr-2012				
Lab Number:		999240.31				
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	< 2	-	-	-	-
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	-	-	-	-
Total Recoverable Chromium	mg/kg dry wt	12	-	-	-	-
Total Recoverable Copper	mg/kg dry wt	3	-	-	-	-
Total Recoverable Lead	mg/kg dry wt	10.9	-	-	-	-
Total Recoverable Nickel	mg/kg dry wt	7	-	-	-	-
Total Recoverable Zinc	mg/kg dry wt	37	-	-	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	-	-	-
alpha-BHC	mg/kg dry wt	< 0.011	-	-	-	-
beta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
delta-BHC	mg/kg dry wt	< 0.011	-	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	-	-	-
4,4'-DDE	mg/kg dry wt	0.37	-	-	-	-
2,4'-DDT	mg/kg dry wt	0.018	-	-	-	-
4,4'-DDT	mg/kg dry wt	0.111	-	-	-	-
Dieldrin	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan I	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan II	mg/kg dry wt	< 0.011	-	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	-	-	-
Endrin	mg/kg dry wt	< 0.011	-	-	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	-	-	-
Endrin ketone	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor	mg/kg dry wt	< 0.011	-	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	-	-	-
Methoxychlor	mg/kg dry wt	< 0.011	-	-	-	-

Analyst's Comments

For sample 999240.13 Captan has been reported. Due to difficult matrix and interfering hydrocarbons in the sample, the Captan result is indicative only.

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. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-31
Soil Prep Dry & Sieve for Agriculture	Air dried at 35°C and sieved, <2mm fraction.	-	2, 5, 16, 27
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	1-31
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GPC cleanup, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	-	2, 5, 8, 10, 13, 16, 22, 27

Sample Type: Soil			
Test	**Method Description**	**Default Detection Limit**	**Samples**
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	-	1, 3-4, 6-7, 9, 11-12, 14-15, 17-21, 23-26, 28-31
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	2, 5, 8, 10, 13, 16, 22, 27
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-31
pH*	1:2 (v/v) soil : water slurry followed by potentiometric determination of pH.	0.1 pH Units	2, 5, 16, 27

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.

Ara Heron BSc (Tech)
Client Services Manager - Environmental Division

Hill Laboratories
BETTER TESTING BETTER RESULTS

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:	Tonkin & Taylor	**Lab No:**	999977	SPv2
Contact:	Lucy Hine	**Date Registered:**	20-Apr-2012	
	C/- Tonkin & Taylor	**Date Reported:**	02-May-2012	
	PO Box 13055	**Quote No:**		
	CHRISTCHURCH 8141	**Order No:**	53036.001	
		Client Reference:	Grid + Target	
		Submitted By:	Wendy Dean	

Sample Type: Soil

Sample Name:		S16 0.0 19-Apr-2012	S17 0.0 19-Apr-2012	S18 0.0 19-Apr-2012	S39 0.0 19-Apr-2012	S40 0.0 19-Apr-2012
Lab Number:		999977.1	999977.2	999977.3	999977.4	999977.5
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	85	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	2	< 2 #1	< 2	< 2	2
Total Recoverable Cadmium	mg/kg dry wt	0.18	0.15	0.17	0.13	0.13
Total Recoverable Chromium	mg/kg dry wt	11	11	12	10	11
Total Recoverable Copper	mg/kg dry wt	5	4	5	4	4
Total Recoverable Lead	mg/kg dry wt	12.6	10.9	11.9	12.0	12.6
Total Recoverable Nickel	mg/kg dry wt	6	6	6	6	7
Total Recoverable Zinc	mg/kg dry wt	42	38	40	40	37
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	< 0.007	-	-
Alachlor	mg/kg dry wt	-	-	< 0.006	-	-
Aldrin	mg/kg dry wt	-	-	< 0.011	-	-
Atrazine	mg/kg dry wt	-	-	< 0.007	-	-
Atrazine-desethyl	mg/kg dry wt	-	-	< 0.007	-	-
Atrazine-desisopropyl	mg/kg dry wt	-	-	< 0.014	-	-
Azaconazole	mg/kg dry wt	-	-	< 0.004	-	-
Azinphos-methyl	mg/kg dry wt	-	-	< 0.014	-	-
Benalaxyl	mg/kg dry wt	-	-	< 0.004	-	-
Bendiocarb	mg/kg dry wt	-	-	< 0.007	-	-
Benodanil	mg/kg dry wt	-	-	< 0.014	-	-
alpha-BHC	mg/kg dry wt	-	-	< 0.011	-	-
beta-BHC	mg/kg dry wt	-	-	< 0.011	-	-
delta-BHC	mg/kg dry wt	-	-	< 0.011	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.011	-	-
Bifenthrin	mg/kg dry wt	-	-	< 0.004	-	-
Bitertanol	mg/kg dry wt	-	-	< 0.014	-	-
Bromacil	mg/kg dry wt	-	-	< 0.007	-	-
Bromophos-ethyl	mg/kg dry wt	-	-	< 0.007	-	-
Bromopropylate	mg/kg dry wt	-	-	< 0.007	-	-
Bupirimate	mg/kg dry wt	-	-	< 0.007	-	-
Buprofezin	mg/kg dry wt	-	-	< 0.007	-	-
Butachlor	mg/kg dry wt	-	-	< 0.007	-	-
Captafol	mg/kg dry wt	-	-	< 0.04	-	-
Captan	mg/kg dry wt	-	-	< 0.014	-	-
Carbaryl	mg/kg dry wt	-	-	< 0.007	-	-
Carbofenothion	mg/kg dry wt	-	-	< 0.007	-	-

Sample Type: Soil						
Sample Name:		S16 0.0 19-Apr-2012	S17 0.0 19-Apr-2012	S18 0.0 19-Apr-2012	S39 0.0 19-Apr-2012	S40 0.0 19-Apr-2012
Lab Number:		999977.1	999977.2	999977.3	999977.4	999977.5
Multiresidue Pesticides in Soil samples by GCMS						
Carbofuran	mg/kg dry wt	-	-	< 0.007	-	-
Carboxin	mg/kg dry wt	-	-	< 0.007	-	-
cis-Chlordane	mg/kg dry wt	-	-	< 0.011	-	-
trans-Chlordane	mg/kg dry wt	-	-	< 0.011	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	< 0.04	-	-
Chlorfenvinphos	mg/kg dry wt	-	-	< 0.007	-	-
Chlorfluazuron	mg/kg dry wt	-	-	< 0.007	-	-
Chlorothalonil	mg/kg dry wt	-	-	< 0.007	-	-
Chlorpropham	mg/kg dry wt	-	-	< 0.014	-	-
Chlorpyrifos	mg/kg dry wt	-	-	< 0.007	-	-
Chlorpyrifos-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Chlortoluron	mg/kg dry wt	-	-	< 0.014	-	-
Chlozolinate	mg/kg dry wt	-	-	< 0.007	-	-
Coumaphos	mg/kg dry wt	-	-	< 0.014	-	-
Cyanazine	mg/kg dry wt	-	-	< 0.007	-	-
Cyfluthrin	mg/kg dry wt	-	-	< 0.007	-	-
Cyhalothrin	mg/kg dry wt	-	-	< 0.007	-	-
Cypermethrin	mg/kg dry wt	-	-	< 0.014	-	-
Cyproconazole	mg/kg dry wt	-	-	< 0.010	-	-
Cyprodinil	mg/kg dry wt	-	-	< 0.007	-	-
2,4'-DDD	mg/kg dry wt	-	-	< 0.011	-	-
4,4'-DDD	mg/kg dry wt	-	-	< 0.011	-	-
2,4'-DDE	mg/kg dry wt	-	-	< 0.011	-	-
4,4'-DDE	mg/kg dry wt	-	-	0.092	-	-
2,4'-DDT	mg/kg dry wt	-	-	< 0.011	-	-
4,4'-DDT	mg/kg dry wt	-	-	< 0.011	-	-
Total DDT Isomers	mg/kg dry wt	-	-	0.09	-	-
Deltamethrin	mg/kg dry wt	-	-	< 0.007	-	-
Demeton-S-methyl	mg/kg dry wt	-	-	< 0.014	-	-
Diazinon	mg/kg dry wt	-	-	< 0.004	-	-
Dichlobenil	mg/kg dry wt	-	-	< 0.007	-	-
Dichlofenthion	mg/kg dry wt	-	-	< 0.007	-	-
Dichlofluanid	mg/kg dry wt	-	-	< 0.007	-	-
Dichloran	mg/kg dry wt	-	-	< 0.03	-	-
Dichlorvos	mg/kg dry wt	-	-	< 0.010	-	-
Dicofol	mg/kg dry wt	-	-	< 0.04	-	-
Dicrotophos	mg/kg dry wt	-	-	< 0.007	-	-
Dieldrin	mg/kg dry wt	-	-	< 0.011	-	-
Difenoconazole	mg/kg dry wt	-	-	< 0.010	-	-
Dimethoate	mg/kg dry wt	-	-	< 0.014	-	-
Dinocap	mg/kg dry wt	-	-	< 0.08	-	-
Diphenylamine	mg/kg dry wt	-	-	< 0.014	-	-
Disulfoton	mg/kg dry wt	-	-	< 0.007	-	-
Diuron	mg/kg dry wt	-	-	< 0.007	-	-
Endosulfan I	mg/kg dry wt	-	-	< 0.011	-	-
Endosulfan II	mg/kg dry wt	-	-	< 0.011	-	-
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.011	-	-
Endrin	mg/kg dry wt	-	-	< 0.011	-	-
Endrin Aldehyde	mg/kg dry wt	-	-	< 0.011	-	-
Endrin ketone	mg/kg dry wt	-	-	< 0.011	-	-
EPN	mg/kg dry wt	-	-	< 0.007	-	-
Esfenvalerate	mg/kg dry wt	-	-	< 0.010	-	-
Ethion	mg/kg dry wt	-	-	< 0.007	-	-
Etrimfos	mg/kg dry wt	-	-	< 0.007	-	-

Sample Type: Soil							
Sample Name:		S16 0.0 19-Apr-2012	S17 0.0 19-Apr-2012	S18 0.0 19-Apr-2012	S39 0.0 19-Apr-2012	S40 0.0 19-Apr-2012
Lab Number:		999977.1	999977.2	999977.3	999977.4	999977.5
Multiresidue Pesticides in Soil samples by GCMS						
Famphur	mg/kg dry wt	-	-	< 0.007	-	-
Fenamiphos	mg/kg dry wt	-	-	< 0.007	-	-
Fenarimol	mg/kg dry wt	-	-	< 0.007	-	-
Fenitrothion	mg/kg dry wt	-	-	< 0.007	-	-
Fenpropathrin	mg/kg dry wt	-	-	< 0.007	-	-
Fenpropimorph	mg/kg dry wt	-	-	< 0.007	-	-
Fensulfothion	mg/kg dry wt	-	-	< 0.007	-	-
Fenthion	mg/kg dry wt	-	-	< 0.007	-	-
Fenvalerate	mg/kg dry wt	-	-	< 0.010	-	-
Fluazifop-butyl	mg/kg dry wt	-	-	< 0.007	-	-
Fluometuron	mg/kg dry wt	-	-	< 0.007	-	-
Flusilazole	mg/kg dry wt	-	-	< 0.007	-	-
Fluvalinate	mg/kg dry wt	-	-	< 0.006	-	-
Folpet	mg/kg dry wt	-	-	< 0.014	-	-
Furalaxyl	mg/kg dry wt	-	-	< 0.004	-	-
Haloxyfop-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Heptachlor	mg/kg dry wt	-	-	< 0.011	-	-
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.011	-	-
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.011	-	-
Hexaconazole	mg/kg dry wt	-	-	< 0.007	-	-
Hexazinone	mg/kg dry wt	-	-	< 0.004	-	-
Hexythiazox	mg/kg dry wt	-	-	< 0.04	-	-
Imazalil	mg/kg dry wt	-	-	< 0.04	-	-
Indoxacarb	mg/kg dry wt	-	-	< 0.007	-	-
Iodofenphos	mg/kg dry wt	-	-	< 0.007	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.04	-	-
Iprodione	mg/kg dry wt	-	-	< 0.007	-	-
Isazophos	mg/kg dry wt	-	-	< 0.007	-	-
Isofenphos	mg/kg dry wt	-	-	< 0.004	-	-
Kresoxim-methyl	mg/kg dry wt	-	-	< 0.004	-	-
Leptophos	mg/kg dry wt	-	-	< 0.007	-	-
Linuron	mg/kg dry wt	-	-	< 0.007	-	-
Malathion	mg/kg dry wt	-	-	< 0.007	-	-
Metalaxyl	mg/kg dry wt	-	-	< 0.007	-	-
Methacrifos	mg/kg dry wt	-	-	< 0.007	-	-
Methamidophos	mg/kg dry wt	-	-	< 0.04	-	-
Methidathion	mg/kg dry wt	-	-	< 0.007	-	-
Methiocarb	mg/kg dry wt	-	-	< 0.007	-	-
Methoxychlor	mg/kg dry wt	-	-	< 0.011	-	-
Metolachlor	mg/kg dry wt	-	-	< 0.006	-	-
Metribuzin	mg/kg dry wt	-	-	< 0.007	-	-
Mevinphos	mg/kg dry wt	-	-	< 0.02	-	-
Molinate	mg/kg dry wt	-	-	< 0.014	-	-
Myclobutanil	mg/kg dry wt	-	-	< 0.007	-	-
Naled	mg/kg dry wt	-	-	< 0.04	-	-
Nitrofen	mg/kg dry wt	-	-	< 0.014	-	-
Nitrothal-isopropyl	mg/kg dry wt	-	-	< 0.007	-	-
Norflurazon	mg/kg dry wt	-	-	< 0.014	-	-
Omethoate	mg/kg dry wt	-	-	< 0.04	-	-
Oxadiazon	mg/kg dry wt	-	-	< 0.007	-	-
Oxychlordane	mg/kg dry wt	-	-	< 0.004	-	-
Oxyfluorfen	mg/kg dry wt	-	-	< 0.004	-	-
Paclobutrazol	mg/kg dry wt	-	-	< 0.007	-	-
Parathion-ethyl	mg/kg dry wt	-	-	< 0.007	-	-

Sample Type: Soil						
Sample Name:		S16 0.0 19-Apr-2012	S17 0.0 19-Apr-2012	S18 0.0 19-Apr-2012	S39 0.0 19-Apr-2012	S40 0.0 19-Apr-2012
Lab Number:		999977.1	999977.2	999977.3	999977.4	999977.5
Multiresidue Pesticides in Soil samples by GCMS						
Parathion-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Penconazole	mg/kg dry wt	-	-	< 0.007	-	-
Pendimethalin	mg/kg dry wt	-	-	< 0.007	-	-
Permethrin	mg/kg dry wt	-	-	< 0.003	-	-
Phorate	mg/kg dry wt	-	-	< 0.014	-	-
Phosmet	mg/kg dry wt	-	-	< 0.007	-	-
Phosphamidon	mg/kg dry wt	-	-	< 0.007	-	-
Pirimicarb	mg/kg dry wt	-	-	< 0.007	-	-
Pirimiphos-methyl	mg/kg dry wt	-	-	< 0.007	-	-
Prochloraz	mg/kg dry wt	-	-	< 0.04	-	-
Procymidone	mg/kg dry wt	-	-	< 0.007	-	-
Prometryn	mg/kg dry wt	-	-	< 0.004	-	-
Propachlor	mg/kg dry wt	-	-	< 0.007	-	-
Propanil	mg/kg dry wt	-	-	< 0.03	-	-
Propazine	mg/kg dry wt	-	-	< 0.004	-	-
Propetamphos	mg/kg dry wt	-	-	< 0.007	-	-
Propham	mg/kg dry wt	-	-	< 0.007	-	-
Propiconazole	mg/kg dry wt	-	-	< 0.006	-	-
Prothiofos	mg/kg dry wt	-	-	< 0.007	-	-
Pyrazophos	mg/kg dry wt	-	-	< 0.007	-	-
Pyrifenox	mg/kg dry wt	-	-	< 0.010	-	-
Pyrimethanil	mg/kg dry wt	-	-	< 0.007	-	-
Pyriproxyfen	mg/kg dry wt	-	-	< 0.007	-	-
Quintozene	mg/kg dry wt	-	-	< 0.014	-	-
Quizalofop-ethyl	mg/kg dry wt	-	-	< 0.007	-	-
Simazine	mg/kg dry wt	-	-	< 0.007	-	-
Simetryn	mg/kg dry wt	-	-	< 0.007	-	-
Sulfentrazone	mg/kg dry wt	-	-	< 0.04	-	-
Sulfotep	mg/kg dry wt	-	-	< 0.007	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.014	-	-
Tebuconazole	mg/kg dry wt	-	-	< 0.007	-	-
Tebufenpyrad	mg/kg dry wt	-	-	< 0.004	-	-
Terbacil	mg/kg dry wt	-	-	< 0.007	-	-
Terbufos	mg/kg dry wt	-	-	< 0.007	-	-
Terbumeton	mg/kg dry wt	-	-	< 0.007	-	-
Terbuthylazine	mg/kg dry wt	-	-	< 0.004	-	-
Terbuthylazine-desethyl	mg/kg dry wt	-	-	< 0.007	-	-
Terbutryn	mg/kg dry wt	-	-	< 0.007	-	-
Tetrachlorvinphos	mg/kg dry wt	-	-	< 0.007	-	-
Thiabendazole	mg/kg dry wt	-	-	< 0.04	-	-
Thiobencarb	mg/kg dry wt	-	-	< 0.007	-	-
Thiometon	mg/kg dry wt	-	-	< 0.014	-	-
Tolylfluanid	mg/kg dry wt	-	-	< 0.004	-	-
Triadimefon	mg/kg dry wt	-	-	< 0.007	-	-
Triazophos	mg/kg dry wt	-	-	< 0.007	-	-
Trifluralin	mg/kg dry wt	-	-	< 0.007	-	-
Vinclozolin	mg/kg dry wt	-	-	< 0.007	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010

Sample Type: Soil						
	Sample Name:	S16 0.0 19-Apr-2012	S17 0.0 19-Apr-2012	S18 0.0 19-Apr-2012	S39 0.0 19-Apr-2012	S40 0.0 19-Apr-2012
	Lab Number:	999977.1	999977.2	999977.3	999977.4	999977.5
Organochlorine Pesticides Screening in Soil						
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	-	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	0.020	0.018	-	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	0.45	0.47	-	0.037	0.124
2,4'-DDT	mg/kg dry wt	0.018	0.021	-	< 0.010	< 0.010
4,4'-DDT	mg/kg dry wt	0.080	0.094	-	< 0.010	0.017
Dieldrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endosulfan I	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endrin Aldehyde	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010

	Sample Name:	S41 0.0 19-Apr-2012	S42 0.0 19-Apr-2012	S19 0.0 19-Apr-2012	S38 0.0 19-Apr-2012	S37 0.0 19-Apr-2012
	Lab Number:	999977.6	999977.7	999977.8	999977.9	999977.10
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	82	-	-
pH*	pH Units	-	-	5.5	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	3	2	2	< 2
Total Recoverable Cadmium	mg/kg dry wt	0.14	0.15	0.17	0.17	0.13
Total Recoverable Chromium	mg/kg dry wt	12	16	16	12	13
Total Recoverable Copper	mg/kg dry wt	4	8	13	9	4
Total Recoverable Lead	mg/kg dry wt	11.3	18.1	15.6	14.6	11.1
Total Recoverable Nickel	mg/kg dry wt	6	10	8	8	7
Total Recoverable Zinc	mg/kg dry wt	31	70	62	58	39
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	< 0.008	-	-
Alachlor	mg/kg dry wt	-	-	< 0.006	-	-
Aldrin	mg/kg dry wt	-	-	< 0.010	-	-
Atrazine	mg/kg dry wt	-	-	< 0.008	-	-
Atrazine-desethyl	mg/kg dry wt	-	-	< 0.008	-	-
Atrazine-desisopropyl	mg/kg dry wt	-	-	< 0.015	-	-
Azaconazole	mg/kg dry wt	-	-	< 0.004	-	-
Azinphos-methyl	mg/kg dry wt	-	-	< 0.015	-	-
Benalaxyl	mg/kg dry wt	-	-	< 0.004	-	-
Bendiocarb	mg/kg dry wt	-	-	< 0.008	-	-
Benodanil	mg/kg dry wt	-	-	< 0.015	-	-
alpha-BHC	mg/kg dry wt	-	-	< 0.010	-	-
beta-BHC	mg/kg dry wt	-	-	< 0.010	-	-
delta-BHC	mg/kg dry wt	-	-	< 0.010	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.010	-	-
Bifenthrin	mg/kg dry wt	-	-	< 0.004	-	-
Bitertanol	mg/kg dry wt	-	-	< 0.015	-	-
Bromacil	mg/kg dry wt	-	-	< 0.008	-	-
Bromophos-ethyl	mg/kg dry wt	-	-	< 0.008	-	-
Bromopropylate	mg/kg dry wt	-	-	< 0.008	-	-

Sample Type: Soil							
	Sample Name:	S41 0.0 19-Apr-2012	S42 0.0 19-Apr-2012	S19 0.0 19-Apr-2012	S38 0.0 19-Apr-2012	S37 0.0 19-Apr-2012
	Lab Number:	999977.6	999977.7	999977.8	999977.9	999977.10
Multiresidue Pesticides in Soil samples by GCMS						
Bupirimate	mg/kg dry wt	-	-	< 0.008	-	-
Buprofezin	mg/kg dry wt	-	-	< 0.008	-	-
Butachlor	mg/kg dry wt	-	-	< 0.008	-	-
Captafol	mg/kg dry wt	-	-	< 0.04	-	-
Captan	mg/kg dry wt	-	-	< 0.015	-	-
Carbaryl	mg/kg dry wt	-	-	< 0.008	-	-
Carbofenothion	mg/kg dry wt	-	-	< 0.008	-	-
Carbofuran	mg/kg dry wt	-	-	< 0.008	-	-
Carboxin	mg/kg dry wt	-	-	< 0.008	-	-
cis-Chlordane	mg/kg dry wt	-	-	< 0.010	-	-
trans-Chlordane	mg/kg dry wt	-	-	< 0.010	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	< 0.04	-	-
Chlorfenvinphos	mg/kg dry wt	-	-	< 0.008	-	-
Chlorfluazuron	mg/kg dry wt	-	-	< 0.008	-	-
Chlorothalonil	mg/kg dry wt	-	-	< 0.008	-	-
Chlorpropham	mg/kg dry wt	-	-	< 0.015	-	-
Chlorpyrifos	mg/kg dry wt	-	-	< 0.008	-	-
Chlorpyrifos-methyl	mg/kg dry wt	-	-	< 0.008	-	-
Chlortoluron	mg/kg dry wt	-	-	< 0.015	-	-
Chlozolinate	mg/kg dry wt	-	-	< 0.008	-	-
Coumaphos	mg/kg dry wt	-	-	< 0.015	-	-
Cyanazine	mg/kg dry wt	-	-	< 0.008	-	-
Cyfluthrin	mg/kg dry wt	-	-	< 0.008	-	-
Cyhalothrin	mg/kg dry wt	-	-	< 0.008	-	-
Cypermethrin	mg/kg dry wt	-	-	< 0.015	-	-
Cyproconazole	mg/kg dry wt	-	-	< 0.011	-	-
Cyprodinil	mg/kg dry wt	-	-	< 0.008	-	-
2,4'-DDD	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDD	mg/kg dry wt	-	-	< 0.010	-	-
2,4'-DDE	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDE	mg/kg dry wt	-	-	< 0.010	-	-
2,4'-DDT	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDT	mg/kg dry wt	-	-	< 0.010	-	-
Total DDT Isomers	mg/kg dry wt	-	-	< 0.06	-	-
Deltamethrin	mg/kg dry wt	-	-	< 0.008	-	-
Demeton-S-methyl	mg/kg dry wt	-	-	< 0.015	-	-
Diazinon	mg/kg dry wt	-	-	< 0.004	-	-
Dichlobenil	mg/kg dry wt	-	-	< 0.008	-	-
Dichlofenthion	mg/kg dry wt	-	-	< 0.008	-	-
Dichlofluanid	mg/kg dry wt	-	-	< 0.008	-	-
Dichloran	mg/kg dry wt	-	-	< 0.03	-	-
Dichlorvos	mg/kg dry wt	-	-	< 0.010	-	-
Dicofol	mg/kg dry wt	-	-	< 0.04	-	-
Dicrotophos	mg/kg dry wt	-	-	< 0.008	-	-
Dieldrin	mg/kg dry wt	-	-	< 0.010	-	-
Difenoconazole	mg/kg dry wt	-	-	< 0.011	-	-
Dimethoate	mg/kg dry wt	-	-	< 0.015	-	-
Dinocap	mg/kg dry wt	-	-	< 0.09	-	-
Diphenylamine	mg/kg dry wt	-	-	< 0.015	-	-
Disulfoton	mg/kg dry wt	-	-	< 0.008	-	-
Diuron	mg/kg dry wt	-	-	< 0.008	-	-
Endosulfan I	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan II	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.010	-	-

Sample Type: Soil						
Sample Name:		S41 0.0 19-Apr-2012	S42 0.0 19-Apr-2012	S19 0.0 19-Apr-2012	S38 0.0 19-Apr-2012	S37 0.0 19-Apr-2012
Lab Number:		999977.6	999977.7	999977.8	999977.9	999977.10
Multiresidue Pesticides in Soil samples by GCMS						
Endrin	mg/kg dry wt	-	-	< 0.010	-	-
Endrin Aldehyde	mg/kg dry wt	-	-	< 0.010	-	-
Endrin ketone	mg/kg dry wt	-	-	< 0.010	-	-
EPN	mg/kg dry wt	-	-	< 0.008	-	-
Esfenvalerate	mg/kg dry wt	-	-	< 0.011	-	-
Ethion	mg/kg dry wt	-	-	< 0.008	-	-
Etrimfos	mg/kg dry wt	-	-	< 0.008	-	-
Famphur	mg/kg dry wt	-	-	< 0.008	-	-
Fenamiphos	mg/kg dry wt	-	-	< 0.008	-	-
Fenarimol	mg/kg dry wt	-	-	< 0.008	-	-
Fenitrothion	mg/kg dry wt	-	-	< 0.008	-	-
Fenpropathrin	mg/kg dry wt	-	-	< 0.008	-	-
Fenpropimorph	mg/kg dry wt	-	-	< 0.008	-	-
Fensulfothion	mg/kg dry wt	-	-	< 0.008	-	-
Fenthion	mg/kg dry wt	-	-	< 0.008	-	-
Fenvalerate	mg/kg dry wt	-	-	< 0.011	-	-
Fluazifop-butyl	mg/kg dry wt	-	-	< 0.008	-	-
Fluometuron	mg/kg dry wt	-	-	< 0.008	-	-
Flusilazole	mg/kg dry wt	-	-	< 0.008	-	-
Fluvalinate	mg/kg dry wt	-	-	< 0.006	-	-
Folpet	mg/kg dry wt	-	-	< 0.015	-	-
Furalaxyl	mg/kg dry wt	-	-	< 0.004	-	-
Haloxyfop-methyl	mg/kg dry wt	-	-	< 0.008	-	-
Heptachlor	mg/kg dry wt	-	-	< 0.010	-	-
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.010	-	-
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.010	-	-
Hexaconazole	mg/kg dry wt	-	-	< 0.008	-	-
Hexazinone	mg/kg dry wt	-	-	< 0.004	-	-
Hexythiazox	mg/kg dry wt	-	-	< 0.04	-	-
Imazalil	mg/kg dry wt	-	-	< 0.04	-	-
Indoxacarb	mg/kg dry wt	-	-	< 0.008	-	-
Iodofenphos	mg/kg dry wt	-	-	< 0.008	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.04	-	-
Iprodione	mg/kg dry wt	-	-	< 0.008	-	-
Isazophos	mg/kg dry wt	-	-	< 0.008	-	-
Isofenphos	mg/kg dry wt	-	-	< 0.004	-	-
Kresoxim-methyl	mg/kg dry wt	-	-	< 0.004	-	-
Leptophos	mg/kg dry wt	-	-	< 0.008	-	-
Linuron	mg/kg dry wt	-	-	< 0.008	-	-
Malathion	mg/kg dry wt	-	-	< 0.008	-	-
Metalaxyl	mg/kg dry wt	-	-	< 0.008	-	-
Methacrifos	mg/kg dry wt	-	-	< 0.008	-	-
Methamidophos	mg/kg dry wt	-	-	< 0.04	-	-
Methidathion	mg/kg dry wt	-	-	< 0.008	-	-
Methiocarb	mg/kg dry wt	-	-	< 0.008	-	-
Methoxychlor	mg/kg dry wt	-	-	< 0.010	-	-
Metolachlor	mg/kg dry wt	-	-	< 0.006	-	-
Metribuzin	mg/kg dry wt	-	-	< 0.008	-	-
Mevinphos	mg/kg dry wt	-	-	< 0.03	-	-
Molinate	mg/kg dry wt	-	-	< 0.015	-	-
Myclobutanil	mg/kg dry wt	-	-	< 0.008	-	-
Naled	mg/kg dry wt	-	-	< 0.04	-	-
Nitrofen	mg/kg dry wt	-	-	< 0.015	-	-
Nitrothal-isopropyl	mg/kg dry wt	-	-	< 0.008	-	-

Sample Type: Soil						
Sample Name:		S41 0.0 19-Apr-2012	S42 0.0 19-Apr-2012	S19 0.0 19-Apr-2012	S38 0.0 19-Apr-2012	S37 0.0 19-Apr-2012
Lab Number:		999977.6	999977.7	999977.8	999977.9	999977.10
Multiresidue Pesticides in Soil samples by GCMS						
Norflurazon	mg/kg dry wt	-	-	< 0.015	-	-
Omethoate	mg/kg dry wt	-	-	< 0.04	-	-
Oxadiazon	mg/kg dry wt	-	-	< 0.008	-	-
Oxychlordane	mg/kg dry wt	-	-	< 0.004	-	-
Oxyfluorfen	mg/kg dry wt	-	-	< 0.004	-	-
Paclobutrazol	mg/kg dry wt	-	-	< 0.008	-	-
Parathion-ethyl	mg/kg dry wt	-	-	< 0.008	-	-
Parathion-methyl	mg/kg dry wt	-	-	< 0.008	-	-
Penconazole	mg/kg dry wt	-	-	< 0.008	-	-
Pendimethalin	mg/kg dry wt	-	-	< 0.008	-	-
Permethrin	mg/kg dry wt	-	-	< 0.003	-	-
Phorate	mg/kg dry wt	-	-	< 0.015	-	-
Phosmet	mg/kg dry wt	-	-	< 0.008	-	-
Phosphamidon	mg/kg dry wt	-	-	< 0.008	-	-
Pirimicarb	mg/kg dry wt	-	-	< 0.008	-	-
Pirimiphos-methyl	mg/kg dry wt	-	-	< 0.008	-	-
Prochloraz	mg/kg dry wt	-	-	< 0.04	-	-
Procymidone	mg/kg dry wt	-	-	< 0.008	-	-
Prometryn	mg/kg dry wt	-	-	< 0.004	-	-
Propachlor	mg/kg dry wt	-	-	< 0.008	-	-
Propanil	mg/kg dry wt	-	-	< 0.03	-	-
Propazine	mg/kg dry wt	-	-	< 0.004	-	-
Propetamphos	mg/kg dry wt	-	-	< 0.008	-	-
Propham	mg/kg dry wt	-	-	< 0.008	-	-
Propiconazole	mg/kg dry wt	-	-	< 0.006	-	-
Prothiofos	mg/kg dry wt	-	-	< 0.008	-	-
Pyrazophos	mg/kg dry wt	-	-	< 0.008	-	-
Pyrifenox	mg/kg dry wt	-	-	< 0.011	-	-
Pyrimethanil	mg/kg dry wt	-	-	< 0.008	-	-
Pyriproxyfen	mg/kg dry wt	-	-	< 0.008	-	-
Quintozene	mg/kg dry wt	-	-	< 0.015	-	-
Quizalofop-ethyl	mg/kg dry wt	-	-	< 0.008	-	-
Simazine	mg/kg dry wt	-	-	< 0.008	-	-
Simetryn	mg/kg dry wt	-	-	< 0.008	-	-
Sulfentrazone	mg/kg dry wt	-	-	< 0.04	-	-
Sulfotep	mg/kg dry wt	-	-	< 0.008	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.015	-	-
Tebuconazole	mg/kg dry wt	-	-	< 0.008	-	-
Tebufenpyrad	mg/kg dry wt	-	-	< 0.004	-	-
Terbacil	mg/kg dry wt	-	-	< 0.008	-	-
Terbufos	mg/kg dry wt	-	-	< 0.008	-	-
Terbumeton	mg/kg dry wt	-	-	< 0.008	-	-
Terbuthylazine	mg/kg dry wt	-	-	< 0.004	-	-
Terbuthylazine-desethyl	mg/kg dry wt	-	-	< 0.008	-	-
Terbutryn	mg/kg dry wt	-	-	< 0.008	-	-
Tetrachlorvinphos	mg/kg dry wt	-	-	< 0.008	-	-
Thiabendazole	mg/kg dry wt	-	-	< 0.04	-	-
Thiobencarb	mg/kg dry wt	-	-	< 0.008	-	-
Thiometon	mg/kg dry wt	-	-	< 0.015	-	-
Tolylfluanid	mg/kg dry wt	-	-	< 0.004	-	-
Triadimefon	mg/kg dry wt	-	-	< 0.008	-	-
Triazophos	mg/kg dry wt	-	-	< 0.008	-	-
Trifluralin	mg/kg dry wt	-	-	< 0.008	-	-
Vinclozolin	mg/kg dry wt	-	-	< 0.008	-	-

Sample Type: Soil						
Sample Name:		S41 0.0 19-Apr-2012	S42 0.0 19-Apr-2012	S19 0.0 19-Apr-2012	S38 0.0 19-Apr-2012	S37 0.0 19-Apr-2012
Lab Number:		999977.6	999977.7	999977.8	999977.9	999977.10
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
alpha-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	-	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	0.026	< 0.010	-	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	0.85	< 0.010	-	< 0.010	0.029
2,4'-DDT	mg/kg dry wt	0.053	< 0.010	-	< 0.010	< 0.010
4,4'-DDT	mg/kg dry wt	0.189	< 0.010	-	< 0.010	< 0.010
Dieldrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endosulfan I	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endrin	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endrin Aldehyde	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Heptachlor	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010
Methoxychlor	mg/kg dry wt	< 0.010	< 0.010	-	< 0.010	< 0.010

Sample Name:		S20 0.0 19-Apr-2012	TS1 0.0 19-Apr-2012	TS3 0.0 19-Apr-2012	TS4 0.0 19-Apr-2012	TS5 0.0 19-Apr-2012
Lab Number:		999977.11	999977.12	999977.14	999977.15	999977.16
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	-	-	82
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	2	4	< 2	2	-
Total Recoverable Cadmium	mg/kg dry wt	0.15	0.45	0.12	0.15	-
Total Recoverable Chromium	mg/kg dry wt	11	10	13	13	-
Total Recoverable Copper	mg/kg dry wt	5	22	11	7	-
Total Recoverable Lead	mg/kg dry wt	12.1	16.9	19.9	14.5	-
Total Recoverable Nickel	mg/kg dry wt	5	8	7	7	-
Total Recoverable Zinc	mg/kg dry wt	40	114	53	62	-
BTEX in Soil by Headspace GC-MS						
Benzene	mg/kg dry wt	-	-	-	-	< 0.09
Toluene	mg/kg dry wt	-	-	-	-	< 0.09
Ethylbenzene	mg/kg dry wt	-	-	-	-	< 0.09
m&p-Xylene	mg/kg dry wt	-	-	-	-	< 0.18
o-Xylene	mg/kg dry wt	-	-	-	-	< 0.09
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
alpha-BHC	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
beta-BHC	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
delta-BHC	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
cis-Chlordane	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
trans-Chlordane	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	< 0.04	< 0.04	-	-

Sample Type: Soil						
Sample Name:		S20 0.0 19-Apr-2012	TS1 0.0 19-Apr-2012	TS3 0.0 19-Apr-2012	TS4 0.0 19-Apr-2012	TS5 0.0 19-Apr-2012
Lab Number:		999977.11	999977.12	999977.14	999977.15	999977.16
Organochlorine Pesticides Screening in Soil						
2,4'-DDD	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
4,4'-DDD	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
2,4'-DDE	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
4,4'-DDE	mg/kg dry wt	0.060	< 0.011	< 0.010	-	-
2,4'-DDT	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
4,4'-DDT	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Dieldrin	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Endosulfan I	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Endosulfan II	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Endrin	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Endrin ketone	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Heptachlor	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Methoxychlor	mg/kg dry wt	< 0.010	< 0.011	< 0.010	-	-
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	-	-	-	-	< 8
C10 - C14	mg/kg dry wt	-	-	-	-	< 20
C15 - C36	mg/kg dry wt	-	-	-	-	< 40
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	-	-	-	< 70

Sample Name:		TS6 0.0 19-Apr-2012	TS7 0.0 19-Apr-2012	TS8 0.0 19-Apr-2012	TS9 0.0 19-Apr-2012	TS10 0.0 19-Apr-2012
Lab Number:		999977.17	999977.18	999977.19	999977.20	999977.21
Individual Tests						
Dry Matter	g/100g as rcvd	-	83	-	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	6	< 2	5	7
Total Recoverable Cadmium	mg/kg dry wt	0.15	< 0.10	< 0.10	0.22	0.44
Total Recoverable Chromium	mg/kg dry wt	12	16	13	17	17
Total Recoverable Copper	mg/kg dry wt	12	12	5	11	48
Total Recoverable Lead	mg/kg dry wt	13.2	45	13.8	700	470
Total Recoverable Nickel	mg/kg dry wt	9	11	8	9	12
Total Recoverable Zinc	mg/kg dry wt	95	93	64	174	420
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	-	-	-	-
alpha-BHC	mg/kg dry wt	< 0.010	-	-	-	-
beta-BHC	mg/kg dry wt	< 0.010	-	-	-	-
delta-BHC	mg/kg dry wt	< 0.010	-	-	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	-	-	-	-
cis-Chlordane	mg/kg dry wt	< 0.010	-	-	-	-
trans-Chlordane	mg/kg dry wt	< 0.010	-	-	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	-	-
2,4'-DDD	mg/kg dry wt	< 0.010	-	-	-	-
4,4'-DDD	mg/kg dry wt	< 0.010	-	-	-	-
2,4'-DDE	mg/kg dry wt	< 0.010	-	-	-	-
4,4'-DDE	mg/kg dry wt	< 0.010	-	-	-	-
2,4'-DDT	mg/kg dry wt	< 0.010	-	-	-	-
4,4'-DDT	mg/kg dry wt	< 0.010	-	-	-	-
Dieldrin	mg/kg dry wt	< 0.010	-	-	-	-
Endosulfan I	mg/kg dry wt	< 0.010	-	-	-	-
Endosulfan II	mg/kg dry wt	< 0.010	-	-	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.010	-	-	-	-

Sample Type: Soil						
	Sample Name:	TS6 0.0 19-Apr-2012	TS7 0.0 19-Apr-2012	TS8 0.0 19-Apr-2012	TS9 0.0 19-Apr-2012	TS10 0.0 19-Apr-2012
	Lab Number:	999977.17	999977.18	999977.19	999977.20	999977.21
Organochlorine Pesticides Screening in Soil						
Endrin	mg/kg dry wt	< 0.010	-	-	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.010	-	-	-	-
Endrin ketone	mg/kg dry wt	< 0.010	-	-	-	-
Heptachlor	mg/kg dry wt	< 0.010	-	-	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.010	-	-	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.010	-	-	-	-
Methoxychlor	mg/kg dry wt	< 0.010	-	-	-	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	-	< 0.03	-	-	-
Acenaphthylene	mg/kg dry wt	-	< 0.03	-	-	-
Anthracene	mg/kg dry wt	-	< 0.03	-	-	-
Benzo[a]anthracene	mg/kg dry wt	-	< 0.03	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	< 0.03	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	< 0.03	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	-	< 0.03	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	-	< 0.03	-	-	-
Chrysene	mg/kg dry wt	-	< 0.03	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	-	< 0.03	-	-	-
Fluoranthene	mg/kg dry wt	-	< 0.03	-	-	-
Fluorene	mg/kg dry wt	-	< 0.03	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	< 0.03	-	-	-
Naphthalene	mg/kg dry wt	-	< 0.14	-	-	-
Phenanthrene	mg/kg dry wt	-	< 0.03	-	-	-
Pyrene	mg/kg dry wt	-	< 0.03	-	-	-

	Sample Name:	TS11 0.0 19-Apr-2012	TS12 0.0 19-Apr-2012	TS13 0.0 19-Apr-2012	TS14 0.0 19-Apr-2012	TS15 0.0 19-Apr-2012
	Lab Number:	999977.22	999977.23	999977.24	999977.25	999977.26
Individual Tests						
Dry Matter	g/100g as rcvd	78	-	77	85	79
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	-	4	8	5	12
Total Recoverable Cadmium	mg/kg dry wt	-	0.35	0.39	< 0.10	0.70
Total Recoverable Chromium	mg/kg dry wt	-	22	15	15	15
Total Recoverable Copper	mg/kg dry wt	-	54	54	19	85
Total Recoverable Lead	mg/kg dry wt	-	220	87	38	106
Total Recoverable Nickel	mg/kg dry wt	-	8	11	9	10
Total Recoverable Zinc	mg/kg dry wt	-	310	330	94	530
BTEX in Soil by Headspace GC-MS						
Benzene	mg/kg dry wt	-	-	< 0.06	< 0.05	< 0.06
Toluene	mg/kg dry wt	-	-	< 0.06	< 0.05	< 0.06
Ethylbenzene	mg/kg dry wt	-	-	< 0.06	< 0.05	< 0.06
m&p-Xylene	mg/kg dry wt	-	-	< 0.11	< 0.10	< 0.11
o-Xylene	mg/kg dry wt	-	-	< 0.06	< 0.05	< 0.06
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Alachlor	mg/kg dry wt	-	-	< 0.006	< 0.006	< 0.006
Aldrin	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Atrazine	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Atrazine-desethyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Atrazine-desisopropyl	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Azaconazole	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Azinphos-methyl	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Benalaxyl	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Bendiocarb	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008

Sample Type: Soil						
Sample Name:		TS11 0.0 19-Apr-2012	TS12 0.0 19-Apr-2012	TS13 0.0 19-Apr-2012	TS14 0.0 19-Apr-2012	TS15 0.0 19-Apr-2012
Lab Number:		999977.22	999977.23	999977.24	999977.25	999977.26
Multiresidue Pesticides in Soil samples by GCMS						
Benodanil	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
alpha-BHC	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
beta-BHC	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
delta-BHC	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Bifenthrin	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Bitertanol	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Bromacil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Bromophos-ethyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Bromopropylate	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Bupirimate	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Buprofezin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Butachlor	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Captafol	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Captan	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Carbaryl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Carbofenothion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Carbofuran	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Carboxin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
cis-Chlordane	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
trans-Chlordane	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Chlorfenvinphos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Chlorfluazuron	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Chlorothalonil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Chlorpropham	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Chlorpyrifos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Chlorpyrifos-methyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Chlortoluron	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Chlozolinate	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Coumaphos	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Cyanazine	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Cyfluthrin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Cyhalothrin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Cypermethrin	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Cyproconazole	mg/kg dry wt	-	-	< 0.011	< 0.010	< 0.011
Cyprodinil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
2,4'-DDD	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
4,4'-DDD	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
2,4'-DDE	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
4,4'-DDE	mg/kg dry wt	-	-	< 0.010	< 0.010	0.015
2,4'-DDT	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
4,4'-DDT	mg/kg dry wt	-	-	< 0.010	< 0.010	0.011
Total DDT Isomers	mg/kg dry wt	-	-	< 0.06	< 0.06	< 0.06
Deltamethrin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Demeton-S-methyl	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Diazinon	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Dichlobenil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Dichlofenthion	mg/kg dry wt	-	-	< 0.008	< 0.007	0.015
Dichlofluanid	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Dichloran	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Dichlorvos	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Dicofol	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Dicrotophos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008

Sample Type: Soil						
Sample Name:		TS11 0.0 19-Apr-2012	TS12 0.0 19-Apr-2012	TS13 0.0 19-Apr-2012	TS14 0.0 19-Apr-2012	TS15 0.0 19-Apr-2012
Lab Number:		999977.22	999977.23	999977.24	999977.25	999977.26
Multiresidue Pesticides in Soil samples by GCMS						
Dieldrin	mg/kg dry wt	-	-	0.47	0.145	0.21
Difenoconazole	mg/kg dry wt	-	-	< 0.011	< 0.010	< 0.011
Dimethoate	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Dinocap	mg/kg dry wt	-	-	< 0.09	< 0.08	< 0.09
Diphenylamine	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Disulfoton	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Diuron	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Endosulfan I	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Endosulfan II	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Endrin	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Endrin Aldehyde	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Endrin ketone	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
EPN	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Esfenvalerate	mg/kg dry wt	-	-	< 0.011	< 0.010	< 0.011
Ethion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Etrimfos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Famphur	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenamiphos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenarimol	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenitrothion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenpropathrin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenpropimorph	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fensulfothion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenthion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fenvalerate	mg/kg dry wt	-	-	< 0.011	< 0.010	< 0.011
Fluazifop-butyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fluometuron	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Flusilazole	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Fluvalinate	mg/kg dry wt	-	-	< 0.006	< 0.006	< 0.006
Folpet	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Furalaxyl	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Haloxyfop-methyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Heptachlor	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Hexaconazole	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Hexazinone	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Hexythiazox	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Imazalil	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Indoxacarb	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Iodofenphos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Iprodione	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Isazophos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Isofenphos	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Kresoxim-methyl	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Leptophos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Linuron	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Malathion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Metalaxyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Methacrifos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Methamidophos	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Methidathion	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008

Sample Type: Soil						
Sample Name:		TS11 0.0 19-Apr-2012	TS12 0.0 19-Apr-2012	TS13 0.0 19-Apr-2012	TS14 0.0 19-Apr-2012	TS15 0.0 19-Apr-2012
Lab Number:		999977.22	999977.23	999977.24	999977.25	999977.26
Multiresidue Pesticides in Soil samples by GCMS						
Methiocarb	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Methoxychlor	mg/kg dry wt	-	-	< 0.010	< 0.010	< 0.010
Metolachlor	mg/kg dry wt	-	-	< 0.006	< 0.006	< 0.006
Metribuzin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Mevinphos	mg/kg dry wt	-	-	< 0.03	< 0.02	< 0.03
Molinate	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Myclobutanil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Naled	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Nitrofen	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Nitrothal-isopropyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Norflurazon	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Omethoate	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Oxadiazon	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Oxychlordane	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Oxyfluorfen	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Paclobutrazol	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Parathion-ethyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Parathion-methyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Penconazole	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Pendimethalin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Permethrin	mg/kg dry wt	-	-	< 0.003	< 0.003	< 0.003
Phorate	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Phosmet	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Phosphamidon	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Pirimicarb	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Pirimiphos-methyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Prochloraz	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Procymidone	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Prometryn	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Propachlor	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Propanil	mg/kg dry wt	-	-	< 0.03	< 0.03	< 0.03
Propazine	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Propetamphos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Propham	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Propiconazole	mg/kg dry wt	-	-	< 0.006	< 0.006	< 0.006
Prothiofos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Pyrazophos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Pyrifenox	mg/kg dry wt	-	-	< 0.011	< 0.010	< 0.011
Pyrimethanil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Pyriproxyfen	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Quintozene	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Quizalofop-ethyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Simazine	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Simetryn	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Sulfentrazone	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Sulfotep	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Tebuconazole	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Tebufenpyrad	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Terbacil	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Terbufos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Terbumeton	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Terbuthylazine	mg/kg dry wt	-	-	< 0.004	0.018	0.004
Terbuthylazine-desethyl	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008

Sample Type: Soil						
Sample Name:		TS11 0.0 19-Apr-2012	TS12 0.0 19-Apr-2012	TS13 0.0 19-Apr-2012	TS14 0.0 19-Apr-2012	TS15 0.0 19-Apr-2012
Lab Number:		999977.22	999977.23	999977.24	999977.25	999977.26
Multiresidue Pesticides in Soil samples by GCMS						
Terbutryn	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Tetrachlorvinphos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Thiabendazole	mg/kg dry wt	-	-	< 0.04	< 0.04	< 0.04
Thiobencarb	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Thiometon	mg/kg dry wt	-	-	< 0.016	< 0.014	< 0.015
Tolylfluanid	mg/kg dry wt	-	-	< 0.004	< 0.004	< 0.004
Triadimefon	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Triazophos	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Trifluralin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Vinclozolin	mg/kg dry wt	-	-	< 0.008	< 0.007	< 0.008
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	< 9	-	< 9	< 8	< 9
C10 - C14	mg/kg dry wt	< 20	-	25	< 20	< 20
C15 - C36	mg/kg dry wt	< 40	-	1,150	< 40	240
Total hydrocarbons (C7 - C36)	mg/kg dry wt	< 70	-	1,170	< 70	240

Sample Name:		TS19 0.0 19-Apr-2012	TS22 0.0 19-Apr-2012	TS23 0.0 19-Apr-2012	TS26 0.0 19-Apr-2012	
Lab Number:		999977.30	999977.33	999977.34	999977.37	
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	22 #1	81	7	5	-
Total Recoverable Cadmium	mg/kg dry wt	0.19	0.26	0.47	0.25	-
Total Recoverable Chromium	mg/kg dry wt	15	13	16	17	-
Total Recoverable Copper	mg/kg dry wt	360	210	40	122	-
Total Recoverable Lead	mg/kg dry wt	54 #1	52	31	25	-
Total Recoverable Nickel	mg/kg dry wt	10	6	11	11	-
Total Recoverable Zinc	mg/kg dry wt	290	220	520	300	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.011	-	< 0.010	-	-
alpha-BHC	mg/kg dry wt	< 0.011	-	< 0.010	-	-
beta-BHC	mg/kg dry wt	< 0.011	-	< 0.010	-	-
delta-BHC	mg/kg dry wt	< 0.011	-	< 0.010	-	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.011	-	< 0.010	-	-
cis-Chlordane	mg/kg dry wt	< 0.011	-	< 0.010	-	-
trans-Chlordane	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	< 0.04	-	-
2,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.010	-	-
4,4'-DDD	mg/kg dry wt	< 0.011	-	< 0.010	-	-
2,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.010	-	-
4,4'-DDE	mg/kg dry wt	< 0.011	-	< 0.010	-	-
2,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.010	-	-
4,4'-DDT	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Dieldrin	mg/kg dry wt	0.073	-	0.036	-	-
Endosulfan I	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Endosulfan II	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Endosulfan sulphate	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Endrin	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Endrin Aldehyde	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Endrin ketone	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Heptachlor	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Heptachlor epoxide	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Hexachlorobenzene	mg/kg dry wt	< 0.011	-	< 0.010	-	-
Methoxychlor	mg/kg dry wt	< 0.011	-	< 0.010	-	-

Analyst's Comments

#1 It should be noted that the replicate analyses performed on this sample as part of our in-house Quality Assurance procedures showed greater variation than would normally be expected. This may reflect the heterogeneity of the sample.

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

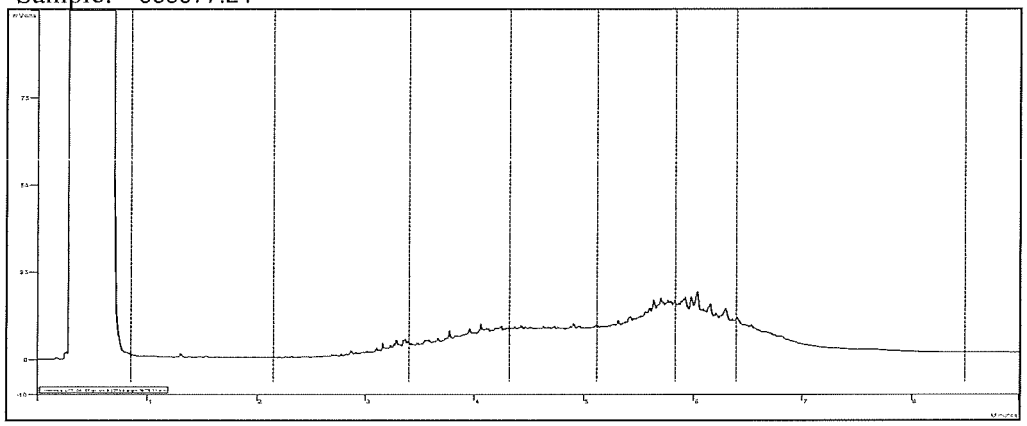
Test	Method Description	Default Detection Limit	Samples
Environmental Solids Sample Preparation	Air dried at 35°C and sieved, <2mm fraction. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	1-12, 14-15, 17-21, 23-26, 30, 33-34, 37
Soil Prep Dry & Sieve for Agriculture	Air dried at 35°C and sieved, <2mm fraction.	-	8
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	1-12, 14-15, 17-21, 23-26, 30, 33-34, 37
BTEX in Soil by Headspace GC-MS	Solvent extraction, Headspace GC-MS analysis US EPA 8260B. Tested on as received sample	-	16, 24-26
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GPC cleanup, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	-	3, 8, 24-26
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	-	1-2, 4-7, 9-12, 14, 17, 30, 34
Polycyclic Aromatic Hydrocarbons Screening in Soil	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis (modified US EPA 8270). Tested on as received sample.	-	18
Total Petroleum Hydrocarbons in Soil	Sonication extraction in DCM, Silica cleanup, GC-FID analysis US EPA 8015B/MfE Petroleum Industry Guidelines. Tested on as received sample	-	16, 22, 24-26
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	3, 8, 16, 18, 22, 24-26
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	1-12, 14-15, 17-21, 23-26, 30, 33-34, 37
pH*	1:2 (v/v) soil : water slurry followed by potentiometric determination of pH.	0.1 pH Units	8

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

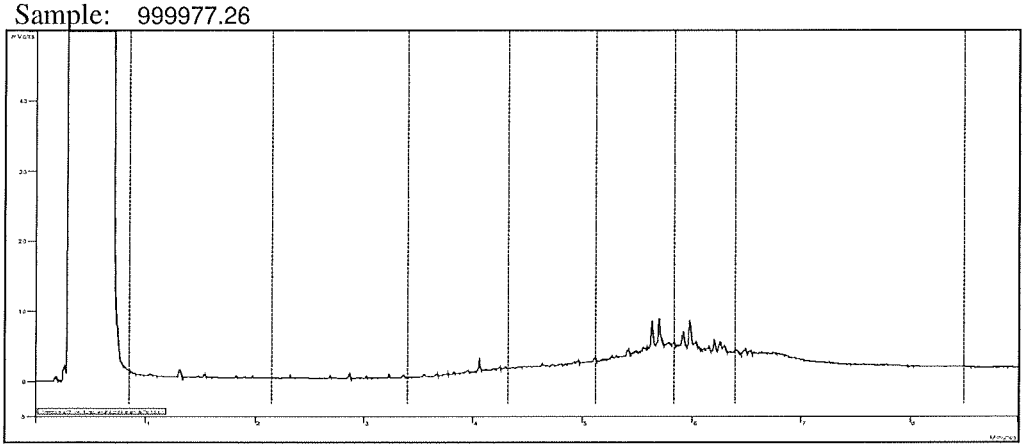
Samples are held at the laboratory after reporting for a length of time depending on the preservation used and the stability of the analytes being tested. Once the storage period is completed the samples are discarded unless otherwise advised by the client.

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

Sample: 999977.24



Sample: 999977.26



C7 C10 C15 C20 C25 C30 C34 C44

Hill Laboratories
BETTER TESTING BETTER RESULTS

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:	Tonkin & Taylor	**Lab No:**	1000304	SPv2
Contact:	Lucy Hine	**Date Registered:**	21-Apr-2012	
	C/- Tonkin & Taylor	**Date Reported:**	02-May-2012	
	PO Box 13055	**Quote No:**		
	CHRISTCHURCH 8141	**Order No:**	53036.001	
		Client Reference:	53036.001 Target	
		Submitted By:	Wendy Dean	

Sample Type: Soil

Sample Name:		TS28 0.0 20-Apr-2012	TS29 0.0 20-Apr-2012	TS30 0.0 20-Apr-2012	TS31 0.0 20-Apr-2012	TS32 0.0 20-Apr-2012
Lab Number:		1000304.2	1000304.3	1000304.4	1000304.5	1000304.6
Individual Tests						
Dry Matter	g/100g as rcvd	79	-	84	-	-
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	6	3	7	5	4
Total Recoverable Cadmium	mg/kg dry wt	0.20	0.10	0.29	0.24	0.22
Total Recoverable Chromium	mg/kg dry wt	13	12	12	17	13
Total Recoverable Copper	mg/kg dry wt	30	19	31	31	35
Total Recoverable Lead	mg/kg dry wt	35	32	103	19.2	20
Total Recoverable Nickel	mg/kg dry wt	7	7	6	7	8
Total Recoverable Zinc	mg/kg dry wt	120	87	240	133	190
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.6	-	-	-	-
Acenaphthylene	mg/kg dry wt	< 0.6	-	-	-	-
Anthracene	mg/kg dry wt	< 0.6	-	-	-	-
Benzo[a]anthracene	mg/kg dry wt	< 0.6	-	-	-	-
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.6	-	-	-	-
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.6	-	-	-	-
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.6	-	-	-	-
Benzo[k]fluoranthene	mg/kg dry wt	< 0.6	-	-	-	-
Chrysene	mg/kg dry wt	< 0.6	-	-	-	-
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.6	-	-	-	-
Fluoranthene	mg/kg dry wt	< 0.6	-	-	-	-
Fluorene	mg/kg dry wt	< 0.6	-	-	-	-
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.6	-	-	-	-
Naphthalene	mg/kg dry wt	< 3	-	-	-	-
Phenanthrene	mg/kg dry wt	0.6	-	-	-	-
Pyrene	mg/kg dry wt	< 0.6	-	-	-	-
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	-	-	< 9	-	-
C10 - C14	mg/kg dry wt	-	-	< 20	-	-
C15 - C36	mg/kg dry wt	-	-	< 40	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	-	< 70	-	-

Sample Name:		TS33 0.0 20-Apr-2012	TS34 0.0 20-Apr-2012	TS35 0.0 20-Apr-2012	TS36 0.0 20-Apr-2012	TS37 0.0 20-Apr-2012
Lab Number:		1000304.7	1000304.8	1000304.9	1000304.10	1000304.11
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	61	-	-

Sample Type: Soil						
Sample Name:		TS33 0.0 20-Apr-2012	TS34 0.0 20-Apr-2012	TS35 0.0 20-Apr-2012	TS36 0.0 20-Apr-2012	TS37 0.0 20-Apr-2012
Lab Number:		1000304.7	1000304.8	1000304.9	1000304.10	1000304.11
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	6	18	11	6	4
Total Recoverable Cadmium	mg/kg dry wt	0.31	1.00	0.80	0.85	0.28
Total Recoverable Chromium	mg/kg dry wt	12	16	15	17	12
Total Recoverable Copper	mg/kg dry wt	37	122	210	530	27
Total Recoverable Lead	mg/kg dry wt	34	119	80	118	17.9
Total Recoverable Nickel	mg/kg dry wt	7	13	9	10	7
Total Recoverable Zinc	mg/kg dry wt	176	480	330	340	105
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	< 0.010	-	-
Alachlor	mg/kg dry wt	-	-	< 0.006	-	-
Aldrin	mg/kg dry wt	-	-	< 0.010	-	-
Atrazine	mg/kg dry wt	-	-	< 0.010	-	-
Atrazine-desethyl	mg/kg dry wt	-	-	< 0.010	-	-
Atrazine-desisopropyl	mg/kg dry wt	-	-	< 0.02	-	-
Azaconazole	mg/kg dry wt	-	-	< 0.005	-	-
Azinphos-methyl	mg/kg dry wt	-	-	< 0.02	-	-
Benalaxyl	mg/kg dry wt	-	-	< 0.005	-	-
Bendiocarb	mg/kg dry wt	-	-	< 0.010	-	-
Benodanil	mg/kg dry wt	-	-	< 0.02	-	-
alpha-BHC	mg/kg dry wt	-	-	< 0.010	-	-
beta-BHC	mg/kg dry wt	-	-	< 0.010	-	-
delta-BHC	mg/kg dry wt	-	-	< 0.010	-	-
gamma-BHC (Lindane)	mg/kg dry wt	-	-	< 0.010	-	-
Bifenthrin	mg/kg dry wt	-	-	< 0.005	-	-
Bitertanol	mg/kg dry wt	-	-	< 0.02	-	-
Bromacil	mg/kg dry wt	-	-	< 0.010	-	-
Bromophos-ethyl	mg/kg dry wt	-	-	< 0.010	-	-
Bromopropylate	mg/kg dry wt	-	-	< 0.010	-	-
Bupirimate	mg/kg dry wt	-	-	< 0.010	-	-
Buprofezin	mg/kg dry wt	-	-	< 0.010	-	-
Butachlor	mg/kg dry wt	-	-	< 0.010	-	-
Captafol	mg/kg dry wt	-	-	< 0.05	-	-
Captan	mg/kg dry wt	-	-	< 0.02	-	-
Carbaryl	mg/kg dry wt	-	-	< 0.010	-	-
Carbofenothion	mg/kg dry wt	-	-	< 0.010	-	-
Carbofuran	mg/kg dry wt	-	-	< 0.010	-	-
Carboxin	mg/kg dry wt	-	-	< 0.010	-	-
cis-Chlordane	mg/kg dry wt	-	-	< 0.010	-	-
trans-Chlordane	mg/kg dry wt	-	-	< 0.010	-	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	< 0.04	-	-
Chlorfenvinphos	mg/kg dry wt	-	-	< 0.010	-	-
Chlorfluazuron	mg/kg dry wt	-	-	< 0.010	-	-
Chlorothalonil	mg/kg dry wt	-	-	0.036	-	-
Chlorpropham	mg/kg dry wt	-	-	< 0.02	-	-
Chlorpyrifos	mg/kg dry wt	-	-	< 0.010	-	-
Chlorpyrifos-methyl	mg/kg dry wt	-	-	< 0.010	-	-
Chlortoluron	mg/kg dry wt	-	-	< 0.02	-	-
Chlozolinate	mg/kg dry wt	-	-	< 0.010	-	-
Coumaphos	mg/kg dry wt	-	-	< 0.02	-	-
Cyanazine	mg/kg dry wt	-	-	< 0.010	-	-
Cyfluthrin	mg/kg dry wt	-	-	< 0.010	-	-
Cyhalothrin	mg/kg dry wt	-	-	< 0.010	-	-
Cypermethrin	mg/kg dry wt	-	-	< 0.02	-	-
Cyproconazole	mg/kg dry wt	-	-	< 0.014	-	-

Sample Type: Soil						
Sample Name:		TS33 0.0 20-Apr-2012	TS34 0.0 20-Apr-2012	TS35 0.0 20-Apr-2012	TS36 0.0 20-Apr-2012	TS37 0.0 20-Apr-2012
Lab Number:		1000304.7	1000304.8	1000304.9	1000304.10	1000304.11
Multiresidue Pesticides in Soil samples by GCMS						
Cyprodinil	mg/kg dry wt	-	-	< 0.010	-	-
2,4'-DDD	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDD	mg/kg dry wt	-	-	< 0.010	-	-
2,4'-DDE	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDE	mg/kg dry wt	-	-	0.018	-	-
2,4'-DDT	mg/kg dry wt	-	-	< 0.010	-	-
4,4'-DDT	mg/kg dry wt	-	-	< 0.010	-	-
Total DDT Isomers	mg/kg dry wt	-	-	< 0.06	-	-
Deltamethrin	mg/kg dry wt	-	-	< 0.010	-	-
Demeton-S-methyl	mg/kg dry wt	-	-	< 0.02	-	-
Diazinon	mg/kg dry wt	-	-	< 0.005	-	-
Dichlobenil	mg/kg dry wt	-	-	< 0.010	-	-
Dichlofenthion	mg/kg dry wt	-	-	< 0.010	-	-
Dichlofluanid	mg/kg dry wt	-	-	< 0.010	-	-
Dichloran	mg/kg dry wt	-	-	< 0.03	-	-
Dichlorvos	mg/kg dry wt	-	-	< 0.010	-	-
Dicofol	mg/kg dry wt	-	-	< 0.05	-	-
Dicrotophos	mg/kg dry wt	-	-	< 0.010	-	-
Dieldrin	mg/kg dry wt	-	-	0.61	-	-
Difenoconazole	mg/kg dry wt	-	-	< 0.014	-	-
Dimethoate	mg/kg dry wt	-	-	< 0.02	-	-
Dinocap	mg/kg dry wt	-	-	< 0.12	-	-
Diphenylamine	mg/kg dry wt	-	-	< 0.02	-	-
Disulfoton	mg/kg dry wt	-	-	< 0.010	-	-
Diuron	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan I	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan II	mg/kg dry wt	-	-	< 0.010	-	-
Endosulfan sulphate	mg/kg dry wt	-	-	< 0.010	-	-
Endrin	mg/kg dry wt	-	-	< 0.010	-	-
Endrin Aldehyde	mg/kg dry wt	-	-	< 0.010	-	-
Endrin ketone	mg/kg dry wt	-	-	< 0.010	-	-
EPN	mg/kg dry wt	-	-	< 0.010	-	-
Esfenvalerate	mg/kg dry wt	-	-	< 0.014	-	-
Ethion	mg/kg dry wt	-	-	< 0.010	-	-
Etrimfos	mg/kg dry wt	-	-	< 0.010	-	-
Famphur	mg/kg dry wt	-	-	< 0.010	-	-
Fenamiphos	mg/kg dry wt	-	-	< 0.010	-	-
Fenarimol	mg/kg dry wt	-	-	< 0.010	-	-
Fenitrothion	mg/kg dry wt	-	-	< 0.010	-	-
Fenpropathrin	mg/kg dry wt	-	-	< 0.010	-	-
Fenpropimorph	mg/kg dry wt	-	-	< 0.010	-	-
Fensulfothion	mg/kg dry wt	-	-	< 0.010	-	-
Fenthion	mg/kg dry wt	-	-	< 0.010	-	-
Fenvalerate	mg/kg dry wt	-	-	< 0.014	-	-
Fluazifop-butyl	mg/kg dry wt	-	-	< 0.010	-	-
Fluometuron	mg/kg dry wt	-	-	< 0.010	-	-
Flusilazole	mg/kg dry wt	-	-	< 0.010	-	-
Fluvalinate	mg/kg dry wt	-	-	< 0.007	-	-
Folpet	mg/kg dry wt	-	-	< 0.02	-	-
Furalaxyl	mg/kg dry wt	-	-	< 0.005	-	-
Haloxyfop-methyl	mg/kg dry wt	-	-	< 0.010	-	-
Heptachlor	mg/kg dry wt	-	-	< 0.010	-	-
Heptachlor epoxide	mg/kg dry wt	-	-	< 0.010	-	-
Hexachlorobenzene	mg/kg dry wt	-	-	< 0.010	-	-
Hexaconazole	mg/kg dry wt	-	-	< 0.010	-	-

Sample Type: Soil						
Sample Name:		TS33 0.0 20-Apr-2012	TS34 0.0 20-Apr-2012	TS35 0.0 20-Apr-2012	TS36 0.0 20-Apr-2012	TS37 0.0 20-Apr-2012
Lab Number:		1000304.7	1000304.8	1000304.9	1000304.10	1000304.11
Multiresidue Pesticides in Soil samples by GCMS						
Hexazinone	mg/kg dry wt	-	-	< 0.005	-	-
Hexythiazox	mg/kg dry wt	-	-	< 0.05	-	-
Imazalil	mg/kg dry wt	-	-	< 0.05	-	-
Indoxacarb	mg/kg dry wt	-	-	< 0.010	-	-
Iodofenphos	mg/kg dry wt	-	-	< 0.010	-	-
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	< 0.05	-	-
Iprodione	mg/kg dry wt	-	-	< 0.010	-	-
Isazophos	mg/kg dry wt	-	-	< 0.010	-	-
Isofenphos	mg/kg dry wt	-	-	< 0.005	-	-
Kresoxim-methyl	mg/kg dry wt	-	-	< 0.005	-	-
Leptophos	mg/kg dry wt	-	-	< 0.010	-	-
Linuron	mg/kg dry wt	-	-	< 0.010	-	-
Malathion	mg/kg dry wt	-	-	< 0.010	-	-
Metalaxyl	mg/kg dry wt	-	-	< 0.010	-	-
Methacrifos	mg/kg dry wt	-	-	< 0.010	-	-
Methamidophos	mg/kg dry wt	-	-	< 0.05	-	-
Methidathion	mg/kg dry wt	-	-	< 0.010	-	-
Methiocarb	mg/kg dry wt	-	-	< 0.010	-	-
Methoxychlor	mg/kg dry wt	-	-	< 0.010	-	-
Metolachlor	mg/kg dry wt	-	-	< 0.006	-	-
Metribuzin	mg/kg dry wt	-	-	< 0.010	-	-
Mevinphos	mg/kg dry wt	-	-	< 0.03	-	-
Molinate	mg/kg dry wt	-	-	< 0.02	-	-
Myclobutanil	mg/kg dry wt	-	-	< 0.010	-	-
Naled	mg/kg dry wt	-	-	< 0.05	-	-
Nitrofen	mg/kg dry wt	-	-	< 0.02	-	-
Nitrothal-isopropyl	mg/kg dry wt	-	-	< 0.010	-	-
Norflurazon	mg/kg dry wt	-	-	< 0.02	-	-
Omethoate	mg/kg dry wt	-	-	< 0.05	-	-
Oxadiazon	mg/kg dry wt	-	-	< 0.010	-	-
Oxychlordane	mg/kg dry wt	-	-	< 0.005	-	-
Oxyfluorfen	mg/kg dry wt	-	-	< 0.005	-	-
Paclobutrazol	mg/kg dry wt	-	-	< 0.010	-	-
Parathion-ethyl	mg/kg dry wt	-	-	< 0.010	-	-
Parathion-methyl	mg/kg dry wt	-	-	< 0.010	-	-
Penconazole	mg/kg dry wt	-	-	< 0.010	-	-
Pendimethalin	mg/kg dry wt	-	-	< 0.010	-	-
Permethrin	mg/kg dry wt	-	-	< 0.003	-	-
Phorate	mg/kg dry wt	-	-	< 0.02	-	-
Phosmet	mg/kg dry wt	-	-	< 0.010	-	-
Phosphamidon	mg/kg dry wt	-	-	< 0.010	-	-
Pirimicarb	mg/kg dry wt	-	-	< 0.010	-	-
Pirimiphos-methyl	mg/kg dry wt	-	-	< 0.010	-	-
Prochloraz	mg/kg dry wt	-	-	< 0.05	-	-
Procymidone	mg/kg dry wt	-	-	< 0.010	-	-
Prometryn	mg/kg dry wt	-	-	< 0.005	-	-
Propachlor	mg/kg dry wt	-	-	< 0.010	-	-
Propanil	mg/kg dry wt	-	-	< 0.03	-	-
Propazine	mg/kg dry wt	-	-	< 0.005	-	-
Propetamphos	mg/kg dry wt	-	-	< 0.010	-	-
Propham	mg/kg dry wt	-	-	< 0.010	-	-
Propiconazole	mg/kg dry wt	-	-	< 0.007	-	-
Prothiofos	mg/kg dry wt	-	-	< 0.010	-	-
Pyrazophos	mg/kg dry wt	-	-	< 0.010	-	-

Sample Type: Soil						
Sample Name:		TS33 0.0 20-Apr-2012	TS34 0.0 20-Apr-2012	TS35 0.0 20-Apr-2012	TS36 0.0 20-Apr-2012	TS37 0.0 20-Apr-2012
Lab Number:		1000304.7	1000304.8	1000304.9	1000304.10	1000304.11
Multiresidue Pesticides in Soil samples by GCMS						
Pyrifenox	mg/kg dry wt	-	-	< 0.014	-	-
Pyrimethanil	mg/kg dry wt	-	-	< 0.010	-	-
Pyriproxyfen	mg/kg dry wt	-	-	< 0.010	-	-
Quintozene	mg/kg dry wt	-	-	< 0.02	-	-
Quizalofop-ethyl	mg/kg dry wt	-	-	< 0.010	-	-
Simazine	mg/kg dry wt	-	-	< 0.010	-	-
Simetryn	mg/kg dry wt	-	-	< 0.010	-	-
Sulfentrazone	mg/kg dry wt	-	-	< 0.05	-	-
Sulfotep	mg/kg dry wt	-	-	< 0.010	-	-
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	< 0.02	-	-
Tebuconazole	mg/kg dry wt	-	-	< 0.010	-	-
Tebufenpyrad	mg/kg dry wt	-	-	< 0.005	-	-
Terbacil	mg/kg dry wt	-	-	< 0.010	-	-
Terbufos	mg/kg dry wt	-	-	< 0.010	-	-
Terbumeton	mg/kg dry wt	-	-	< 0.010	-	-
Terbuthylazine	mg/kg dry wt	-	-	< 0.005	-	-
Terbuthylazine-desethyl	mg/kg dry wt	-	-	< 0.010	-	-
Terbutryn	mg/kg dry wt	-	-	< 0.010	-	-
Tetrachlorvinphos	mg/kg dry wt	-	-	< 0.010	-	-
Thiabendazole	mg/kg dry wt	-	-	< 0.05	-	-
Thiobencarb	mg/kg dry wt	-	-	< 0.010	-	-
Thiometon	mg/kg dry wt	-	-	< 0.02	-	-
Tolylfluanid	mg/kg dry wt	-	-	< 0.005	-	-
Triadimefon	mg/kg dry wt	-	-	< 0.010	-	-
Triazophos	mg/kg dry wt	-	-	< 0.010	-	-
Trifluralin	mg/kg dry wt	-	-	< 0.010	-	-
Vinclozolin	mg/kg dry wt	-	-	< 0.010	-	-
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
alpha-BHC	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
beta-BHC	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
delta-BHC	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
gamma-BHC (Lindane)	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
cis-Chlordane	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
trans-Chlordane	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	< 0.04	-	< 0.04	< 0.04
2,4'-DDD	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
4,4'-DDD	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
2,4'-DDE	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
4,4'-DDE	mg/kg dry wt	-	0.036	-	0.019	0.019
2,4'-DDT	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
4,4'-DDT	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Dieldrin	mg/kg dry wt	-	0.34	-	1.30	0.026
Endosulfan I	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Endosulfan II	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Endosulfan sulphate	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Endrin	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Endrin Aldehyde	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Endrin ketone	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Heptachlor	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Heptachlor epoxide	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Hexachlorobenzene	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011
Methoxychlor	mg/kg dry wt	-	< 0.010	-	< 0.010	< 0.011

Sample Type: Soil						
Sample Name:		TS33 0.0 20-Apr-2012	TS34 0.0 20-Apr-2012	TS35 0.0 20-Apr-2012	TS36 0.0 20-Apr-2012	TS37 0.0 20-Apr-2012
Lab Number:		1000304.7	1000304.8	1000304.9	1000304.10	1000304.11
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	-	-	< 13	-	-
C10 - C14	mg/kg dry wt	-	-	< 30	-	-
C15 - C36	mg/kg dry wt	-	-	102	-	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	-	102	-	-

Sample Name:		TS38 0.0 20-Apr-2012	TS39 0.0 20-Apr-2012	TS40 0.0 20-Apr-2012	TS41 0.0 20-Apr-2012	S25 0.3 18-Apr-2012
Lab Number:		1000304.12	1000304.13	1000304.14	1000304.15	1000304.16
Individual Tests						
Dry Matter	g/100g as rcvd	-	-	-	-	95
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	4	4	4	< 2	4
Total Recoverable Cadmium	mg/kg dry wt	0.34	0.14	0.15	< 0.10	< 0.10
Total Recoverable Chromium	mg/kg dry wt	14	13	11	11	12
Total Recoverable Copper	mg/kg dry wt	35	21	14	5	7
Total Recoverable Lead	mg/kg dry wt	22	62	17.1	14.7	11.8
Total Recoverable Nickel	mg/kg dry wt	6	7	6	7	9
Total Recoverable Zinc	mg/kg dry wt	109	74	57	52	44
Organochlorine Pesticides Screening in Soil						
Aldrin	mg/kg dry wt	< 0.010	-	-	< 0.010	-
alpha-BHC	mg/kg dry wt	< 0.010	-	-	< 0.010	-
beta-BHC	mg/kg dry wt	< 0.010	-	-	< 0.010	-
delta-BHC	mg/kg dry wt	< 0.010	-	-	< 0.010	-
gamma-BHC (Lindane)	mg/kg dry wt	< 0.010	-	-	< 0.010	-
cis-Chlordane	mg/kg dry wt	< 0.010	-	-	< 0.010	-
trans-Chlordane	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	< 0.04	-	-	< 0.04	-
2,4'-DDD	mg/kg dry wt	< 0.010	-	-	< 0.010	-
4,4'-DDD	mg/kg dry wt	< 0.010	-	-	< 0.010	-
2,4'-DDE	mg/kg dry wt	< 0.010	-	-	< 0.010	-
4,4'-DDE	mg/kg dry wt	0.014	-	-	0.022	-
2,4'-DDT	mg/kg dry wt	< 0.010	-	-	< 0.010	-
4,4'-DDT	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Dieldrin	mg/kg dry wt	0.046	-	-	< 0.010	-
Endosulfan I	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Endosulfan II	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Endosulfan sulphate	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Endrin	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Endrin Aldehyde	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Endrin ketone	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Heptachlor	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Heptachlor epoxide	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Hexachlorobenzene	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Methoxychlor	mg/kg dry wt	< 0.010	-	-	< 0.010	-
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	-	-	-	-	< 0.03
Acenaphthylene	mg/kg dry wt	-	-	-	-	< 0.03
Anthracene	mg/kg dry wt	-	-	-	-	< 0.03
Benzo[a]anthracene	mg/kg dry wt	-	-	-	-	< 0.03
Benzo[a]pyrene (BAP)	mg/kg dry wt	-	-	-	-	< 0.03
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	-	-	-	-	< 0.03
Benzo[g,h,i]perylene	mg/kg dry wt	-	-	-	-	< 0.03
Benzo[k]fluoranthene	mg/kg dry wt	-	-	-	-	< 0.03
Chrysene	mg/kg dry wt	-	-	-	-	< 0.03

Sample Type: Soil						
Sample Name:		TS38 0.0 20-Apr-2012	TS39 0.0 20-Apr-2012	TS40 0.0 20-Apr-2012	TS41 0.0 20-Apr-2012	S25 0.3 18-Apr-2012
Lab Number:		1000304.12	1000304.13	1000304.14	1000304.15	1000304.16
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Dibenzo[a,h]anthracene	mg/kg dry wt	-	-	-	-	< 0.03
Fluoranthene	mg/kg dry wt	-	-	-	-	< 0.03
Fluorene	mg/kg dry wt	-	-	-	-	< 0.03
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	-	-	-	-	< 0.03
Naphthalene	mg/kg dry wt	-	-	-	-	< 0.12
Phenanthrene	mg/kg dry wt	-	-	-	-	< 0.03
Pyrene	mg/kg dry wt	-	-	-	-	< 0.03

Sample Name:		TS28 0.3 20-Apr-2012	TS17 0.3 19-Apr-2012	TS20 0.3 19-Apr-2012	TS13 0.3 19-Apr-2012	TS18 0.3 19-Apr-2012
Lab Number:		1000304.17	1000304.18	1000304.19	1000304.20	1000304.21
Individual Tests						
Dry Matter	g/100g as rcvd	88	-	-	79	86
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn						
Total Recoverable Arsenic	mg/kg dry wt	3	2	< 2	-	2
Total Recoverable Cadmium	mg/kg dry wt	< 0.10	< 0.10	< 0.10	-	0.11
Total Recoverable Chromium	mg/kg dry wt	11	11	12	-	10
Total Recoverable Copper	mg/kg dry wt	7	3	3	-	3
Total Recoverable Lead	mg/kg dry wt	14.1	10.2	11.5	-	11.8
Total Recoverable Nickel	mg/kg dry wt	7	7	6	-	6
Total Recoverable Zinc	mg/kg dry wt	48	32	40	-	36
Multiresidue Pesticides in Soil samples by GCMS						
Acetochlor	mg/kg dry wt	-	-	-	-	< 0.007
Alachlor	mg/kg dry wt	-	-	-	-	< 0.006
Aldrin	mg/kg dry wt	-	-	-	-	< 0.010
Atrazine	mg/kg dry wt	-	-	-	-	< 0.007
Atrazine-desethyl	mg/kg dry wt	-	-	-	-	< 0.007
Atrazine-desisopropyl	mg/kg dry wt	-	-	-	-	< 0.014
Azaconazole	mg/kg dry wt	-	-	-	-	< 0.004
Azinphos-methyl	mg/kg dry wt	-	-	-	-	< 0.014
Benalaxyl	mg/kg dry wt	-	-	-	-	< 0.004
Bendiocarb	mg/kg dry wt	-	-	-	-	< 0.007
Benodanil	mg/kg dry wt	-	-	-	-	< 0.014
alpha-BHC	mg/kg dry wt	-	-	-	-	< 0.010
beta-BHC	mg/kg dry wt	-	-	-	-	< 0.010
delta-BHC	mg/kg dry wt	-	-	-	-	< 0.010
gamma-BHC (Lindane)	mg/kg dry wt	-	-	-	-	< 0.010
Bifenthrin	mg/kg dry wt	-	-	-	-	< 0.004
Bitertanol	mg/kg dry wt	-	-	-	-	< 0.014
Bromacil	mg/kg dry wt	-	-	-	-	< 0.007
Bromophos-ethyl	mg/kg dry wt	-	-	-	-	< 0.007
Bromopropylate	mg/kg dry wt	-	-	-	-	< 0.007
Bupirimate	mg/kg dry wt	-	-	-	-	< 0.007
Buprofezin	mg/kg dry wt	-	-	-	-	< 0.007
Butachlor	mg/kg dry wt	-	-	-	-	< 0.007
Captafol	mg/kg dry wt	-	-	-	-	< 0.04
Captan	mg/kg dry wt	-	-	-	-	< 0.014
Carbaryl	mg/kg dry wt	-	-	-	-	< 0.007
Carbofenothion	mg/kg dry wt	-	-	-	-	< 0.007
Carbofuran	mg/kg dry wt	-	-	-	-	< 0.007
Carboxin	mg/kg dry wt	-	-	-	-	< 0.007
cis-Chlordane	mg/kg dry wt	-	-	-	-	< 0.010
trans-Chlordane	mg/kg dry wt	-	-	-	-	< 0.010
Total Chlordane [(cis+trans)* 100/42]	mg/kg dry wt	-	-	-	-	< 0.04
Chlorfenvinphos	mg/kg dry wt	-	-	-	-	< 0.007

Sample Type: Soil						
	Sample Name:	TS28 0.3 20-Apr-2012	TS17 0.3 19-Apr-2012	TS20 0.3 19-Apr-2012	TS13 0.3 19-Apr-2012	TS18 0.3 19-Apr-2012
	Lab Number:	1000304.17	1000304.18	1000304.19	1000304.20	1000304.21
Multiresidue Pesticides in Soil samples by GCMS						
Chlorfluazuron	mg/kg dry wt	-	-	-	-	< 0.007
Chlorothalonil	mg/kg dry wt	-	-	-	-	< 0.007
Chlorpropham	mg/kg dry wt	-	-	-	-	< 0.014
Chlorpyrifos	mg/kg dry wt	-	-	-	-	< 0.007
Chlorpyrifos-methyl	mg/kg dry wt	-	-	-	-	< 0.007
Chlortoluron	mg/kg dry wt	-	-	-	-	< 0.014
Chlozolinate	mg/kg dry wt	-	-	-	-	< 0.007
Coumaphos	mg/kg dry wt	-	-	-	-	< 0.014
Cyanazine	mg/kg dry wt	-	-	-	-	< 0.007
Cyfluthrin	mg/kg dry wt	-	-	-	-	< 0.007
Cyhalothrin	mg/kg dry wt	-	-	-	-	< 0.007
Cypermethrin	mg/kg dry wt	-	-	-	-	< 0.014
Cyproconazole	mg/kg dry wt	-	-	-	-	< 0.010
Cyprodinil	mg/kg dry wt	-	-	-	-	< 0.007
2,4'-DDD	mg/kg dry wt	-	-	-	-	< 0.010
4,4'-DDD	mg/kg dry wt	-	-	-	-	< 0.010
2,4'-DDE	mg/kg dry wt	-	-	-	-	< 0.010
4,4'-DDE	mg/kg dry wt	-	-	-	-	0.032
2,4'-DDT	mg/kg dry wt	-	-	-	-	< 0.010
4,4'-DDT	mg/kg dry wt	-	-	-	-	< 0.010
Total DDT Isomers	mg/kg dry wt	-	-	-	-	< 0.06
Deltamethrin	mg/kg dry wt	-	-	-	-	< 0.007
Demeton-S-methyl	mg/kg dry wt	-	-	-	-	< 0.014
Diazinon	mg/kg dry wt	-	-	-	-	< 0.004
Dichlobenil	mg/kg dry wt	-	-	-	-	< 0.007
Dichlofenthion	mg/kg dry wt	-	-	-	-	< 0.007
Dichlofluanid	mg/kg dry wt	-	-	-	-	< 0.007
Dichloran	mg/kg dry wt	-	-	-	-	< 0.03
Dichlorvos	mg/kg dry wt	-	-	-	-	< 0.010
Dicofol	mg/kg dry wt	-	-	-	-	< 0.04
Dicrotophos	mg/kg dry wt	-	-	-	-	< 0.007
Dieldrin	mg/kg dry wt	-	-	-	-	< 0.010
Difenoconazole	mg/kg dry wt	-	-	-	-	< 0.010
Dimethoate	mg/kg dry wt	-	-	-	-	< 0.014
Dinocap	mg/kg dry wt	-	-	-	-	< 0.08
Diphenylamine	mg/kg dry wt	-	-	-	-	< 0.014
Disulfoton	mg/kg dry wt	-	-	-	-	< 0.007
Diuron	mg/kg dry wt	-	-	-	-	< 0.007
Endosulfan I	mg/kg dry wt	-	-	-	-	< 0.010
Endosulfan II	mg/kg dry wt	-	-	-	-	< 0.010
Endosulfan sulphate	mg/kg dry wt	-	-	-	-	< 0.010
Endrin	mg/kg dry wt	-	-	-	-	< 0.010
Endrin Aldehyde	mg/kg dry wt	-	-	-	-	< 0.010
Endrin ketone	mg/kg dry wt	-	-	-	-	< 0.010
EPN	mg/kg dry wt	-	-	-	-	< 0.007
Esfenvalerate	mg/kg dry wt	-	-	-	-	< 0.010
Ethion	mg/kg dry wt	-	-	-	-	< 0.007
Etrimfos	mg/kg dry wt	-	-	-	-	< 0.007
Famphur	mg/kg dry wt	-	-	-	-	< 0.007
Fenamiphos	mg/kg dry wt	-	-	-	-	< 0.007
Fenarimol	mg/kg dry wt	-	-	-	-	< 0.007
Fenitrothion	mg/kg dry wt	-	-	-	-	< 0.007
Fenpropathrin	mg/kg dry wt	-	-	-	-	< 0.007
Fenpropimorph	mg/kg dry wt	-	-	-	-	< 0.007
Fensulfothion	mg/kg dry wt	-	-	-	-	< 0.007

Sample Type: Soil						
Sample Name:		TS28 0.3 20-Apr-2012	TS17 0.3 19-Apr-2012	TS20 0.3 19-Apr-2012	TS13 0.3 19-Apr-2012	TS18 0.3 19-Apr-2012
Lab Number:		1000304.17	1000304.18	1000304.19	1000304.20	1000304.21
Multiresidue Pesticides in Soil samples by GCMS						
Fenthion	mg/kg dry wt	-	-	-	-	< 0.007
Fenvalerate	mg/kg dry wt	-	-	-	-	< 0.010
Fluazifop-butyl	mg/kg dry wt	-	-	-	-	< 0.007
Fluometuron	mg/kg dry wt	-	-	-	-	< 0.007
Flusilazole	mg/kg dry wt	-	-	-	-	< 0.007
Fluvalinate	mg/kg dry wt	-	-	-	-	< 0.006
Folpet	mg/kg dry wt	-	-	-	-	< 0.014
Furalaxyl	mg/kg dry wt	-	-	-	-	< 0.004
Haloxyfop-methyl	mg/kg dry wt	-	-	-	-	< 0.007
Heptachlor	mg/kg dry wt	-	-	-	-	< 0.010
Heptachlor epoxide	mg/kg dry wt	-	-	-	-	< 0.010
Hexachlorobenzene	mg/kg dry wt	-	-	-	-	< 0.010
Hexaconazole	mg/kg dry wt	-	-	-	-	< 0.007
Hexazinone	mg/kg dry wt	-	-	-	-	< 0.004
Hexythiazox	mg/kg dry wt	-	-	-	-	< 0.04
Imazalil	mg/kg dry wt	-	-	-	-	< 0.04
Indoxacarb	mg/kg dry wt	-	-	-	-	< 0.007
Iodofenphos	mg/kg dry wt	-	-	-	-	< 0.007
IPBC (3-Iodo-2-propynyl-n-butylcarbamate)	mg/kg dry wt	-	-	-	-	< 0.04
Iprodione	mg/kg dry wt	-	-	-	-	< 0.007
Isazophos	mg/kg dry wt	-	-	-	-	< 0.007
Isofenphos	mg/kg dry wt	-	-	-	-	< 0.004
Kresoxim-methyl	mg/kg dry wt	-	-	-	-	< 0.004
Leptophos	mg/kg dry wt	-	-	-	-	< 0.007
Linuron	mg/kg dry wt	-	-	-	-	< 0.007
Malathion	mg/kg dry wt	-	-	-	-	< 0.007
Metalaxyl	mg/kg dry wt	-	-	-	-	< 0.007
Methacrifos	mg/kg dry wt	-	-	-	-	< 0.007
Methamidophos	mg/kg dry wt	-	-	-	-	< 0.04
Methidathion	mg/kg dry wt	-	-	-	-	< 0.007
Methiocarb	mg/kg dry wt	-	-	-	-	< 0.007
Methoxychlor	mg/kg dry wt	-	-	-	-	< 0.010
Metolachlor	mg/kg dry wt	-	-	-	-	< 0.006
Metribuzin	mg/kg dry wt	-	-	-	-	< 0.007
Mevinphos	mg/kg dry wt	-	-	-	-	< 0.02
Molinate	mg/kg dry wt	-	-	-	-	< 0.014
Myclobutanil	mg/kg dry wt	-	-	-	-	< 0.007
Naled	mg/kg dry wt	-	-	-	-	< 0.04
Nitrofen	mg/kg dry wt	-	-	-	-	< 0.014
Nitrothal-isopropyl	mg/kg dry wt	-	-	-	-	< 0.007
Norflurazon	mg/kg dry wt	-	-	-	-	< 0.014
Omethoate	mg/kg dry wt	-	-	-	-	< 0.04
Oxadiazon	mg/kg dry wt	-	-	-	-	< 0.007
Oxychlordane	mg/kg dry wt	-	-	-	-	< 0.004
Oxyfluorfen	mg/kg dry wt	-	-	-	-	< 0.004
Paclobutrazol	mg/kg dry wt	-	-	-	-	< 0.007
Parathion-ethyl	mg/kg dry wt	-	-	-	-	< 0.007
Parathion-methyl	mg/kg dry wt	-	-	-	-	< 0.007
Penconazole	mg/kg dry wt	-	-	-	-	< 0.007
Pendimethalin	mg/kg dry wt	-	-	-	-	< 0.007
Permethrin	mg/kg dry wt	-	-	-	-	< 0.003
Phorate	mg/kg dry wt	-	-	-	-	< 0.014
Phosmet	mg/kg dry wt	-	-	-	-	< 0.007
Phosphamidon	mg/kg dry wt	-	-	-	-	< 0.007

Sample Type: Soil						
Sample Name:		TS28 0.3 20-Apr-2012	TS17 0.3 19-Apr-2012	TS20 0.3 19-Apr-2012	TS13 0.3 19-Apr-2012	TS18 0.3 19-Apr-2012
Lab Number:		1000304.17	1000304.18	1000304.19	1000304.20	1000304.21
Multiresidue Pesticides in Soil samples by GCMS						
Pirimicarb	mg/kg dry wt	-	-	-	-	< 0.007
Pirimiphos-methyl	mg/kg dry wt	-	-	-	-	< 0.007
Prochloraz	mg/kg dry wt	-	-	-	-	< 0.04
Procymidone	mg/kg dry wt	-	-	-	-	< 0.007
Prometryn	mg/kg dry wt	-	-	-	-	< 0.004
Propachlor	mg/kg dry wt	-	-	-	-	< 0.007
Propanil	mg/kg dry wt	-	-	-	-	< 0.03
Propazine	mg/kg dry wt	-	-	-	-	< 0.004
Propetamphos	mg/kg dry wt	-	-	-	-	< 0.007
Propham	mg/kg dry wt	-	-	-	-	< 0.007
Propiconazole	mg/kg dry wt	-	-	-	-	< 0.006
Prothiofos	mg/kg dry wt	-	-	-	-	< 0.007
Pyrazophos	mg/kg dry wt	-	-	-	-	< 0.007
Pyrifenox	mg/kg dry wt	-	-	-	-	< 0.010
Pyrimethanil	mg/kg dry wt	-	-	-	-	< 0.007
Pyriproxyfen	mg/kg dry wt	-	-	-	-	< 0.007
Quintozene	mg/kg dry wt	-	-	-	-	< 0.014
Quizalofop-ethyl	mg/kg dry wt	-	-	-	-	< 0.007
Simazine	mg/kg dry wt	-	-	-	-	< 0.007
Simetryn	mg/kg dry wt	-	-	-	-	< 0.007
Sulfentrazone	mg/kg dry wt	-	-	-	-	< 0.04
Sulfotep	mg/kg dry wt	-	-	-	-	< 0.007
TCMTB [2-(thiocyanomethylthio) benzothiazole,Busan]	mg/kg dry wt	-	-	-	-	< 0.014
Tebuconazole	mg/kg dry wt	-	-	-	-	< 0.007
Tebufenpyrad	mg/kg dry wt	-	-	-	-	< 0.004
Terbacil	mg/kg dry wt	-	-	-	-	< 0.007
Terbufos	mg/kg dry wt	-	-	-	-	< 0.007
Terbumeton	mg/kg dry wt	-	-	-	-	< 0.007
Terbuthylazine	mg/kg dry wt	-	-	-	-	< 0.004
Terbuthylazine-desethyl	mg/kg dry wt	-	-	-	-	< 0.007
Terbutryn	mg/kg dry wt	-	-	-	-	< 0.007
Tetrachlorvinphos	mg/kg dry wt	-	-	-	-	< 0.007
Thiabendazole	mg/kg dry wt	-	-	-	-	< 0.04
Thiobencarb	mg/kg dry wt	-	-	-	-	< 0.007
Thiometon	mg/kg dry wt	-	-	-	-	< 0.014
Tolylfluanid	mg/kg dry wt	-	-	-	-	< 0.004
Triadimefon	mg/kg dry wt	-	-	-	-	< 0.007
Triazophos	mg/kg dry wt	-	-	-	-	< 0.007
Trifluralin	mg/kg dry wt	-	-	-	-	< 0.007
Vinclozolin	mg/kg dry wt	-	-	-	-	< 0.007
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Acenaphthene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Acenaphthylene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Anthracene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Benzo[a]anthracene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Benzo[a]pyrene (BAP)	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Benzo[b]fluoranthene + Benzo[j] fluoranthene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Benzo[g,h,i]perylene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Benzo[k]fluoranthene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Chrysene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Dibenzo[a,h]anthracene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Fluoranthene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Fluorene	mg/kg dry wt	< 0.03	-	-	-	< 0.03

Sample Type: Soil						
Sample Name:		TS28 0.3 20-Apr-2012	TS17 0.3 19-Apr-2012	TS20 0.3 19-Apr-2012	TS13 0.3 19-Apr-2012	TS18 0.3 19-Apr-2012
Lab Number:		1000304.17	1000304.18	1000304.19	1000304.20	1000304.21
Polycyclic Aromatic Hydrocarbons Screening in Soil						
Indeno(1,2,3-c,d)pyrene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Naphthalene	mg/kg dry wt	< 0.14	-	-	-	< 0.14
Phenanthrene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Pyrene	mg/kg dry wt	< 0.03	-	-	-	< 0.03
Total Petroleum Hydrocarbons in Soil						
C7 - C9	mg/kg dry wt	-	-	-	< 9	-
C10 - C14	mg/kg dry wt	-	-	-	230	-
C15 - C36	mg/kg dry wt	-	-	-	1,380	-
Total hydrocarbons (C7 - C36)	mg/kg dry wt	-	-	-	1,620	-

Analyst's Comments

Appendix No.1 - Asbestos Report - 1000304

Appendix No.2 - 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. Used for sample preparation. May contain a residual moisture content of 2-5%.	-	2-19, 21
Heavy metal screen level As,Cd,Cr,Cu,Ni,Pb,Zn	Dried sample, <2mm fraction. Nitric/Hydrochloric acid digestion, ICP-MS, screen level.	-	2-19, 21
Multiresidue Pesticides in Soil samples by GCMS	Sonication extraction, GPC cleanup, GC-MS analysis. Tested on as received sample, then results corrected to a dry weight basis using the separate Dry Matter result.	-	9, 21
Organochlorine Pesticides Screening in Soil	Sonication extraction, SPE cleanup, dual column GC-ECD analysis (modified US EPA 8082).. Tested on dried sample	-	8, 10-12, 15
Polycyclic Aromatic Hydrocarbons Screening in Soil	Sonication extraction, Dilution or SPE cleanup (if required), GC-MS SIM analysis (modified US EPA 8270). Tested on as received sample.	-	2, 16-17, 21
Total Petroleum Hydrocarbons in Soil	Sonication extraction in DCM, Silica cleanup, GC-FID analysis US EPA 8015B/MfE Petroleum Industry Guidelines. Tested on as received sample	-	4, 9, 20
Dry Matter (Env)	Dried at 103°C for 4-22hr (removes 3-5% more water than air dry) , gravimetry. US EPA 3550. (Free water removed before analysis).	0.10 g/100g as rcvd	2, 4, 9, 16-17, 20-21
Total Recoverable digestion	Nitric / hydrochloric acid digestion. US EPA 200.2.	-	2-19, 21
Asbestos	150-200g, sealed plastic bag. Polarised Light Microscopy and dispersion staining techniques. Subcontracted to Dowdell & Associates, 4 Cain Road, Penrose, Auckland. AS 4964 (2004) - Method for the Qualitative / Semi-Quantitative Identification of Asbestos in Bulk Samples.	-	13-14

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.

Ara Heron BSc (Tech)
Client Services Manager - Environmental Division

DOWDELL & ASSOCIATES LTD

OCCUPATIONAL HEALTH ANALYSTS & CONSULTANTS

4 Cain Rd, Penrose, PO Box 112-017 Auckland 1642, Phone (09) 5260-246. Fax (09) 5795-389.

26th April 2012

Hill Laboratories
Private Bag 3205
Hamilton

Dear Sir/Madam,

Re: Bulk Fibre Analysis -

Sampled by	: Client
Date Samples Received	: 26th April 2012
Laboratory No.	: 27498
Location/Description	: 2 x soil samples for asbestos ID (P/O: 129194)
Method	: AS 4964 (2004) - Method for the Qualitative Identification of Asbestos in Bulk Samples.

The following samples were examined using Low Powered Stereomicroscopy followed by 'Polarised Light Microscopy' including Dispersion Staining Techniques.
The following results apply to the samples as received.

Reg No: 94324 **Description:** Soil 1000304/13
Sample Size: 94.87g wet weight / 77.82g dry
Result: Asbestos **NOT** detected

Reg No: 94325 **Description:** Soil 1000304/14
Sample Size: 98.60g wet weight / 75.30g dry
Result: Asbestos **NOT** detected

Yours Faithfully
DOWDELL & ASSOCIATES LTD

I.B. Murgatroyd BSc.
Consultant

586 new zealand accredited laboratory

Q.E. Dowdell NZCS MNZMS
Director

NOTES:

- This report must not be altered, or reproduced except in full.

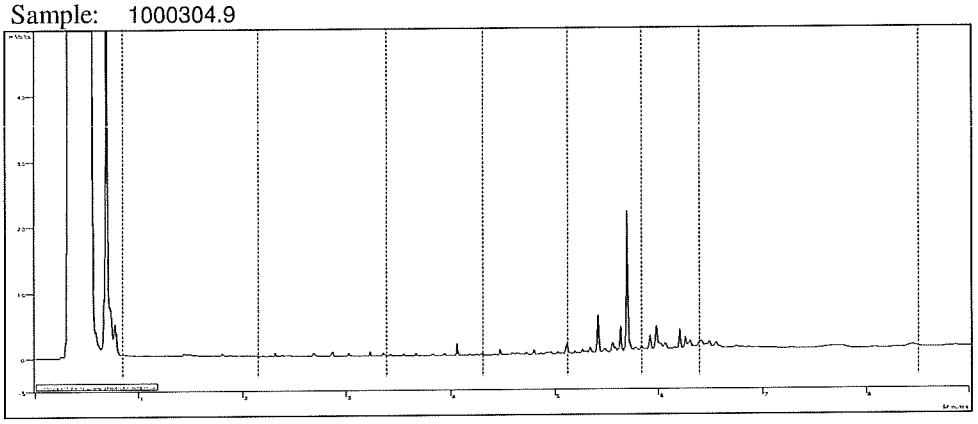
- Sample weights are defined as;

a) (Wet Weight) – Weight of Sample that has been Analysed.

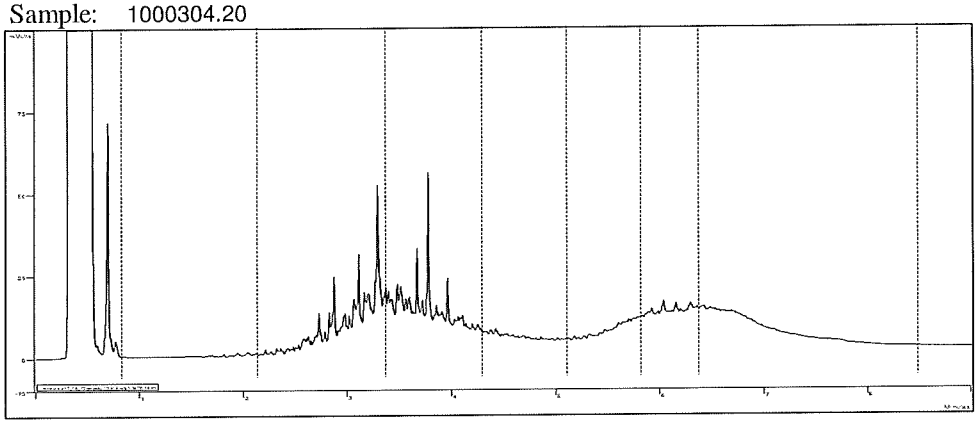
b) (Dry Basis) - The combusted dry weight of the Analysed Sample.

- New Zealand has no specific guidelines with regard to asbestos content in soils. However, we recommend that the Australian Government's enHealth Council's Document 'Management of Asbestos in the Non-Occupational Environment' – 2005 and the (DOH) WA's 'Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia – May 2009 be consulted.

Sample: 1000304.9



Sample: 1000304.20



C7 C10 C15 C20 C25 C30 C34 C44