Waitaha Catchment
Joint Monitoring Programme
Annual Report
2012-2013

Technical Report 2013–84

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Executive summary

The 2012-2013 annual compliance monitoring report is the nineteenth such report to be prepared for the joint monitoring programme in the Waitaha Stream catchment. The monitoring programme was established in 1994 to integrate the monitoring associated with the air and water monitoring of the formaldehyde resin manufacturing plant now owned by AICA (NZ) Limited (formerly owned by Dynea NZ Limited) and Taranaki Sawmills Limited with other discharges in the catchment. Eleven industrial premises are now monitored under this programme. The monitoring reflects an on-going process of identifying and improving discharges into the catchment in a similar manner to the management of those in the neighbouring Mangati Stream catchment.

A total of fourteen consents were included in the joint monitoring programme during the 2012-2013 monitoring period. Of the fourteen consents included in the monitoring programme, nine licenced discharges to water and five licenced discharges to air. These consents include a total of 133 special conditions.

The Council's monitoring included 50 inspections, 53 water samples collected for physicochemical analysis, review of consent holder and third party monitoring data, odour surveys, ambient air quality analyses, ambient PM_{10} monitoring, and deposition gauging.

There were a total of eleven Unauthorised Incidents (UI's) recorded in this catchment during the period under review, only four of which could be substantiated at the time of investigation by Council Officers. Only one of the substantiated incidents related to a consent holder monitored under this programme (Symons Property Developments Limited), however the incident was as a result of dust complaints, rather than the exercise of the Company's stormwater consent.

Overall, a high level of environmental performance was achieved by the consent holders in the industrial area of the Waitaha Stream catchment.

During the period under review, C&O Concrete Products Limited, New Plymouth District Council, Parker Drilling International of New Zealand Limited, TBS Coatings Limited, Transpacific Industrial Solutions Limited, Woodwards 2008 Limited and Zelam Limited demonstrated a high level of environmental performance. AICA (NZ) Limited, Symons Property Developments Limited, Taranaki Sawmills Limited, and Weatherford New Zealand Limited demonstrated a good level of environmental performance.

This report includes recommendations for the 2013-2014 year.

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1. Introduction

1.1 Compliance monitoring programme reports and the Resource Management Act 1991

1.1.1 Introduction

This report is the Annual Report for the period July 2012-June 2013 by the Taranaki Regional Council on the monitoring programme associated with fourteen resource consents held by eleven companies in the Waitaha catchment.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of these consents, which relate to discharges to water and emissions to air within the Waitaha catchment.

One of the intents of *the Resource Management Act 1991* (RMA) is that environmental management should be integrated across all media, so that a consent holder's use of water, air, and land should be considered from a single comprehensive environmental perspective. Accordingly, the Taranaki Regional Council generally implements integrated environmental monitoring programmes and reports the results of the programmes jointly. This report discusses the environmental effects of water and air discharges by companies within the Waitaha catchment, and is the seventeenth combined annual report by the Taranaki Regional Council for this catchment.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the RMA and the Council's obligations and general approach to monitoring sites through annual programmes, a summary of the resource consents held by companies in the Waitaha catchment, and the nature of the monitoring programme in place for the period under review.

Each company's activity is then discussed in detail in a separate section (sections 2 to 12).

In each subsection 1 (e.g. section 2.1) there is a general description of the industrial activity and its discharges, a photograph or map showing the location of the activity, and an outline of the matters covered by the company's permit/s

Subsection 2 presents the results of monitoring of the company's activities during the period under review, including scientific and technical data, and any information on the Council's Register of Incidents.

Subsection 3 discusses the results, their interpretation, and their significance for the environment in the immediate vicinity of the site under discussion.

Subsection 4 presents recommendations to be implemented in the 2013-2014 monitoring year.

Section 13 presents a summary of the information on file about any unauthorised incidents logged on the Council's database that occurred within the Waitaha catchment.

Section 14 discusses the results of the monitoring of the Waitaha Stream, their interpretation and their significance.

Section 15 presents a summary of all the recommendations made in relation to the monitoring of each company's activities.

A glossary of common abbreviations and scientific terms, and a bibliography, are presented at the end of the report.

1.1.3 The Resource Management Act 1991 and monitoring

The *Resource Management Act 1991* (RMA) primarily addresses environmental 'effects' which are defined as positive or adverse, temporary or permanent, past, present or future, or cumulative. Effects may arise in relation to:

(a) the neighbourhood or the wider community around a discharger, and may include cultural and socio-economic effects;
(b) physical effects on the locality, including landscape, amenity and visual effects;
(c) ecosystems, including effects on plants, animals, or habitats, whether aquatic or terrestrial;
(d) natural and physical resources having special significance (eg, recreational, cultural, or aesthetic);
(e) risks to the neighbourhood or environment.

In drafting and reviewing conditions on discharge permits, and in implementing monitoring programmes, the Taranaki Regional Council is recognising the comprehensive meaning of `effects' inasmuch as is appropriate for each discharge source. Monitoring programmes are not only based on existing permit conditions, but also on the obligations of the RMA to assess the effects of the exercise of consents. In accordance with section 35 of the RMA, the Council undertakes compliance monitoring for consents and rules in regional plans; and maintains an overview of performance of resource users against regional plans and consents. Compliance monitoring, (covering both activity and impact) monitoring, also enables the Council to continuously assess its own performance in resource management as well as that of resource users particularly consent holders. It further enables the Council to continually re-evaluate its approach and that of consent holders to resource management, and, ultimately, through the refinement of methods, and considered responsible resource utilisation to move closer to achieving sustainable development of the region's resources.

1.1.4 Investigations, interventions, and incidents

The monitoring programme for the year was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holders. During the year matters may arise which require additional activity by the Council eg provision of advice and information, or investigation of potential or actual courses

of non-compliance or failure to maintain good practices. A pro-active approach that in the first instance avoids issues occurring is favoured.

The Taranaki Regional Council operates and maintains a register of all complaints or reported and discovered excursions from acceptable limits and practices, including non-compliance with consents, which may damage the environment. The Unauthorised Incident Register (UIR) includes events where the company concerned has itself notified the Council. The register contains details of any investigation and corrective action taken.

Complaints may be alleged to be associated with a particular site. If there is potentially an issue of legal liability, the Council must be able to prove by investigation that the identified company is indeed the source of the incident (or that the allegation cannot be proven).

1.1.5 Evaluation of environmental performance

Besides discussing the various details of the performance and extent of compliance by the companies in the catchment during the period under review, this report also assigns an overall rating. The categories used by the Council, and their interpretation, are as follows:

- A **high** level of environmental performance and compliance indicates that essentially there were no adverse environmental effects to be concerned about, and no, or inconsequential (such as data supplied after a deadline) non-compliance with conditions.

- A **good** level of environmental performance and compliance indicates that adverse environmental effects of activities during the monitoring period were negligible or minor at most, or, the Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices or infringement notices, or, there were perhaps some items noted on inspection notices for attention but these items were not urgent nor critical, and follow-up inspections showed they have been dealt with, and any inconsequential non compliances with conditions were resolved positively, co-operatively, and quickly.

- **Improvement required (environmental)** or **improvement required (administrative compliance)** (as appropriate) indicates that the Council may have been obliged to record a verified unauthorised incident involving measurable environmental impacts, and/or, there were measurable environmental effects arising from activities and intervention by Council staff was required and there were matters that required urgent intervention, took some time to resolve, or remained unresolved at the end of the period under review, and/or, there were on-going issues around meeting resource consent conditions even in the absence of environmental effects. Abatement notices may have been issued.

- **Poor performance (environmental)** or **poor performance (administrative compliance)** indicates generally that the Council was obliged to record a verified unauthorised incident involving significant environmental impacts, or there were material failings to comply with resource consent conditions that required

significant intervention by the Council even in the absence of environmental effects. Typically there were grounds for either a prosecution or an infringement notice.

1.2 Resource consents

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Sections 15(1)(b) and (d) of the RMA stipulate that no person may discharge any contaminant onto land if it may then enter water, or from any industrial or trade premises onto land under any circumstances, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

The resource consents covered by the Waitaha Joint Monitoring programme are shown in Table 1 and their locations are shown in Figure 1. The programme covered fourteen consents during the 2012-2013 year. Nine consents license discharges to water and five are for discharges to air. There are a small number of other consented discharges in the catchment, such as agricultural discharges, which are not covered directly by this monitoring programme.

Outlines of the companies' activities and the special conditions on their consents are presented in later sections, and copies of the full consents are given in alphabetical order in Appendix I.

Table 1 Resource consents in the Waitaha catchment covered by this report

Resource consent	Consent holder	Purpose	Next review date	Expiry date
2367-2	AICA (NZ) Ltd	Discharge up to 150 Ls^{-1} of stormwater from a chemical manufacturing into a wetland at the headwaters of an unnamed tributary of the Waitaha Stream.	-	1 June 2014
4021-2	AICA (NZ) Ltd	Discharge to air from the manufacture of formaldehyde solution and urea formaldehyde resin and associated activities.	-	1 June 2014
4777-1	C&O Concrete Products Ltd	Discharge up to 40 Ls^{-1} of stormwater from a concrete products manufacturing site to the Waitaha Stream.	-	1 June 2014
0608-3	New Plymouth District Council	Discharge stormwater from the Connett Road industrial subdivision into the Waitaha Stream.	June 2014	1 Jun 2026
0609-2	New Plymouth District Council	Discharge up to 1,200 Ls^{-1} of stormwater from an industrial subdivision to an unnamed tributary of the Waitaha Stream.	-	1 June 2014
4988-1	Parker Drilling International of New Zealand Ltd	Discharge up to 110 Ls^{-1} of stormwater and 200 L per day of wash down water from a hydrocarbon exploration drilling equipment storage yard to an unnamed tributary of the Waitaha Stream.	-	1 June 2014
7805-1	Symons Property Development Ltd	To discharge stormwater from a truck depot and pipe cleaning facility into the Waitaha Stream.	June 2014	June 2026
2333-3	Taranaki Sawmills Ltd	To discharge stormwater from a sawmill operating site onto and into land and into the Waitaha Stream.	-	1 June 2014
4096-2	Taranaki Sawmills Ltd	To discharge emissions into the air from sawmilling and untreated timber processing and associated activities including the combustion of wood and/or coal within boilers and wastes in an open fire-pit.	June 2014	1 June 2032
4056-2	TBS Coatings Ltd	Discharge emissions into the air from abrasive blasting operations and associated processes at a permanent site at Corbett Road, Bell Block, and from mobile operations at various locations throughout the Taranaki region.	June 2014	1 June 2020
4776-1	Transpacific Industrial Solutions	Discharge up to 65 Ls^{-1} of stormwater from a truck depot site to the Waitaha Stream.	-	1 June 2014
4775-1	Weatherford New Zealand Ltd	To discharge up to 130 Ls^{-1} of treated stormwater and minor treated washdown water from an oilfield engineering services premises onto land and into an unnamed tributary of the Waitaha Stream.	-	1 June 2014
7881-1	Woodwards 2008 Limited	To discharge emissions into air from the combustion of untreated timber wastes	June 2014	1 June 2026
4059-5	Zelam Ltd	To discharge emissions into the air from industrial agrichemical formulation processes and associated processes.	June 2014	1 June 2026

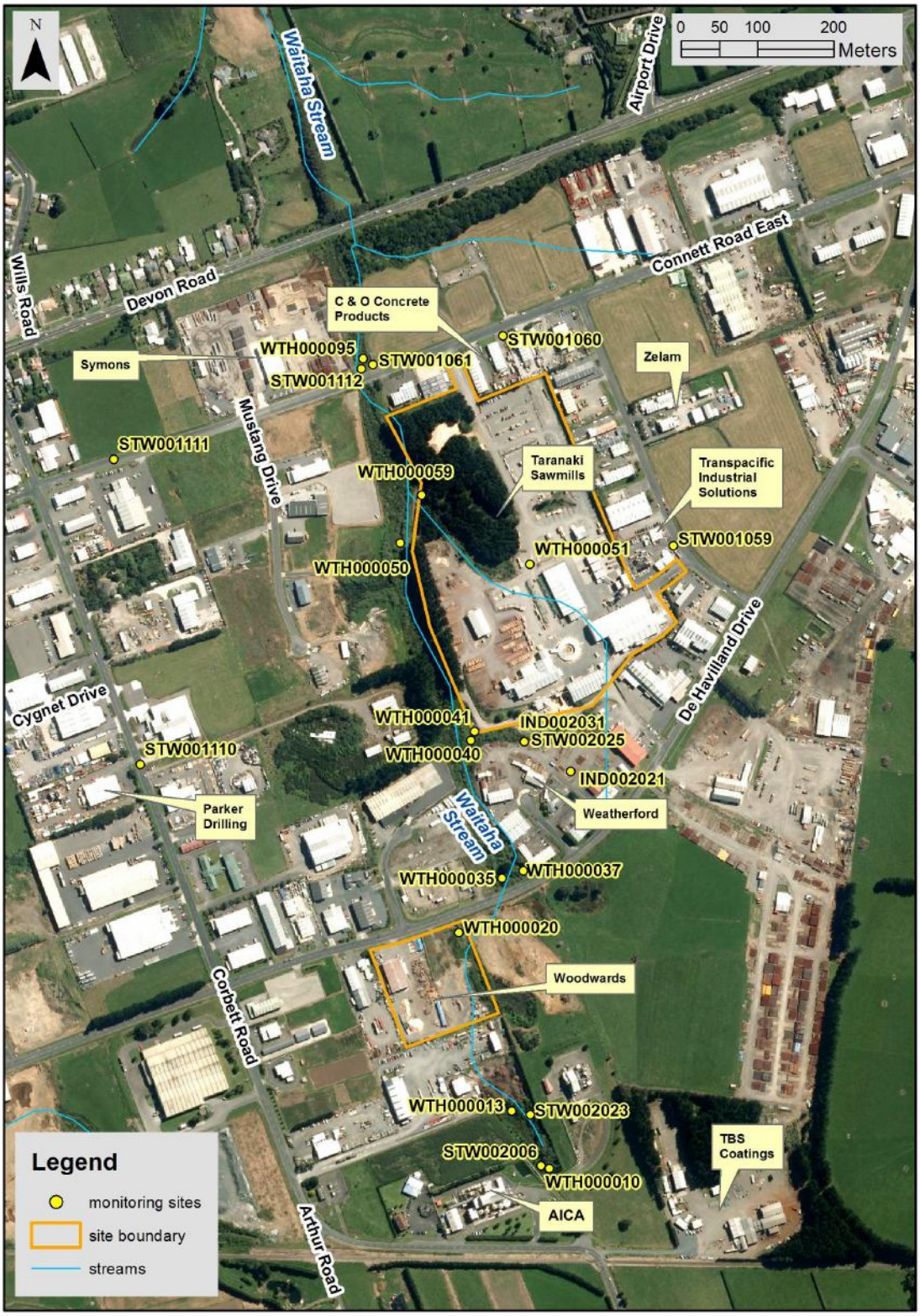

Figure 1 Location of consent holders and surface water monitoring sites

1.3 Monitoring programme

1.3.1 Introduction

Section 35 of the RMA sets out obligation/s upon the Taranaki Regional Council to gather information, monitor, and conduct research on the exercise of resource consents, and the effects arising, within the Taranaki region and report upon these.

The Taranaki Regional Council may therefore make and record measurements of physical and chemical parameters, take samples for analysis, carry out surveys and inspections, conduct investigations, and seek information from consent holders.

The monitoring programme for the industries in the Waitaha catchment consisted of six primary components.

1.3.2 Programme liaison and management

There is generally a significant investment of time and resources by the Taranaki Regional Council in on going liaison with resource consent holders over consent conditions and their interpretation and application, in discussion over monitoring requirements, preparation for any reviews, renewals, or new consents, advice on the Council's environmental management strategies and the content of regional plans, and consultation on associated matters.

1.3.3 Site inspections

The sites were visited up to five times during the monitoring period. With regard to consents for discharges to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

1.3.4 Chemical sampling

The Taranaki Regional Council undertook sampling of both the discharges from the sites and the water quality upstream and downstream of the discharge points and mixing zones.

During the year under review the Council undertook sampling of the discharges from Transpacific Industrial Solutions on two occasions, Weatherford New Zealand Ltd on four occasions, New Plymouth District Council on three occasions, C&O Concrete on two occasions, Parker Drilling International of New Zealand Limited on two occasions, Symons Property Developments Limited on one occasion, AICA NZ Ltd on two occasions, and Taranaki Sawmills Ltd on four occasions. The discharges were analysed for key chemical contaminants potentially generated at each site, including contaminants specified under the special conditions of each of the consents.

During 2012-2013, the Council undertook sampling of the Waitaha Stream and tributaries, after reasonable mixing, on two occasions at seven sites in combination with sampling of the individual consent holder discharges, and on two occasions at two sites in combination with the discharges from AICA (NZ) Limited.
Each sample was tested for parameters that best give an indication of the effects of the discharges and the overall quality of the stream.

The Council undertook sampling of both the emissions from processes at various sites and of the ambient air quality in the neighbourhood.

Odour surveys were carried out in the vicinity of the AICA (NZ) Ltd site on four occasions, and the air was sampled and analysed for formaldehyde and phenol at up to four monitoring locations in the vicinity of the sites on one occasion. Dynea also commissioned formaldehyde stack emission monitoring on three occasions, the results of which were forwarded to Council. Ambient carbon monoxide monitoring was undertaken at one location on the site boundary on one occasion.

Continuous PM_{10} monitoring was undertaken at Taranaki Sawmills Ltd on one occasion during the year under review. PM_{10} refers to the measurement of the levels of suspended particulate matter in the air of less than 10 micrometres effective diameter. Particles this small are of significance for human health.

The emissions to air from the sandblasting enclosures were sampled at the TBS Coatings Ltd site, and the ambient suspended particulate concentration of the air was measured using a hand held portable instrument called the Dust Trak. The Dust Trak's principle of operation is based on the refractive index of dust particles in the air and its proportionality to the concentration of particulate in air. The Dust Trak measures particulate matter (less than 10 micrometers in diameter) in milligrams per cubic metre of air (mg/m^3). Rule 19 of the Regional Air Quality Plan for Taranaki states that the discharge concentration of dust from abrasive blasters at the source should be less than 125 mg/m^3 (all diameters). This is also a consent condition for this Company.

Deposition gauges were placed at selected sites in the vicinity of the TBS Coatings Ltd site on one occasion during the year under review, and the collected samples were analysed for deposited particulates.

1.3.5 Biomonitoring surveys

Biological surveys are used to determine the impacts that discharges to a surface water course may cause over a period of time, as distinct from chemical surveys which give detailed information upon the constituents of a discharge at the time of sampling, but cannot give information upon previous discharge characteristics. Biological surveys also directly indicate any significant adverse effects of discharges upon in-stream flora and fauna, so that cause-effect relationships do not have to be established as for critical levels of individual chemical parameters.

Streambed macroinvertebrates and algae have been collected previously at up to five biomonitoring sites in the Waitaha Stream shown in Figure 2.

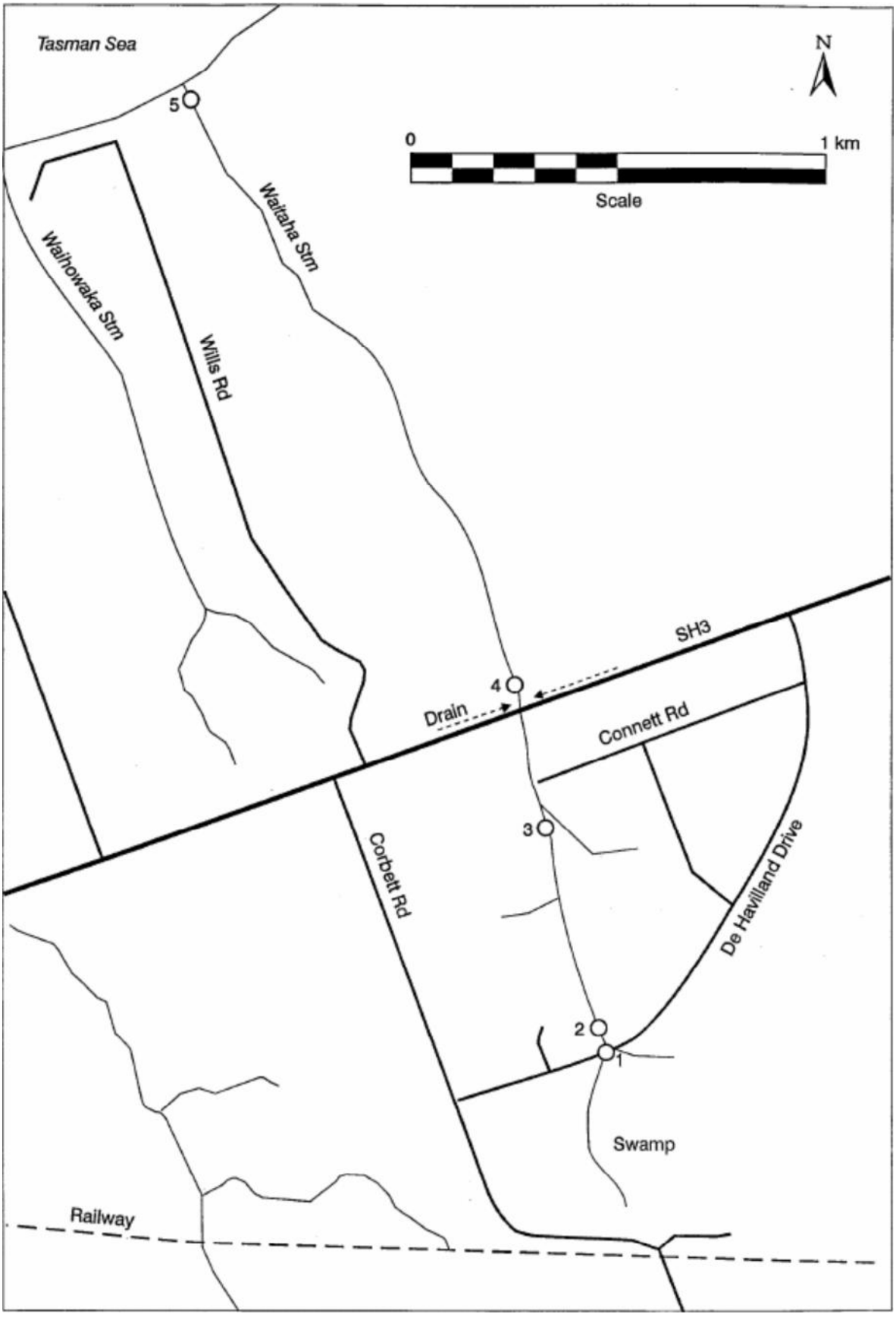

Figure 2 Biomonitoring sites in the Waitaha Stream

The monitoring undertaken in the 2009-2010 year concluded that, for the reasons given below, there was presently no benefit in monitoring the macroinvertebrate communities in the Waitaha Stream.

With regards to future macroinvertebrate monitoring of this catchment, it was recommended that no further biological monitoring be undertaken upstream of State Highway 3, at least until the iron oxide sediment in this reach has appreciably reduced. Directly downstream of State Highway 3, invertebrate habitat is not good due to a lack of substrate heterogeneity and aquatic vegetation. Unless this habitat changes, there is unlikely to be an improvement in invertebrate communities, and similarly, it is unlikely there will be a degradation in communities, unless water quality reduces significantly e.g. through a continuous toxic discharge. The site just upstream of the coast is well downstream of the industrial area, and unlikely to reflect any activities of the industrial area. Monitoring at this site will primarily reflect impacts of land use downstream of SH3, which is outside of the scope of the Waitaha Catchment monitoring programme. Therefore, invertebrate monitoring in the Waitaha Stream was not considered to provide useful monitoring data, and therefore it was recommended it be discontinued.

Based on this recommendation, and there being no significant improvements in the substrate of the stream, there was no biomonitoring scheduled for the 2011-2012 year.

It is noted that the 2009-2010 biomonitoring report also concluded that with regards to future management of this catchment, it was clear that the impacts of urbanisation were already present upstream of SH3. With continued development of that area, such impacts may worsen without careful stormwater management. If residential development was to occur downstream of SH3, this stream could potentially become a reserve, with important aesthetic values, such as that on the Mangati Stream. However, for this to be a viable possibility, the development of the catchment would need to be carefully managed, so as to avoid further reductions in water quality, biological habitat and low flows, primarily through improved stormwater management (including contamination of stormwater). It would also be important to recognise and protect the role spring fed tributaries play, with regards to water quality and flow rates.

1.3.6 Provision of company data

Self monitoring is undertaken by AICA (NZ) Ltd and Zelam Ltd, and there is also a periodic reporting requirement on the air discharge consent held by AICA (NZ) Ltd.

In the case of AICA (NZ) Ltd, condition 4 of their stormwater consent requires that the Company keeps records of the chemical monitoring of the stormwater basins and the frequency and volume of the discharges, and that they shall make these records available to Council on request.

Special condition 12[1] of AICA (NZ) Ltd's air discharge consent requires that a written report be provided to Council by 30 June 2001 and every 6 years thereafter.

[1] Special condition 12 of the varied consent issued 5 October 2009. This was special condition 10 of the original consent granted 12 June 1996.

The report is to cover technological advances and how they might be applied at the site, issues relevant to minimising or mitigating emissions, and detailing an inventory of discharges to air as Council may specify from time to time. The timeframe given in the consent required that the previous report was provided by June 2007, with the next report due by 30 June 2013.

Additional monitoring and reporting requirements were included in consent 4021 when it was varied on 5 October 2009. Special conditions 4 and 5 require that emissions monitoring is undertaken annually on the absorber tower discharge. This monitoring must be undertaken by an independent party. The conditions under which the testing must be performed, and the reporting requirements, are also specified. This emissions monitoring must be completed by 1 June each year, and the reports must be provided to Council within 20 working days of the testing.

Condition 7 of the air discharge consent held by Zelam Ltd requires that the scrubber liquor of the forced draft scrubbers is maintained at a pH of 9 or more, and special condition 9 requires that the scrubber liquor of the air displacement scrubber contains at least 0.5% of free amine. Special conditions 8 and 10 require that these parameters are monitored and recorded on a weekly basis (pH) or prior to each production run (free amine), and that the data is forwarded to Council, in the form of a written report, upon request.

2. AICA (NZ) Limited

2.1 Introduction

2.1.1 Process description

AICA (NZ) Limited (formerly Dynea NZ Limited) manufactures synthetic resins for the production of wood products at their plant situated above a wetland area at the headwaters of the Waitaha Stream.

Photo 1 AICA (NZ) Ltd site

There have been a number of changes at the site over the years in order to meet market demands. There are two processing areas on site, Plant 1 predominantly for formaldehyde based products, and Plant 2 which was primarily for phenol based products.

In 1999 a 2 tonne mixing vessel was installed at Plant 1 to take advantage of an increase in wood glue sales. This was piped up to the existing utilities and scrubbers.

2.1.1.1 Water

The site has an enclosed stormwater system that directs all road drains to the holding ponds, which are lined with butyl rubber. Areas likely to be contaminated, such as bunds around storage tanks and loading facilities, are directed to the New Plymouth District Council [NPDC] sewer system.

The car park, where the storage of chemicals is prohibited, drains directly to the receiving waters of the Waitaha Stream. Roof water from the phenolic resins plant (Plant 2) drains to the stormpond.

The access roads around the site should be uncontaminated by raw materials and product, although it is often noted that urea prills are observed on the roadways. The potential for this to enter the receiving waters is minimised by the requirement for truck drivers to air blow all urea residue from their trucks before leaving the urea store. A drain has also been installed in the roadway leading into the urea store so any residue spilled in this area are captured and pumped to the tradewaste system. The stormwater from roadways outside this drain flows into the stormpond. The stormponds also provide containment of spills.

Pond 1 is capable of containing 300m^3 of stormwater and Pond 2 can hold 100m^3.

AICA are currently storing some materials in the Plant 2 area, either inside the chemical storage shed, or outside the shed in an area that drains to Pond 2, whilst disposal options are evaluated.

Analysis of the stormwater is carried out by the Company prior to discharge occurring. Should the stormwater be outside the limits given in the consent, it is discharged to the NPDC sewer system as trade waste, or is re-circulated through the on-site system for further mixing, aeration and biological attenuation. At times, the stormwater is also used to dilute the trade wastes from the plant.

The results of the analyses are kept in the Company Operational Log, along with the operators' comments as to where the discharge is being pumped.

During the 2010-2011 year Council was advised that subject to production demands the Company was going to be closing the production site over weekends. During the 2011-2012 year the site was de-manned over the weekends. There were monitoring systems in place that allowed on-call staff to remotely supervise the New Plymouth site. The on-call operators would deal with any issues that arose. If the on call operator does not respond to this call, a series of management staff will be contacted until someone can be found. The move to this situation was staged. Initially the site was shut down, but the staff providing the weekend cover were present at the site to ensure a smooth transition to the remote monitoring system. And this style of operation has continued under AICA (NZ) Limited's ownership. Whilst the site is unmanned AICA do not run the Formaldehyde or Resin batch processes. All unnecessary utilities are also shutdown. The package boiler has been upgraded to allow it to run unattended, and this and other supporting ancillary equipment continue to run during the de-manning periods to keep critical equipment at the correct temperatures.

Council was informed that all bunds, wastewater and storm water ponds were to be pumped dry by Friday evening. All gates would be padlocked shut and the security system will be activated. High and "HiHi" level alarms are fitted in the storm pond sump, with the "HiHi" level being at the top of the pond liner. On the High alarm, an operator would come to site, test the water in the stormpond, and if found to be in specification, it would be pumped to the tributary. If out of specification it would be pumped to the tradewaste storage for further testing and possible discharge to the NPDC system.

The high level switch is set at approximately 250m^3; the "Hi-Hi" has been set at 300m^3. The Company estimated that the bunded area over and above the pond liner

will hold a further 600m^3 before it spilled over into the stream. This allows plenty of time for the site stormwater to be managed appropriately.

A new chemical storage shed was built on the Plant 1 site to store raw materials used in the production of wood specialized adhesives (WSA). A section of this shed has been bunded to allow for the storage of some finished products, generally intermediate bulk containers (IBCs) or drums.

The Company is required to maintain a contingency plan for the site, which identifies the measures to be undertaken to prevent spillages and avoid, remedy or mitigate the effects of accidental spillages. An update of this plan, including the necessary provisions to cover the weekend de-manning, was received in September 2011. The contingency plan, which considers both discharges to water and emissions to air, was reviewed in April 2013.

2.1.1.2 Air

Emissions to air of formaldehyde, phenol, resorcinol and resin are reduced by the use of water scrubbers in the formaldehyde absorber tower and on the vents from the resin plant and formalin, resin, phenol and resorcinol tanks. All phenol and resorcinol vapours that leave the process kettles are condensed under vacuum.

Formaldehyde Plant - Plant 1

Formaldehyde solution is produced at the plant by the catalytic oxidation and dehydrogenation of methanol in a continuous process. This is then used in the production of urea-formaldehyde and melamine-urea-formaldehyde resins.

The urea formaldehyde resin manufacturing plant was commissioned in April 1989. At that time, the facility was owned by A C Hatrick Ltd. Part of this plant was designed to produce formaldehyde solution by the catalytic oxidation and dehydrogenation of methanol, at a capacity of 60 tonnes per day. Air, methanol, and water are fed into a vaporizer and mixed so that gas leaving the unit has the approximate composition of methanol vapour in air. Vaporisation is controlled by a steam heating coil and heat from the absorber cooling system. The gases leaving the vaporizer pass through a demister before entering the reactor. The reactor has a silver catalyst operating at 610-690°C. The reaction is exothermic [heat releasing], and the heat is recovered in a boiler. The major products are formaldehyde, hydrogen, carbon dioxide, carbon monoxide, and condensation, and absorption takes place in a 4 section system. The three main absorption loops are circulated through heat exchangers with the bottom loop providing heat to the vaporizer. Formaldehyde solution at a concentration of 37-50% by weight is drawn off the bottom absorption loop and pumped to storage. Insoluble gases exit the absorber from a top vent at 10-15°C. These emissions consist roughly of 20% hydrogen, 70% nitrogen, 2-3% water, 4-6% carbon dioxide and around 1% carbon monoxide. There are also traces of formaldehyde, methanol, and various reaction by-products.

Much of the formaldehyde produced is reacted in a second part of the plant with urea to produce urea formaldehyde resin. This plant has a capacity of 80 tonnes per day when operating continuously. There are two steps in the reaction; an addition reaction between urea and formaldehyde and a condensation reaction with methylene and ether.

Ammonium sulphate is used as an initial catalyst, and vacuum distillation is used to increase the non-volatile components by removing water and methanol which are returned to the formaldehyde process.

The primary source of emissions to the atmosphere is therefore the vent on the formaldehyde absorption tower, 22 metres above ground level. There are exhaust gases [including water vapour] from a gas-fired boiler flue, and some steam from the plant's cooling tower, together with minor emissions from storage tanks and the laboratory fume cupboard.

Formaldehyde occurs naturally in meat and some kinds of fruit and vegetables, and is released in cigarette smoke, and from furnishing fabrics, glues, and wood grain panelling. Motor vehicles and domestic solid-fuel combustion are major sources of formaldehyde in the urban environment. Concentrations in most buildings using wood grain resin-bonded panels would typically average 0.10-1.00 mg/m^3. Formaldehyde has been found to cause cancer in some animal species when administered at extremely high doses. It has not been found to cause cancer in humans, and may or may not eventually be found to do so. The major route for exposure to formaldehyde in humans is inhalation. The main toxic effects for acute exposure are eye, nose and throat irritation and effects on the nasal cavity. Other effects include coughing, wheezing, chest pains and bronchitis. Chronic exposure has also been associated with respiratory symptoms and eye, nose and throat irritation. The limit of detection for formaldehyde odour is about 0.08 mg/m^3.

The World Health Organisation notes that there is variability in human formaldehyde responses, with significant increases in signs of irritation occurring at levels above 0.1 mg/m^3 and a progression of symptoms occurring above 1.2 mg/m^3. No lung function alterations were noted in healthy non-smokers and asthmatics exposed to formaldehyde levels up to 3.7 mg/m^3.

In the national Ambient Air Quality Guidelines [Ministry for the Environment, 2002] a formaldehyde limit of 100 $\mu g/m^3$ [0.1 mg/m^3] was given. It should be noted that the primary consideration by the Ministry for the Environment in setting this guideline, has been to ensure that ambient [outdoor] air can be used to dilute indoor concentrations of formaldehyde. This limit protects against tissue irritation of the eyes, nose and throat.

The World Health Organisation [2005] also proposed a limit of 0.1 mg/m^3 as adequate to protect against sensory, toxic and carcinogenic risk.

In the Good Practice Guide for Air Quality Monitoring and Data Management 2009, the Ministry for the Environment states that:

- ambient air quality guidelines are concentration limits recommended to protect human health and the environment under the RMA,
- they may be incorporated into regional plans as objectives or targets, and
- that the Guidelines should be followed as closely as possible for the sake of good practice and national consistency.

Melamine expansion

In late 1991 the Company expanded its activities, by adding a melamine-formaldehyde resin manufacturing process capable of producing 40 tonnes per day. The changes included the introduction of melamine on to the site. Additional storage tanks for formaldehyde were manifolded to the existing tank scrubber system, and a dust control system installed on the melamine powder handling facilities. The new reaction vessel was also vented to the existing tank scrubber system.

Phenol Plant – Plant 2

The phenol plant [Plant 2], for which consent 4421 was granted by the Council in December 1993, was constructed during 1994. The first reactor kettle was commissioned in April 1995. A second kettle was installed during the latter part of the 1994-1995 monitoring year, and was subsequently commissioned in mid-August 1995.

The two kettles were multi-purpose facilities, enabling the manufacture of the same formaldehyde and melamine resins described above. In addition, they allowed the preparation of phenol-based and resorcinol-based resins. The plant could be operated in a manner that was fully independent of the primary plant. Emissions from the site were condensed for recovery, and residual emissions were scrubbed by water solution, which was subsequently recycled as process make-up water.

In 1998 a 2 tonne capacity trial reactor was added to allow the production of trial white and red formaldehyde based resins. This reactor was piped up to the existing utilities and scrubber. This facility has now been relocated to Plant 1.

In early 2009, due to the economic downturn it was decided that Plant 2 would be decommissioned.

Phenol manufacturing has been transferred to the AICA site in Nelson and the 2 tonne trial reactor was relocated into a new building at Plant 1. This is used to trial resin batches prior to them going in to full production. A second 6 tonne mixing vessel has also been installed that is used to produce wood specialised adhesives (WSA) and hardeners. This vessel has a dust collector installed to reduce emissions to the atmosphere.

A new scrubber has also been installed in the resin plant to take advantage of new technology and further reduce emissions.

2.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations. The stormwater discharge from the site has been consented since 11 November 1987.

AICA (NZ) Limited currently holds water discharge permit 2367-2 to cover the discharge of up to 150 litres/second of stormwater from a chemical manufacturing complex into a swamp at the headwaters of an unnamed tributary of the Waitaha Stream. This permit was issued to Dynochem (NZ) Limited by the Taranaki Regional Council on 20 March 1996 under Section 87(e) of the RMA.

The consent was transferred to Dynea NZ Limited on 21 June 2001, and to AICA (NZ) Limited on 2 April 2013. A variation to the conditions allowing an increased concentration of ammonia and formaldehyde in the discharge was granted on 7 May 2002. It is due to expire on 1 June 2014.

Special conditions 1 and 2 limit the contaminant concentrations in the discharge and the effects that the discharge may have on the receiving waters of the Waitaha Stream.

Special condition 3 requires the Company to maintain a contingency plan.

Special condition 4 specifies the records that must be kept in relation to the stormwater discharges from the site.

Special condition 5 prohibits the storage of chemicals in the car park and special condition 6 sets out provisions for review of the conditions of the consent.

A copy of the permit is attached to this report in Appendix I.

2.1.3 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

AICA (NZ) Limited operates a formaldehyde manufacture and resin production plant in Bell Block and holds air discharge permit **4021-2** to cover the discharge emissions into the air from the manufacture of formaldehyde solution and urea formaldehyde resin, together with emissions from associated activities at the plant premises. The consent was formerly held by Dynochem NZ Limited, and then Dynea NZ Limited.

In 1993 the production capability was increased by building a multi-purpose plant at the site to manufacture urea, melamine, phenol and resorcinol resins. The new plant (Plant 2) used a batch process, producing whichever type of resin was required at the time, with discharges to air from this new site covered by consent 4421.

The existing plant (Plant 1) already manufactured all of these except for phenol and resorcinol resins, under air discharge permit 4021, which was formerly a clean air licence HD/10/0034/91. This permit expired on 1 April 1996, and Dynochem applied to renew consent 4021 as a generic air discharge permit for the whole site. Consent **4021-2** was issued to Dynochem (NZ) Limited by the Taranaki Regional Council on 12 June 1996 under Section 87(e) of the RMA. It was transferred to Dynea NZ Limited on 21 June 2001, and was varied to increase the permitted formaldehyde emission rates and ambient formaldehyde concentration beyond the site boundary on 6 October 2009. The consent was transferred to AICA (NZ) Limited on 2 April 2013. It is due to expire on 1 June 2014.

Consent 4421 became superfluous and was surrendered.

At the time of the variation, no changes to plant processes were proposed. The changes reflected changes in analytical methodology in relation to the formaldehyde emissions

monitoring, together with measurements of ambient formaldehyde which showed that vehicular traffic in the vicinity of the site impacted on the ambient formaldehyde concentration to a greater degree than emissions from the plant. The new ambient concentration limit requested by the Company was the concentration given as the minimum requirement of the health-based Ambient Air Quality Guidelines [Ministry for the Environment, 2002].

A summary of the conditions of consent 4021-2 are given below.

Special condition 1 limits the total emission rate of formaldehyde from all processes and special condition 2 limits the discharge rate of formaldehyde from main stack and scrubber tower vent of Plant 2.

Special condition 3, requires satisfactory monitoring of the exercise of the consent and its effects.

New special conditions 5 and 6 were inserted that require formaldehyde emissions monitoring to be conducted by an independent party on an annual basis to confirm that the Company is complying with special condition 2. These conditions also specify the standard to which the testing must be performed, the reporting requirements, and the timing of the testing and reporting.

Special condition 6 (formerly condition 4) requires that processes are operated and managed to minimise emissions.

Special conditions 7, 8 and 9 (formerly conditions 5, 6, and 7) limit the permitted ambient ground level concentration of formaldehyde, phenol, and resorcinol respectively. The formaldehyde limit was increased as part of the consent variation.

Special conditions 10 to 14 were unchanged.

Special conditions 10 and 14 (formerly conditions 8 and 12) contain provisions for reviewing the conditions of the consent.

Special condition 11 (formerly condition 9) requires consultation with the Council prior to significant changes at the plant that may affect the quantity or nature of the discharge.

Special condition 12 (formerly condition 10) requires the Company to provide a report to Council every 6 years detailing the discharges to air from the site and reviewing technological advances or other issues relevant to the minimisation or mitigation of discharges from the site.

Special condition 13 (previously condition 11) defines, and requires the Company to adopt, the best practicable option to prevent or minimise adverse effects.

A copy of the permit is attached to this report in Appendix I.

2.2 Results

2.2.1 Water

2.2.1.1 Inspections

11 July 2012

Load-out operations were occurring during the inspection, and it was reported that the transfer of material appeared to be well managed. All sealed surfaces were considered to be clean, although minor tyre tracking was evident out of the urea store. The receiving ponds were inspected and both were found to be free of hydrocarbon sheen. The contents of the pond appeared to be clear. All bunds throughout the site were empty, and all tanks had clear signage. The receiving wetland was inspected and appeared healthy, as did all surrounding vegetation. Plant 2 was inspected and found to have no materials stored outside of the bunded areas. It was outlined that all power had been cut to the site except for the bund pumps. Some tanks had been sold and were awaiting removal. The area between Plants 1 and 2 was clear of stored materials, and the stormwater catchment was considered clean.

25 September 2012

It was found that the level of both ponds were low. Neither pond was discharging at the time of this inspection. The site area was generally clear and the stormwater catchment free of potential contaminants, although some minor tracking was again noted from the urea storage area. It was reported however that the tracking was not leaving the site.

3 October 2012

Email notification received advising Council that the Company would be instigating a new shift roster that would leave the site unmanned from 6:30pm until 6:30am, starting on 5 November 2012.

11 January 2013

It was found that the site was tidy and free from potential contaminants and spills. The stormwater catchment points and drains appeared clean and clear. Neither pond was discharging, and it was reported that samples could not be taken from the recirculation taps.

6 March 2013

Email notification was received advising Council that the Company are considering leasing the piece of land between Plant 1 and 2 (the laydown area). The email stated that the Company that were looking occupy it were planning to store machinery, equipment and possibly tanks. AICA have been assured that there would be no chemicals, oils etc stored there.

11 April 2013

A hydrological inspection was undertaken. Although there had been 83mm of rainfall during the preceding month in the neighbouring Mangati catchment, the hydrological monitoring site in the Mangati Stream showed that the small streams in this area were still under low flow conditions.

The flow in the Waitaha Stream was found to be too low to undertake a gauging, with the flow estimated to be only approximately 200 ml/second at the inlet to the culvert downstream of the AICA wetland. It was noted that the flow was discoloured.

28 May 2013
The inspection was carried out following significant rainfall over the preceding week. It was noted that all stormwater was directed through the stormwater treatment systems and no visible contaminants were evident. The site was found to be neat and tidy.

26 June 2013
The site was found to be neat and tidy. It was reported that some pipework was to be replaced in the stormwater system. The trade waste disposal area was inspected and found to be fit for purpose.

2.2.1.2 Results of discharge monitoring

AICA's stormponds were sampled on only two occasions during the year under review, due to communication issues around when the ponds were full enough to be sampled. The results are presented in Table 2. The discharge sampling was carried out in conjunction with receiving water monitoring on both 16 July 2012 and 15 August 2012 (see section 2.2.1.3). The AICA stormpond monitoring data provided to Council did not identify their results for the inter laboratory comparison exercise on 15 August 2012, and therefore the AICA results reported below are those closest in time to the sampling undertaken by Council.

Table 2 Results of discharge monitoring at AICA (NZ) Ltd (inter laboratory comparisons)

Site		Lab	Conductivity (mS/m @ 20°C)	Formaldehyde (g/m^3)	Ammoniacal nitrogen (g/m^3-N)	Oil & grease (g/m^3)	pH	Phenol (g/m^3)	Suspended solids (g/m^3)	Temp (°C)	Urea (g/m^3 N)	Sample origin
Consent limit *(for discharge to tributary)*			-	***2***	***20***	***15***	***6-9***	***1***	***100***	-	-	
Pond 1 STW002006	16-Jul-2012	TRC 11:20	4.8	0.25	1.46	b	7.3	<0.02	5	13.7	4.49	Discharge
		AICA 11:20	4.2	0.6	2.81	-	7.8	0	-	-	-	Inter laboratory test
		AICA 09:03	22.5	0.8	2.62	-	8.0	0	-	-	-	Prior to discharge
	15-Aug-2012	TRC 13.45	17.2	<0.1	6.30	b	8.5	<0.02	6	13.1	6.14	Discharge
		AICA* 09:30	15.2	0.5	5.4	-	8.7	0	-	-	-	Prior to discharge
	25-Sep-2012[a]	TRC	-	-	-	-	-	-	-	-	-	Pond level too low to sample
		AICA	-	-	-	-	-	-	-	-	-	
	11-Jan-2013[a]	TRC	-	-	-	-	-	-	-	-	-	Unable to obtain sample from recirculation system
		AICA	-	-	-	-	-	-	-	-	-	

Site		Lab	Conductivity (mS/m @ 20°C)	Formaldehyde (g/m³)	Ammoniacal nitrogen (g/m³-N)	Oil & grease (g/m³)	pH	Phenol (g/m³)	Suspended solids (g/m³)	Temp (°C)	Urea (g/m³N)	Sample origin
Pond 2 STW002023	16-Jul-2012	TRC 11:10	3.1	<0.1	0.180	b	6.6	<0.02	<2	13.9	0.72	Discharge
		AICA	3.0	0	0.21	-	7.7	0	-	-	-	Inter laboratory test
	15-Aug-2012[a]	TRC	-	-	-	-	-	-	-	-	-	Pond level too low to sample
		AICA	-	-	-	-	-	-	-	-	-	
	25-Sep-2012[a]	TRC	-	-	-	-	-	-	-	-	-	Pond level too low to sample
		AICA	-	-	-	-	-	-	-	-	-	
	11-Jan-2013[a]	TRC	-	-	-	-	-	-	-	-	-	Unable to obtain sample from recirculation system
		AICA	-	-	-	-	-	-	-	-	-	

KEY: Bold results do not comply with consent conditions and should not be discharged to tributary
a pond too low to sample
b parameter not determined, no visible hydrocarbon sheen and no odour
* Inter laboratory sample results were not reported. The results given above are for the closest available stormwater samples taken by AICA staff.

In the past there have been discrepancies in results between the Council and Dynea (the former consent holder) particularly for ammonia, formaldehyde and phenol. These are largely due to differences in analytical methods and have been discussed in previous annual reports. Historically Dynea had shown a tendency to over estimate the concentrations of ammonia and formaldehyde in comparison to the Council results. During the 2008-2012 years there were a limited number of true Interlaboratory results available due to on-going communication issues around when there is sufficient stormwater in the ponds for sampling to be undertaken. The results available have indicated that the Company may have been underestimating the formaldehyde and ammoniacal nitrogen concentrations in recent years.

Council's concern regarding the underestimation of contaminant concentrations and reduced number of true inter laboratory samples has been highlighted in previous reports, as there have been a number of occasions when the stormwater from the stormponds has been discharged to the Waitaha Stream when the concentration of one of these contaminants was at or close to the upper limit permitted by the consent.

During the year under review, the very limited number of inter laboratory sample results generally showed reasonable agreement, but indicate that there may once again be a very slight overestimation of ammoniacal nitrogen concentration by AICA (NZ) Limited.

The discharge monitoring found no unauthorised discharges during the 2012-2013 year.

2.2.1.3 Results of receiving environment monitoring

The programme allowed for monitoring of the Waitaha Stream to be undertaken on two occasions in conjunction with discharge sampling. The programme provided for sampling of the Waitaha Stream at the headwaters (WTH000010), approximately 10 metres upstream of the discharge from Pond 1, and below the mixing zone (WTH000013), approximately 25 metres downstream of the discharge from Pond 2. During the survey undertaken on 16 July 2012 stormwater discharge was occurring from both pond 1 and pond 2, and during the survey on 15 August 2012 only pond 1 was discharging.

The results of this sampling are reported in Table 3.

Table 3 Waitaha Stream sampling in relation to AICA's stormwater discharges

Parameter	unit	WTH000010 Headwaters approx 10 m U/S	WTH000013 approx 25 m D/S
17 July 2012	**Sample time**	**1130**	**1142**
Conductivity	mS/m @ 20°C	3.2	9.3
Formaldehyde	g/m³	<0.1	<0.1
Unionised ammonia	g/m³-N	0.00005	0.00018
Ammoniacal nitrogen	g/m³-N	0.014	0.230
Oil & grease	g/m³	b	b
pH		7.1	6.4
Phenol	g/m³	<0.02	<0.02
Temp	°C	14.6	14.7
Turbidity	NTU	6.6	21
Urea	g/m³N	0.05	0.56
15 August 2012	**Sample time**	**1415**	**1400**
Conductivity	mS/m @ 20°C	5.0	12.3
Formaldehyde	g/m³	<0.1	<0.1
Unionised ammonia	g/m³-N	0.00005	0.00239
Ammoniacal nitrogen	g/m³-N	0.010	1.59
Oil & grease	g/m³	b	b
pH		7.3	6.7
Phenol	g/m³	<0.02	<0.02
Temp	°C	11.9	13.7
Turbidity	NTU	9.5	-
Urea	g/m³N	0.26	1.12

KEY: b parameter not determined, no visible hydrocarbon sheen and no odour

During the 2012-2013 year there were no significant adverse effects observed in the Waitaha Stream downstream of the AICA discharges at the time of sampling. There were noticeable increases in the ammoniacal nitrogen, unionised ammonia and urea concentration downstream of the discharge on 15 August 2012. The downstream unionised ammonia concentration, although high, was still less than one tenth of the 0.025 g/m^3 considered to be toxic in the aquatic environment.

It is noted that on both monitoring occasions the pH of the stream changed by more than the 0.5 pH unit considered to present a barrier to fish passage, however the sampling showed that this change was not as a result of the discharges from the AICA stormwater pond(s).

2.2.1.4 Provision of company data

The data provided by AICA in relation to their stormwater discharges complied with the majority of the requirements of condition 4 of consent 2367. The volumes recorded are estimates based on the water level in the pond, noting that there is no level gauging device in either of the ponds. Although this has been accepted as satisfactory by Council in the past, it was highlighted in the 2011-2012 Annual Report that Council was reviewing this position. This is due to the concerns that have come to light over the appropriateness of the ammoniacal nitrogen limit, bearing in mind that the Company had been applying this limit to discharges made during dry weather, rather than only in wet weather conditions, as was indicated during the processing of the variation to the consent in 2002.

Special condition 2 of the Company's consent prohibits significant adverse effects on aquatic life, habitats or ecology beyond a 10 metre mixing zone. Therefore in the 2010-2011 year it was recommended that the consent holder considers adopting the following approach, with a view to avoiding discharges that may result in a breach of special condition 2:

- Monitoring the temperature of the stormwater to be discharged, so that the unionised ammonia concentration can be determined.
- Avoiding the discharge of stormwater containing more than 0.025 g/m^3 of unionised ammonia when it is not going to be raining for the duration of the discharge.
- At all other times, giving consideration to the flow of the stream in relation to the discharge rates, and pH and concentration of unionised ammonia in the stormwater, rather than focussing solely on whether each individual parameter is within the permitted range.
- Working out where any contamination in pond 2 is coming from so it can be eliminated (as this plant is not operational), thereby increasing the dilution capacity.

A review of the 2011-2012 data showed that all stormwater discharges recorded during the year under review complied with the component concentration limits in the Company's consent. A summary of the data is presented in Table 4.

Table 4 Summary of AICA stormpond monitoring relating to pond discharges to the Waitaha Stream, 2012-2013

	Pond 1					Pond 2				
	pH	Condy µS/m @ 25°C	NH4 g/m³-N	Form g/m³	Phenol g/m³	pH	Condy µS/m @ 25°C	NH4 g/m³	Form g/m³	Phenol g/m³
Minimum	6.2	17.6	0.41	0	0	6.2	13.8	0	0	0
Maximum	8.9	480	11.6	2	1	9.0	486	7.4	2	0
Median	8.0	67.5	3.73	0.5	0	7.6	44.3	0.38	0	0
Number of discharges	22	22	22	22	22	26	26	26	26	26

There were occasions on which stormwater was discharged containing contaminants at, or very close to, the limit of the consent i.e formaldehyde (4 occasions), phenol (1 occasion), and pH (6 occasions), which is why there are concerns regarding the limited inter laboratory data to support AICA's in-house testing.

Although no temperature data was available, an estimated range for the corresponding unionised ammonia concentrations was calculated based on the pH and ammoniacal nitrogen concentrations provided by the consent holder, for temperatures of 10°C and 20°C.

Unionised ammonia concentrations over 0.025 g/m³ may result in toxic effects. The concentration range above which acute toxic effects may be seen for New Zealand native fish, e.g. fish kill, is 0.75 to 2.35 g/m³. During the 2012-2013 year, about 47 % of the discharges would have contained unionised ammonia concentrations of greater than 0.025 g/m³, but only 2 discharges contained a concentration of unionised ammonia above 0.75 g/m³. It is interesting to note that these were both from the Plant 2 stormpond, which is the plant that has been decommissioned.

These unionised ammonia concentrations in the discharge may not result in adverse environmental effects in the receiving water when suitable dilution capacity is available (as referenced in the officers report for the application to vary the consent to increase the contaminant concentration limits in 2002). During the year under review, all of the discharges with elevated unionised ammonia concentration occurred on days when there was rainfall recorded at the New Plymouth Waste Water Treatment Plant.

2.2.2 Air

2.2.2.1 Inspections

11 July 2012

This site inspection was undertaken in a gentle to moderate southerly wind: The plant was in operation and stack testing was being carried out. No odours were noted on site and no air related issues were reported.

A stack test inspection was also undertaken to observe the formaldehyde emissions monitoring was being undertaken by an independent contractor as required by special condition 4 of the AICA's consent. This stack test was slightly over due in that it should have been performed by 1 June 2012 to comply with consent.

It was found that the emissions monitoring Company were unaware of the previous issues that previous contractors had experienced in trying to get reliable result for the formaldehyde emission rate from this plant (as outlined in section 2.2.2.3), and therefore indicated that they had come a little unprepared. The contractor indicated that this test may not yield a reliable result due to lack of heated probe, reduction in number of impingers used in the sample train when compared to the number specified in USEPA Method 0011 (the test method prescribed in the Company's consent), and carry over of DNPH precipitate to the "empty" impinger, which had been left in place for all three runs. The inspecting officer was advised that it may be possible to work out a potential maximum value, which, if much less than 1.0 kg/hr, would at least allow consent compliance to be confirmed.

The timing of the next test was discussed with AICA, and it was agreed that the next test would be conducted within the next 4-6 weeks, if this stack test could not confirm consent compliance, or in 4-6 months to bring stack testing back on schedule and get an accurate result, if this initial test was able to confirm consent compliance.

25 September 2012
No visible emissions were observed from the plant at the time of inspection.

7 November 2012
An inspection was carried out whilst stack testing was being undertaken by an independent contractor as required by special condition 4 of the Company's consent.

The gas flow measurement was carried out at the start of testing using a pitot tube, and the three formaldehyde sampling runs were observed. It was noted that a new sampling port had been installed on the stack allowing for safer sampling and better anchoring of the sampling probe at each point during testing.

The flow was measured at 8 locations across the stack, and the position of the maximum flow rate was determined. The actual formaldehyde sampling was carried out at four locations across the stack as the outside two points at each end of the traverse were too close to the stack wall. The inspecting officer was informed that the software would be able to use the flow information obtained to compensate for this, and calculate the formaldehyde mass emission rate based on the measured flows.

The sampling train used for all three of the formaldehyde sampling runs consisted of a heated glass probe, four impingers each containing 200ml of DNPH, one empty impinger, followed by one impinger containing 100 ml of DNPH, and the impinger containing silica gel.

In run 1 a total of 189 litres of stack gas was sampled. During the traverse sampling took place at positions 3, 4, 5 and 6 for 2.5 minutes each, with an additional 2.5 minutes at position 6. The total sampling time was 12.5 minutes.

The Teflon tubing was disconnected from the first impinger at the end of sampling and the inlet to the impinger was sealed with wrap. The sample train was split in several places to allow for portions of the sample train to be tested separately for the formaldehyde content. No extraction of the sampling solutions was undertaken at AICA, this was to be carried out at the laboratory.

The impingers were replaced with a new set. Run 2 was carried out using the same traverse points, sampling for 3 min 45 sec at each. The sampling rate was 13.6 L/min and a total of 204 litres of gas was sampled. Run 3 was carried out as per run 2. The extension lead was switched off (presumably by an operator) in the plant for approximately 15 seconds at traverse point 4, and this was compensated for. A total of 221 litres of stack gas was sampled.

It was noted that the heated glass probe was left in the stack sampling port during sample train change overs. A small amount of DNPH precipitate was observed in the glass joint that connected to the first impinger after completion of run 2.

The stack flow rates were to be checked at completion of the formaldehyde sampling, but this was to take place after the inspecting officer had concluded the inspection. Photographs were taken of various parts of the sampling train.

11 November 2012
No objectionable odour was detected at the perimeter of the site. No visible emissions were observed.

11 January 2013
No visible emissions were observed from the plant and it was reported that there were no objectionable odours found in the vicinity of the stormwater ponds.

28 May 2013
It was reported that no odours or other emissions were noted at the time of inspection.

26 June 2013
There were no objectionable odours or visible emissions noted at the time of inspection.

2.2.2.2 Results of receiving environment monitoring

Odour surveys
Odour surveys were undertaken in conjunction with site inspections on 11 July 2012, 25 September 2012, 11 January 2013, 28 May 2013 and 26 June 2013.

There were no odours detected from the plant on any of these monitoring occasions.

Gastech monitoring
Ambient Gastech monitoring for phenol and formaldehyde was carried out in conjunction with the odour survey and site inspection on 11 July 2012. The sampling was conducted at four downwind sites. There were no detectable levels of either parameter found. As the phenol monitoring would also detect the presence of resorcinol, it can be inferred that the resorcinol concentration was also negligible during these surveys.

Carbon Monoxide monitoring
Ambient carbon monoxide (CO) monitoring was undertaken using a portable data logging 'QRae' analyser. Deployment lasted approximately fifty hours (site from 12 June 2013 at 11:17 to 14 June 2013 at 14:34) with the instrument placed in a down-wind position at the start of the deployment.

The 'QRae' monitor was logging an instantaneous measurement every second, which was then converted to one minute averages over the duration of the sampling period.

The consent 4021-2 covering air discharges from AICA NZ Limited does not have specific limits related to CO concentration. However, a recommendation has been made to insert a condition on ambient CO concentration into the current consent as part of the renewal process in 2014. This special condition will be based on the National Environmental Standard (NES). The NES for CO is 10mg/m^3, expressed as a running 8-hour mean. The Ministry for the Environment's air quality guidelines for carbon monoxide (which are based on health protection) also recommend 30mg/m^3, averaged over a 1 hour exposure.

The location of the multi-gas meter for the sampling run and summarised results are shown in Figure 3, with the full results depicted graphically in (Figure 4).

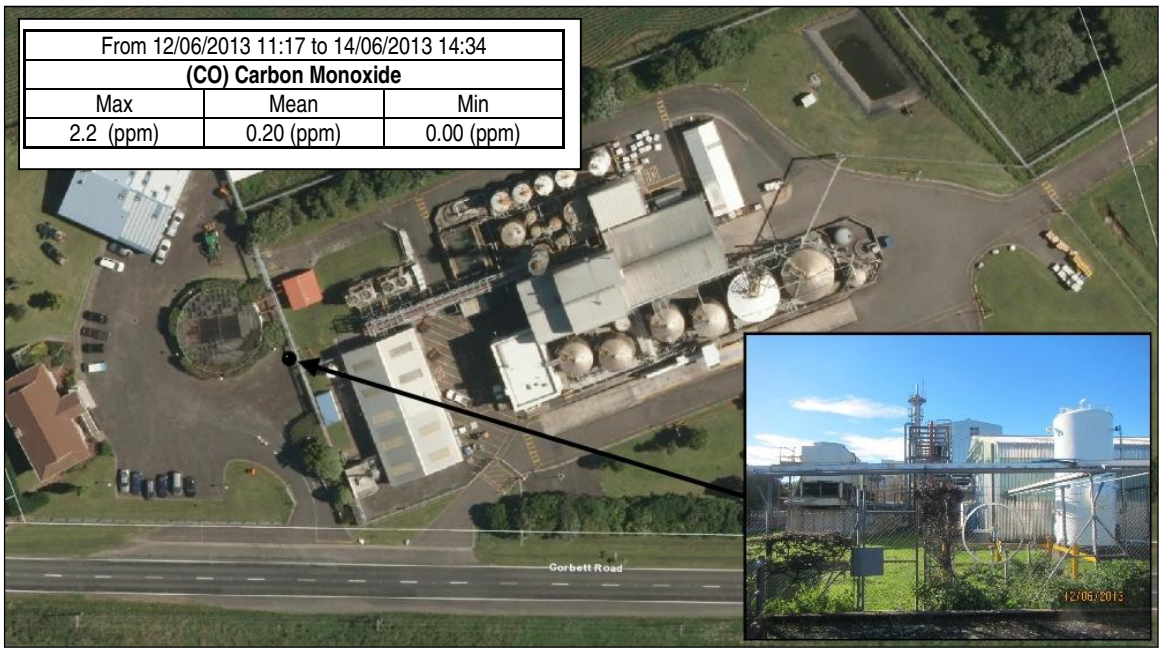

Figure 3 Carbon monoxide air monitoring site - AICA NZ Limited, June 2013

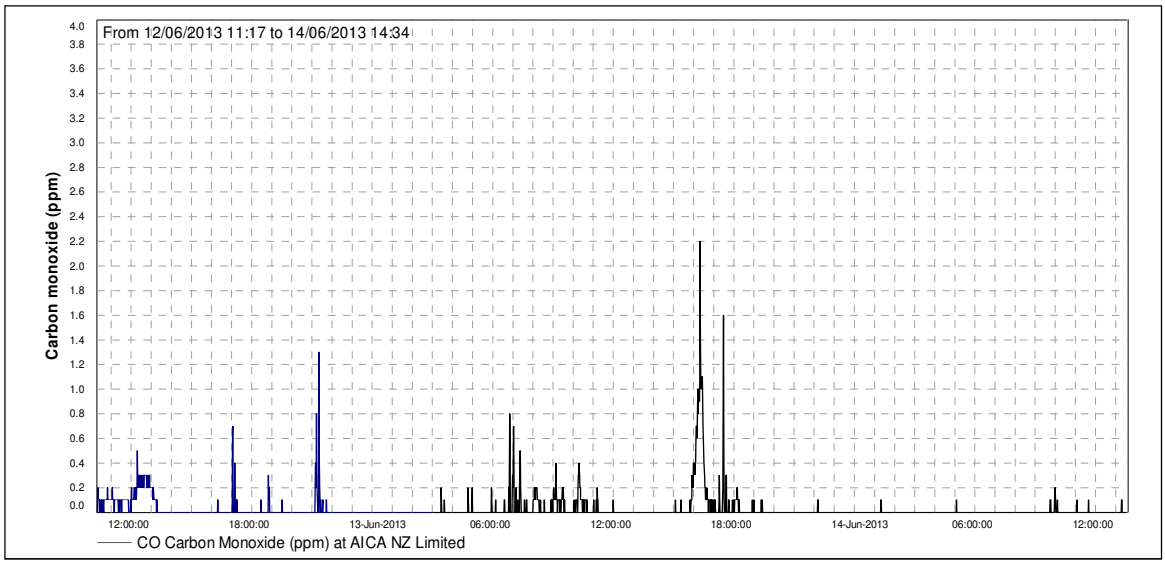

Figure 4 Graph of ambient carbon monoxide levels in the vicinity of the AICA NZ Limited

The maximum concentration of carbon monoxide found during the monitoring run (concentration averaged over one minute) was 2.0 mg/m^3 and the average concentration was only 0.2 mg/m^3.

For comparison, it can be noted the Council has previously undertaken carbon monoxide monitoring surveys at a number of locations around Taranaki. These results were as follows: New Plymouth (city) 1.6 mg/m^3 (range 0.1 - 9.2 mg/m^3); and Stratford (urban) <1.0 mg/m^3 (range <1.0 - 3 mg/m^3).

Thus, the carbon monoxide concentrations in the vicinity of AICA resin production plant are similar to those found elsewhere in the region and are, for the most part, less than one-fifth of the NES (10 mg/m^3).

The MfE gives a rating to air quality, based on the level of any parameter when compared with a guideline or standard. On this basis, air downwind of the plant would be rated as 'good' (10%-33% of NES) or better, in respect of carbon monoxide.

From these results it is concluded that the emissions from AICA NZ Limited plant had a negligible, if any, effect upon carbon monoxide concentrations in the vicinity of the plant.

2.2.2.3 Provision of company data

Emissions testing

Special conditions 1, 2, 4 and 5 relate to the standard to which formaldehyde emissions from the plant site must be treated, and outline the frequency and conditions under which formaldehyde emissions testing must be performed to confirm compliance. The timing of the testing, and reporting of the results to Council are also specified.

Testing must be undertaken by a party independent from the Company and as specified in USEPA[2] Method 0011, which is an isokinetic method ensuring a fully representative sample is collected. Acidified dinitrophenyl hydrazine (DNPH) is used to trap the formaldehyde present in the sample. This testing must be undertaken before 1 June each year, comprise not less than three samples taken under production conditions that give rise to maximum emissions, and the results (including all raw data) are to be reported to Council within 20 working days of the testing.

It is noted that the former owners (Dynea) had previously been experiencing difficulties in obtaining reliable results from the organisations contracted to undertake this monitoring. A summary of the issues identified by Council during review of the formaldehyde emissions monitoring are summarised in Table 5.

[2] United States Environmental Protection Agency

Table 5 Summary of stack test issues identified

Test date	Testing Company	Formaldehyde mass emission rate (Kg/hr)	Issue
July 2006	Watercare Services Limited	>0.33	DNPH saturated
October 2006	Watercare Services Limited	0.54	Sampling only done at one point in the tower, rather than traversing the stack. The position in the stack was not identified in the report
June 2009	K2 Environmental Ltd	0.84	Laboratory results for the amount of formaldehyde recovered in each of the sampling runs was very similar despite the significant difference in volume of stack gas sampled Run 1 – 0.15 m^3 gas sampled, 53.56 mg formaldehyde Run 2 – 0.12 m^3 gas sampled, 52.76 mg formaldehyde Run 3 – 0.12 m^3 gas sampled, 53.25 mg formaldehyde Council was not provided with the raw data from the laboratory undertaking the formaldehyde analysis, so had no information from them indicating whether or not the DNPH was saturated. However, the fact the 20% reduction in stack gas sampling volume did not result in a 20% reduction in formaldehyde indicates that the DNPH was likely to have been saturated.
April 2010	K2 Environmental Ltd	0.54	It was a stated observation in the stack test report from the staff carrying out the monitoring, that the DNPH looked to have been saturated. Quality Assure lab results also reported that "the high level of formaldehyde present in these samples was observed to have saturated the DNPH component of the reagent."
September 2010	K2 Environmental Ltd	0.60	Significant difference between run 1 and run 2 results Run 1 - 0.8 kg/hr, 38.17 mg of formaldehyde extracted from 0.096 m^3 stack gas, Run 2 - 0.4 kg/hr, 19.15 mg of formaldehyde extracted from 0.098 m^3 stack gas). Also the condensate in the empty impingers was not tested by a laboratory accredited to do this test.
June 2011	K2 Environmental Ltd	0.66	Council was not provided with a copy of the results of the formaldehyde testing by the accredited laboratory subcontracted to do this work, and so a full review of the stack test report could not be carried out

During the year under review formaldehyde emissions monitoring was undertaken on three occasions, the first two tests were commissioned by Dynea, and the third test was commissioned by AICA (NZ) Limited.

The emissions monitoring that had been due by 1 June 2012 was delayed due to the Company changing their independent contractor. This monitoring was carried out on 11 July 2012. The original report was provided to Council on 3 August 2012, with an amended report provided on 20 August 2012.

The formaldehyde results obtained are presented in (Table 6), however due to deviations from USEPA method 11 and the use of only two DNPH impingers, the report concluded that:

"The fact that the report from AsureQuality showed that the DNPH solution was saturated after sampling remains an issue. Due to the nature of the analysis, the laboratory is unable to determine how much (if any) formaldehyde was not captured by the DNPH. Therefore the actual emissions are likely to be higher than those presented in this report. Air Resource Management (ARM) recommends the use of additional DNPH solution to prevent saturation and the upgrade of the sampling conditions to allow the use of a heated probe as per US EPA Method 0011"

Table 6 Formaldehyde emissions monitoring results, 11 July 2012

Sample	Concentration (mg/m^3, STP, dry)	Mass Emission (kg/hr)
Run 1	223 ± 34	0.52 ± 0.13
Run 2	234 ± 35	0.54 ± 0.14
Run 3	230 ± 34	0.54 ± 0.13
Average	**229 ± 34**	**0.53 ± 0.13**

Based on the results and recommendations contained in the consultants report, it was agreed that that this overdue 2011-2012 testing should be repeated within the shorter timeframe discussed at the stack test inspection (section 2.2.2.1).

The repeat testing was carried out on 7 November 2012, with a number of modifications to the sampling strategy, as already detailed in (section 2.2.2.1). The modifications included additions to the sampling train, over and above those required by USEPA method 11, which were considered necessary to demonstrate that all the formaldehyde in the stack emissions had been captured.

The report was received on 3 December 2012. The results from this report are presented in Table 7.

Table 7 Formaldehyde emissions monitoring results, 7 November 2012

Sample	Concentration (mg/m^3, STP, dry)	Mass Emission (kg/hr)
Run 1	239 ± 36	0.54 ± 0.14
Run 2	228 ± 34	0.52 ± 0.13
Run 3	254 ± 38	0.58 ± 0.14
Average	**240 ± 36**	**0.55 ± 0.14**

In the report, ARM identified a number of deviations from the standard USEPA Method 11, which it is considered would not have a significant effect on the accuracy of the results obtained.

At the time that the report was provided, ARM highlighted that:

- "The report from AsureQuality shows that the DNPH solution for the combined impinger samples of the first four impingers in the sampling train on all three runs, (samples 12055AA, BA and CA), were saturated. The break through impinger samples (12055AB, BB, and CB), from each of the three runs however show no saturation and indicate that all formaldehyde in the stack gas has been captured.

- The probe and line rinse result has been calculated and divided according to the amount of actual gas sampled for each run and added to the individual total sum of formaldehyde calculated in each sampling run.

- The use of a heated sampling probe and heated teflon sample line has greatly increased the amount of moisture collected. Again this indicates that any formaldehyde present in water droplets has been captured due to the sampled gases being kept a temperature where all moisture remains in a gaseous form until reaching the absorber agent, (DNPH), contained in the impinger train."

When comparing the results from 11 July 2012 and 7 November 2012, it was noted from the stack gas volume sampled, amount of DNPH in the sample train, and the amount of formaldehyde detected that the amount of DNPH used seemed to have a very limited effect on the amount of formaldehyde trapped before saturation occurred. This was resolved after further discussion between ARM and AsureQuality, who advised that the DNPH would also be depleted by carbon monoxide, which is known to be present in the stack emissions.

ARM informed Council that AsureQuality suggested that next time the testing is performed an even a high volume of DNPH be used in the first impingers of the sample train. This could help overcome the saturation problem and could mean using extra-large impingers, going for one litre of DNPH in each of the first three, or adding a fourth impinger at the front of the sampling train. ARM stated that should they be the ones testing next time, they would go for more DNPH to see if they can eliminate the saturation of the first part of the sampling train.

The 2012-2013 emissions monitoring was commissioned by AICA (NZ) Limited and was carried out on 24 May 2013. The report was provided to Council on 22 May 2013, and the results are given in Table 8.

Table 8 Formaldehyde emissions monitoring results, 24 April 2013

Sample	Concentration (mg/m^3, STP, dry)	Mass Emission (kg/hr)
Run 1	284 ± 43	0.62 ± 0.16
Run 2	288 ± 43	0.63 ± 0.16
Run 3	289 ± 43	0.63 ± 0.16
Average	**287 ± 43**	**0.63 ± 0.16**

The results of the formaldehyde determinations provided with the report showed that, as in previous testing, the DNPH in the first portion of the sampling train had been saturation by the high levels of formaldehyde. However, the rear portion of the sampling train, (break through indicator), was not saturated. It was therefore the opinion of ARM that all formaldehyde being emitted at the time of testing was captured in the absorber solution. Council concurs with the opinion.

In summary, the results obtained for emissions monitoring undertaken during the 2012-2013 year show the Company was complying with the 1.0 kg/hr formaldehyde emission rate limit given in special condition 2 of consent 4021. The testing and reporting also complied with special conditions 4 and 5.

Periodic reporting on technological advances

Special condition 12 of AICA's air discharge consent 4021-2 requires:

"That the consent holder shall provide to the Chief Executive, Taranaki Regional Council, by 30 June 1997, and again by 30 June 2001, and every six years thereafter, a written report:

(a) reviewing any technological advances in the reduction or mitigation of discharges to air from the site, how these might be applicable and/or implemented at the site, and the costs and benefits of these advances; and

(b) addressing any other issue relevant to the minimisation or mitigation of discharges to air from the site that the Chief Executive, Taranaki Regional Council, considers should be included; and

(c) detailing an inventory of discharges to air from the site of such contaminants as the Chief Executive, Taranaki Regional Council, may from time to time specify following consultation with the consent holder."

The fourth iteration of the report required by condition 10, due by 30 June 2013 was received in April 2013.

The report outlined the changes that had occurred at the site since the previous (2007) report, however it did not fully address the requests made in Councils letter dated 22 August 2012 regarding piping and re-use of off-gas, and a carbon monoxide emissions inventory.

In subsequent discussions it was established that operations at the plant had reduced to approximately 7 to 10 days per month, with no envisaged increase in this. It was therefore decided that based on this level of operation, the current requirements for this periodic reporting had been met, but that Council would undertake ambient carbon monoxide monitoring in the vicinity of the plant to confirm that potential effect from the current level of discharge of this contaminant were acceptable. This monitoring (reported in section 2.2.1.3) found that there was little, if any, effect on the ambient carbon monoxide concentrations in the vicinity of the plant as a result of the exercise of the AICA (NZ) Limited consent.

2.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by AICA (NZ) Ltd.

It was not necessary to record any incidents in respect of the site operated by AICA (NZ) Limited during the year under review.

2.3 Discussion

2.3.1 Discussion of plant performance

Inspections of the AICA site found that housekeeping and general site management were good. Minor tracking was noted from the urea store on two occasions but this was contained within the managed stormwater system.

There were no instances of consent non-compliance found in relation to component concentrations in the stormwater discharges to the stream during the 2012-2013 year.

Difficulties have been experienced since the 2009-2010 year in obtaining inter laboratory stormwater pond samples, and monitoring the effects of the discharge of the stormwater from the ponds on the Waitaha Stream.

Only one true set of inter laboratory samples were analysed by both Council and AICA during the year under review. AICA was found to have slightly overestimated the ammoniacal nitrogen and formaldehyde concentrations and pH of the stormwater samples. Council continues to have concerns, as raised in previous Annual Reports, regarding the limited number of inter laboratory comparisons available, as there continue to be a small number of occasions when stormwater discharges to the Waitaha Stream occur with component concentrations at the upper limit permitted by consent.

During the year under review the pond levels were generally found to be low at the time of inspections, and although the inspecting officer has asked periodically to be informed when the stormwater ponds were full or to be discharged to the stream in order to provide monitoring opportunities, this did not happen with adequate notice to allow him to attend the discharge. However, programmed receiving water monitoring was completed. A review of the data provide by AICA found that during the 2012-2013 year, the discharges occurred outside Council's normal office hours on 14 of the 33 days on which discharges occurred. Council continued to work with AICA in an attempt to resolve the issue of adequate notice of discharge.

Air inspections showed compliance with consent conditions on all occasions during the 2012-2013 year. The monitoring of the formaldehyde concentration in the discharge from the absorber tower delayed from the 2011-2012 year was performed during the year under review, as was the 2012-13 monitoring. The issues that have been encountered in previous years, in regard to obtaining reliable results, were resolved during the year under review. Results of emissions monitoring confirmed compliance with the absorber tower formaldehyde limit.

The site contingency plan was reviewed and updated during the 2012-2013 year.

2.3.2 Environmental effects of exercise of consents

On the two occasions that samples were obtained when stormwater was being discharged from the ponds, monitoring of the Waitaha Stream found no significant adverse effects due to the discharges from the AICA site. The unionised ammonia and urea concentrations downstream of the plant discharges showed increases, but remained below concentrations that would be considered an issue.

In the 2010-2011 year it was identified that the controlled stormwater discharges were occurring at times when there was no rainfall. Due to the AICA stormwater discharges being at the headwaters of the catchment, there was the potential for adverse effects to be occurring in the stream even though ammoniacal nitrogen concentration of the stormwater complied with the numerical limit on the discharge.

At the time of the consent variation in 2002, when the ammoniacal nitrogen concentration was raised from 2 g/m^3 to 20 g/m^3, the information provided in support of the application stated that discharges would be occurring during periods of heavy rainfall. This was raised with the Company, and Dynea put procedures in place to minimise the potential for effects on the stream, which included using a lower in-house limit for the ammonia concentration of the stormwater for discharge at times when there is no rainfall.

During the year under review all discharges containing unionised ammonia concentrations above 0.025 g/m^3 occurred on days when rainfall was recorded at the New Plymouth wastewater treatment plant.

Ambient odour surveys found no chemical odours downwind of the plant site, and no complaints were reported during the year under review. Gastech monitoring found no detectable levels of phenol (and therefore resorcinol) or formaldehyde off site.

Carbon monoxide monitoring at the plant 1 site down wind boundary found that the ambient concentration was, for the most part, one fifth of the National Environmental Standard.

2.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 9 and Table 10.

Table 9 Summary of performance for Consent 2367-2 AICA's discharge of stormwater

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Self monitoring, Council sampling. However, insufficient number of inter laboratory samples due to communication difficulties	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Receiving water sampling.	Yes
3. Maintenance of a contingency plan for action to be taken to prevent spillage	Review of documentation provided	Yes
4. Records of chemical monitoring and discharge	Records sighted at inspection, copy provided upon request	Yes
5. No chemicals to be stored in carpark catchment area	Observation at Inspection	Yes
6. Optional review provision re environmental effects	Option for review in June 2008 not exercised. No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**

Table 10 Summary of performance for Consent 4021-2 AICA's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Maximum rate of formaldehyde emission from entire site	Not assessed	N/A
2. Emission of formaldehyde from certain areas	Formaldehyde emissions monitoring.	Yes
3. Monitoring of consent	Inspections, odour surveys and ambient monitoring	Yes
4. Requirements for emissions monitoring (stack testing) of absorber tower	Testing performed. Inspection at time of emissions monitoring, review of reports	Yes
5. Method to which emissions monitoring must be performed	Inspection at time of emissions monitoring, review of reports	Yes
6. Minimisation of emissions through control of processes	Discussion and liaison with consent holder	Yes
7. Concentrations of formaldehyde outside site boundary	Ambient Gastech monitoring	Yes
8. Concentrations of phenol outside site boundary	Ambient Gastech monitoring	Yes
9. Concentrations of resorcinol outside site boundary	Ambient Gastech monitoring, inferred from phenol results	Yes
10. Reserved right to review consent at any time	No significant adverse effects. No review required	N/A
11. Consultation before alterations to plant or processes	Discussion and liaison with consent holder.	Yes
12. Formulation of a written report	Report provided by due date. Report reviewed	Yes
13. Adoption of best practicable option to minimise adverse effects on the environment	Inspections, reporting and liaison with consent holder	Yes
14. Optional review provision re environmental effects	No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**

AICA (NZ) Limited generally demonstrated a good level of environmental performance and compliance with consent conditions during the year under review, as defined in Section 1.1.5. However, as identified in the 2011-2012 Annual Report, an improvement in the communication between the Company and Council is desirable regarding the stormwater pond status, and notification of discharges, to allow the programmed monitoring to be undertaken.

2.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Dynea NZ Limited in the 2012-2013 year continues at the level programmed for 2011-2012.

This recommendation was implemented. However, there were a reduced number of stormwater inter laboratory comparisons undertaken undertaken as a result of communication issues between AICA (NZ) Limited and Council.

2.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for air and water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

2.4 Recommendation

THAT monitoring programmed for consented activities of AICA (NZ) Limited in the 2013-2014 year continues at the level programmed for 2012-2013.

3. C&O Concrete Products Limited

3.1 Introduction

3.1.1 Process description

As the name suggests, C&O Concrete Products Limited [C&O Concrete] manufacture concrete products. Their site is located on Connett Road East Bell Block. The site comprises some 1926 m² of industrial land dominated by a central building and includes outdoor construction and storage areas. The stormwater enters the New Plymouth District Council [NPDC] system and is discharged to the nearby Waitaha Stream.

The potential exists for the contamination of stormwater around the site. At the time the consent was issued the discharge was treated as that of contaminated stormwater, and appropriate special conditions were set on the permit.

The discharge from C&O Concrete is expected to potentially contain elevated suspended solids, high pH and alkalinity. The discharge is to the NPDC stormwater system where it mixes with stormwater from roads and other developed sites before discharging to the Waitaha Stream.

Photo 2 C&O Concrete Products site

3.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

C&O Concrete Products Limited holds water discharge permit **4777-1** to cover the discharge of up to 40 litres/second of stormwater from a concrete products manufacturing premises into the Waitaha Stream. This permit was issued by the Taranaki Regional Council on 5 September 1995 under Section 87(e) of the RMA. A variation to the conditions relating to the pH of the discharge was made on 8 September 1997. It is due to expire on 1 June 2014.

Special conditions 1 and 2 place a limit on the suspended solids content of the discharge, and limit the effects of the discharge on receiving water quality beyond a 10 metre mixing zone.

Special condition 3 contains review provisions.

A copy of the permit is attached to this report in Appendix I.

3.2 Results

3.2.1 Inspections

25 September 2012
It was reported that the site appeared to be clean and the stormwater catchments clear of potential contaminants. There was a very minor discharge from the site to the reticulated stormwater drain, which appeared to be flowing clear. It was observed that there was about 4 cm of sediment in the perimeter drain. No sediment tracking was observed off site.

9 January 2013
It was found that the sediment in the perimeter drains was settling well and was not being discharged. The yard area was essentially clean and free of potential contaminants. It was observed that the tracking that was occurring within the yard area was not leaving the site. All containers stored in the stormwater catchment on site had their lids securely in place.

28 May 2013
It was found that the stormwater discharge from the site was clear, but it was noted that the silt and sediment interceptors/traps needed cleaning to ensure their efficiency continues. The Company was advised of this. The Company was also asked to ensure that all site stormwater discharges through the interceptors.

26 June 2013
It was found that the ring drains and silt traps had been cleaned out and the aggregate/suspended solids filters had been replaced. No downstream visual effects were noted in the Waitaha Stream.

3.2.2 Results of discharge monitoring

The requirements for the discharge are that the suspended solids concentration must not exceed 200 g/m^3 and, in the receiving water, the pH shall lie in the range 6.0 – 8.5 after a 10 metre mixing zone.

The discharge from the C&O Concrete site on Connett Road was sampled on two occasions during the 2012-2013 period. The results of this monitoring are shown in Table 11, along with a summary of the historical results for this site.

Results show that, at the time of sampling, the component concentrations in the discharge complied with the limits imposed on the consent.

Table 11 Results of C&O Concrete Products Ltd discharge monitoring (STW001060)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)
Consent Limits	-	***15***	**-**	***200***	**-**
Number	15	9	15	13	13
Min	5.2	0.5	7.2	8	10.8
Max	118	4.0	11.6	160	20.5
Median	16.9	1.1	10.2	64	14.5
23 Jul 2012	6.3	0.5	7.6	4	10.7
17 May 2013	2.6	b	7.3	32	15.2

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
a Not discharging at the time of the sampling survey
b parameter not determined, no visible hydrocarbon sheen and no odour

On reviewing the historical results it is noted that the median suspended solids concentration has been decreasing (Figure 5) since the Company installed, and has been regularly maintaining, the filter baskets in the yard drainage channels.

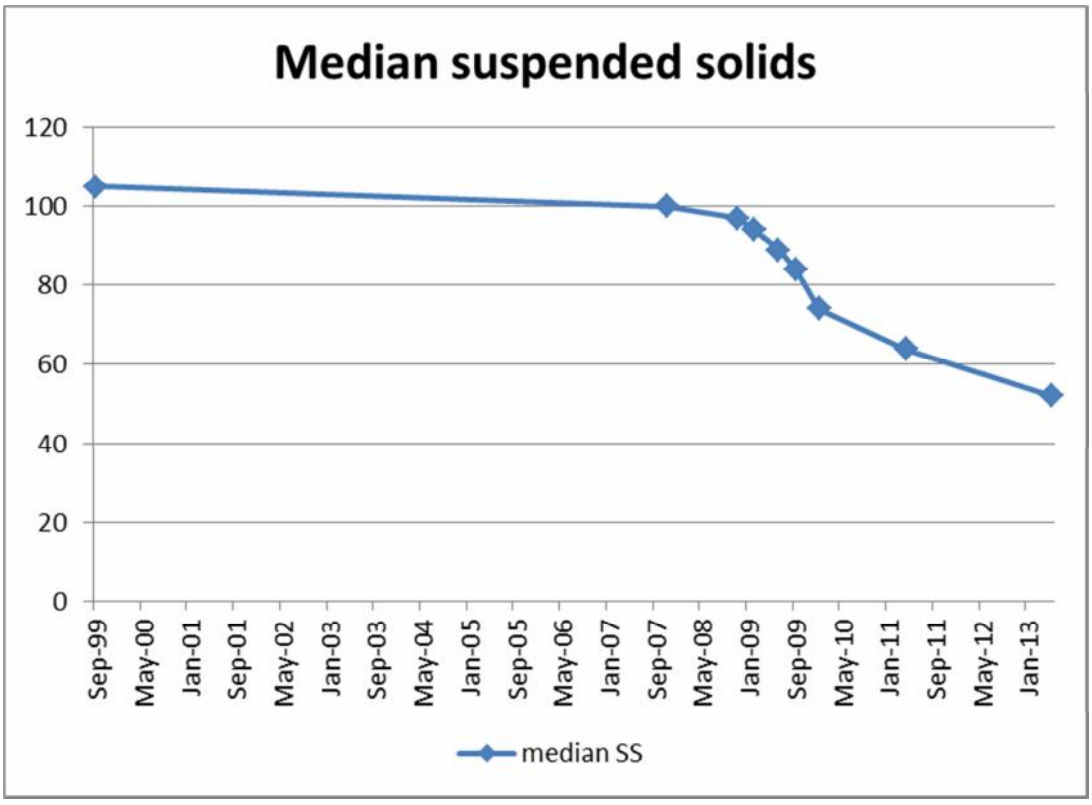

Figure 5 Trend in median suspended solids for the C&O Concrete discharge to the Waitaha Stream

3.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by C&O Concrete Products Ltd.

3.3 Discussion

3.3.1 Discussion of plant performance

Inspection found that general housekeeping was good throughout the year.

The improved management of the sediment control devices continues to result in a good quality stormwater discharge. This is evidenced by the visual clarity noted during inspections, sampling results for the year under review, and when comparing to historical results, the continued decrease in the median suspended solids concentration.

3.3.2 Environmental effects of exercise of consents

Inspections and discharge monitoring showed no adverse effects upon the receiving waters as a result of the activities of C&O Concrete.

3.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 12.

Table 12 Summary of performance for Consent 4777-1 C&O Concrete Products' discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge and pH range of stream	Observation at inspection	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Observation at inspection	Yes
3. Optional review provision re environmental effects	No further option to review prior to expiry in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

During the year, C&O Concrete Products Limited demonstrated a high level of environmental performance and compliance with the resource consent as defined in Section 1.1.5.

3.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of C&O Concrete Products Limited in the 2012-2013 year continues at the level programmed for 2011-2012.

This recommendation was implemented.

3.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

3.4 Recommendation

THAT monitoring programmed for consented activities of C&O Concrete Products Limited in the 2013-2014 year continues at the level programmed for 2012-2013.

4. New Plymouth District Council

4.1 Introduction

4.1.1 Process description

The New Plymouth District Council [NPDC] stormwater system carries discharges from the roads and industrial subdivisions in the Corbett Road, Connett Road and De Havilland Drive areas to the Waitaha Stream. The consented discharge points were on the eastern side of the stream at the end of Connett Road (consent 0608) and into an unnamed tributary/open drain through farm land on the western side of the stream (consent 0609). However, Connett Road has been extended to meet at the Waitaha Stream, and the discharge point for consent 0609 is now just below the culvert where Connett Road crosses the Stream.

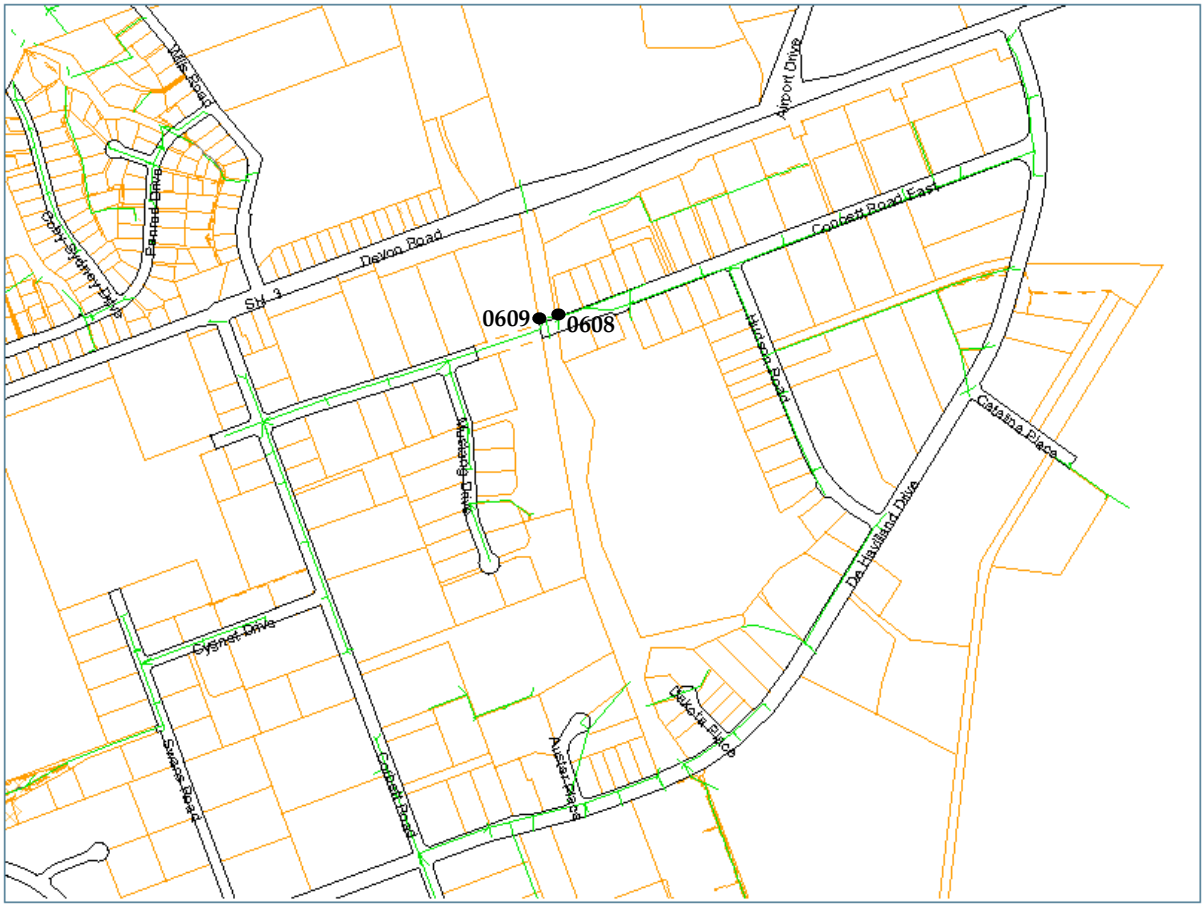

Figure 6 New Plymouth District Council stormwater drainage plan

4.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

New Plymouth District Council holds water discharge permit **0608-3** to cover the discharge stormwater from the Connett Road industrial subdivision into the Waitaha Stream. This permit was originally issued on 20 November 1979 as a water right pursuant to section 21(3) of the Soil and Water Conservation Act 1967.

Permit 0608-2 was issued by the Taranaki Regional Council on 2 December 1992 under Section 87(e) of the RMA. It expired on 1 June 2008. The renewed consent, **0608-3,** was issued to New Plymouth District Council on 10 June 2008 and is due to expire on 1 June 2026.

There are five special conditions attached to this consent

Special condition 1 requires the adoption of the best practicable option to prevent or minimise effects on the environment.

Special conditions 2 and 3 control erosion and prohibit a number of specific effects on the water quality of the stream beyond a 10 metre mix zone.

Special conditions 4 and 5 contain standard provisions for the lapsing of the consent and review of the consent conditions.

New Plymouth District Council also holds water discharge permit **0609-2** to cover the discharge of up to 1200 litres/second of stormwater from an industrial subdivision (on Corbett Road) into an unnamed tributary of the Waitaha Stream. This permit was originally issued on 20 November 1979 as a water right pursuant to section 21(3) of the Soil and Water Conservation Act 1967. The current permit was issued by the Taranaki Regional Council on 6 December 1995 under Section 87(e) of the RMA. It is due to expire on 1 June 2014.

Special conditions 1 and 2 place limits on the quality of the discharge, and limit the effects of the discharge on receiving water quality beyond a 10m mix zone.

Special condition 3 contains review provisions.

Copies of the permits are attached to this report in Appendix I.

4.2 Results

4.2.1 Inspections

Specific inspections are not undertaken in relation to the NPDC consents, however any issues found whilst the inspecting officer is in the area are noted on file.

25 September 2012

It was found that there was low flow in the stream at the time of this inspection. The receiving waters appeared to be sheen free with no evidence of visible contaminants.

9 January 2013

It was reported that there was a small discharge occurring, which was visually clear. There were no visible effects on the receiving waters or vegetation. It was noted that no objectionable odours were detected.

28 May 2013

The discharge was inspected following significant rainfall and runoff over the preceding few days. It was found that the Waitaha Stream showed evidence of discolouration and high suspended solids. It was reported that further investigation and sampling was to be undertaken.

26 June 2013
It was found that there was no run off from areas adjacent to the Waitaha Stream and it was observed that the stream was running clear.

4.2.2 Results of discharge monitoring

The Connett Road stormwater drains receive stormwater from Connett Road, Corbett Road and from a number of adjacent industries. The flow that discharges from the stormwater outlet on the eastern bank of the Waitaha Stream includes discharges from C&O Concrete Products Limited and Transpacific Industrial Solutions. The flow that discharges from the outlet on the western bank of the Waitaha Stream includes the discharge from Parker Drilling International of New Zealand Limited. The discharges from both the Connett Road eastern and western drains to the Waitaha Stream were sampled on two occasions, with the results presented in Table 13 and Table 14.

Table 13 Sampling results - Connett Rd stormwater, eastern drain (TRC site code STW001061, consent 0608), together with a summary of historical results September 1995 – June 2012)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)
Permitted activity limits	**-**	***15***	***6 - 9***	***100***	**-**
Number	34	32	34	31	31
Min	3.4	<0.5	6.4	2	12.5
Max	51.1	230	10.3	270	20.2
Median	10	2.4	7.0	56	15
23 Jul 2012	5.2	3.4	6.8	**110**	11.5
08 Aug 2012	-	**86**	-	-	-
17 May 2013	4.0	6.4	7.7	**200**	15.1

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded

There are no numerical contaminant limits given on this consent, however the discharge quality can be compared to the standards given for permitted activities in Rule 23 of the Regional Freshwater Plan (Appendix III), which have also been incorporated as limits on the consents issued for industrial sites in the catchment discharging via this outlet.

The samples were found to comply with these standards with the exception of suspended solids in the sample collected on 23 July 2012, oil and grease in the sample collected on 8 August 2012 and suspended solids in the sample collected on 17 May 2013.

The suspended solids in the July 2012 sample was only just above that set for permitted activities. The suspended solids concentrations of the two consented activities discharging via this outlet were both less than one quarter of this standard.

An unauthorised discharge was identified from Meredith Scrap Metals Limited during this survey, which was entering the reticulated system that discharges via STW001061. The sample collected from the Meredith Scrap Metals site discharge contained 190 g/m^3 of suspended solids, and would have accounted for the elevated suspended solids seen in the New Plymouth District Council Discharge to the stream. The high oil and grease on 8 August was also sourced to a second unauthorised discharge from Meredith Scrap Metals Limited. These incidents are described in more detail in section 13.

The source of the high suspended solids concentration in the May 2013 sample was not identified. It is however noted that, during this survey, the consented activities discharging via this point were found to have suspended solids concentrations less than one third of the permitted activity standard.

Table 14 Sampling results - Connett Rd stormwater, western drain (TRC site code STW001112, consent 0609)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m^3)	pH	Suspended solids (g/m^3)	Temperature (°C)	Turbidity NTU
Consent Limits	**-**	***15***	***6.0 - 9.0***	***100***	**-**	**-**
Number	9	9	9	9	8	9
Min	5.1	1.5	6.4	2	12.9	1.9
Max	18.3	102	7	180	20.9	230
Mean	10.4	2.3	6.7	16	15.5	20
23 Jul 2012	5.0	2.0	6.7	**110**	11.6	140
17 May 2013	2.4	b	7.1	64	15.2	45

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
b parameter not determined, no visible hydrocarbon sheen and no odour

The discharge was found to be slightly above the consent limit for suspended solids on 23 July 2012, but was in compliance with consent conditions for all other parameters determined. The source of the elevated suspended solids was not identified.

4.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the activities of NPDC in the Waitaha catchment.

Council was however notified of two sewerage overflow in the Waitaha Stream catchment.

On 22 May 2013 during heavy rainfall high flow in the Waitaha Stream combined with high surface stormwater flows and issues with the non return valve resulted in an overflow from the pump station. The discharge was stopped, the area cleaned up and public warning signs were erected.

On 18 June 2013 fat in the sewer main resulted in an overflow to the Waitaha Stream alongside Wills Road. It was reported that the blockage was cleared and the area was cleaned and disinfected. Public warning signs were not erected as it was considered that the high rainfall had cleared the discharge.

4.3 Discussion

4.3.1 Discussion of plant performance

It is recognised that NPDC has little control over the actions of third parties making inappropriate discharges into the stormwater network. During the year under review there were two sourced (both Meredith Scrap Metals Limited) and two unsourced unauthorised discharges via the NPDC reticulated stormwater network. One of the unsourced unauthorised discharges resulted in a minor exceedance of the suspended solids consent limit at the discharge point covered by consent 0609 (110 g/m^3 vs limit of 100 g/m^3). In regards to the general maintenance and operation of the network, NPDC performed satisfactorily.

4.3.2 Environmental effects of exercise of consents

Inspections and sampling of the Waitaha Stream below the mixing zone found that there was little, if any, adverse effects as a result discharges from the stormwater system, or from any maintenance undertaken by NPDC of the outlets themselves.

4.3.3 Evaluation of performance

A tabular summary of NPDC's compliance record for the year under review is set out in Table 15 and Table 16.

Table 15 Summary of performance for Consent 0608-3 New Plymouth District Council's discharge of stormwater into the Waitaha Stream (true right bank - east)

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise effects	Inspection	Yes
2. Mitigation of erosion where possible	Inspection. No erosion issues found	Yes
3. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection, and receiving water sampling	Yes
4. Provision for consent to lapse if not exercised	Consent exercised	N/A
5. Provision for review of consent conditions	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

Table 16 Summary of performance for Consent 0609-2 New Plymouth District Council's discharge of stormwater into the Waitaha Stream (true left bank - west)

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Sampling	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes
3. Optional review provision re environmental effects	Option for review in June 2008 not exercised. No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

N/A = not applicable

During the year, the New Plymouth District Council demonstrated a high level of environmental performance and compliance with the resource consents as defined in Section 1.1.5.

4.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:
THAT monitoring programmed for consented activities of New Plymouth District Council in this catchment in the 2012-2013 year continues at the same level as in 2011-2012.

This recommendation was implemented.

4.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

4.3.6 Exercise of optional review of consent

Resource consent 0608-3 provides for an optional review of the consent in June 2014. Condition 5 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

A recommendation to this effect is presented in Section 4.4 of this report.

4.4 Recommendations

THAT monitoring programmed for consented activities of New Plymouth District Council in this catchment in the 2013-2014 year continues at the same level programmed for 2012-2013.

THAT the option for a review of resource consent 0608-3-2 in June 2014, as set out in condition 5 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

5. Parker Drilling International of New Zealand Limited

5.1 Introduction

5.1.1 Process description

Parker Drilling International of New Zealand Limited [Parker Drilling] established a storage and maintenance yard on Corbett Road, Bell Block in 1996. Stormwater generated at the 0.47 ha site is discharged into the New Plymouth District Council [NPDC] stormwater system, which flows north along Corbett Road then east along Connett Road before discharging to the Waitaha Stream. Small quantities of wash down water are also generated in the cleaning bay, as provided for in the purpose of the consent. This water is treated in the oil separator, and then is also discharged via the stormwater system into the unnamed tributary of the Waitaha Stream, which is now piped (along with the stormwater). The flow from the pipe enters the Waitaha Stream immediately downstream of the Connett Road bridge on the true left bank. It is noted that this wash bay has not been utilised for a number of years.

5.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Parker Drilling International of New Zealand Limited holds water discharge permit **4988-1** to cover the discharge of up to 110 litres/second of stormwater and 0.2 cubic metres/day of treated wash down water from a storage yard for hydrocarbon exploration drilling equipment into an unnamed tributary of the Waitaha Stream. This permit was issued by the Taranaki Regional Council on 24 July 1996 under Section 87(e) of the RMA. It is due to expire on 1 June 2014.

Special conditions 1 and 2 place a limit on the quality of the discharge, and limits the effects of the discharge on receiving water (Waitaha Stream) quality beyond a 10m mix zone.

Special condition 3 contains review provisions.

The permit is attached to this report in Appendix I.

5.2 Results

5.2.1 Inspections

25 September 2012

The site was generally free of potential contaminants. All machinery on site appeared to be clean, and no hydrocarbon spills were noted in the stormwater catchment.

9 January 2013

It was reported that all fuel tanks on site were stored in bunded areas or within double skinned tanks. All machinery stored on site appeared to be clean, and no leaks of any type were observed. All drains and stormwater catchment points were clean and free of obstructions and visible contaminants

29 May 2013
The site was inspected following significant rainfall over the preceding week. No off site stormwater run off was noted at the time of inspection. It was reported that there was not much activity on site at present, but that there was a lot of equipment currently being stored on site.

26 June 2013
It was reported that the site was dry and that there was no stormwater run off occurring at the time of inspection. There were no effects observed from any discharge to the Waitaha catchment, and the site was in satisfactory condition.

5.2.2 Results of discharge monitoring

Stormwater from this Parker Drilling storage facility exits the site at the north east corner of the property, flows along Corbett Road and then down Connett Road where it discharges into the Waitaha Stream. The discharge is sampled from within the New Plymouth reticulated network on Corbett Road before it mixes with stormwater from roadside drains or other properties.

The requirements for the discharge are that the suspended solids concentration must not exceed 100 g/m^3, oil and grease concentration must not exceed 15 g/m^3, and pH must lie in the range 6-9.

The discharge from the Parker Drilling site on Corbett Road was sampled on two occasions during the 2012-2013 period, with the results provided in Table 17.

Table 17 Sampling results – Parker International of New Zealand Limited (TRC site code STW001110, consent 6988).

Date	Conductivity (mS/m @ 20^{o}C)	Oil & Grease (g/m^3)	pH	Suspended solids (g/m^3)	Temperature (^{o}C)
Consent limits	**-**	***15***	***6 - 9***	***100***	**-**
23 Jul 2012	1.4	<0.5	6.8	2	10.1
08 Aug 2012	22.4	b	6.9	7	14.7

Key:
b parameter not determined, no visible hydrocarbon sheen and no odour

The discharge complied with consent conditions at the time of both monitoring surveys.

5.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by Parker Drilling International of New Zealand Limited.

5.3 Discussion

5.3.1 Discussion of plant performance

General housekeeping of the site was found to have been good during the year under review, and the site was well managed.

5.3.2 Environmental effects of exercise of consents

Inspections and catchment monitoring showed no adverse effects upon the receiving waters as a result of the activities of Parker Drilling.

5.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 18.

Table 18 Summary of performance for Consent 4988-1 Parker Drilling discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Discharge sampling	Yes
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and chemical sampling of the stream	Yes
3. Optional review provision re environmental effects	No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

N/A: Not applicable or not assessed

During the year, Parker Drilling demonstrated a high level of environmental performance and compliance with resource consent conditions as defined in Section 1.1.5.

5.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Parker Drilling International of New Zealand Limited in the 2012-2013 year continues at the same level as programmed in 2011-2012.

This recommendation was implemented.

5.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of

permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

5.4 Recommendation

THAT monitoring programmed for consented activities of Parker Drilling International of New Zealand Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

6. Symons Property Development Ltd

6.1 Introduction

6.1.1 Process description

Symons Property Developments Limited hold a consent to discharge stormwater from their truck depot and pipe washing facility on Connett Road East, Bell Block. The site was recently developed, and formal drainage was being established. The companies operating from the site are Symons Transport Limited, who operate road tankers that are used to transport bulk liquids between processing plants, and Symons Energy Limited who provide support services to the oil and gas industry including transportation and cleaning of drilling pipes, and storage and distribution of products such as those used in drilling mud. Collectively, these Companies are known as the Symons Group.

The land on which the site is located, although in an area zoned for industrial use, was in agricultural use until it was developed by Symons Property Developments Limited recently. It originally sloped from west to east towards the Waitaha Stream. Re-grading has occurred and there are now three levels, with ramps providing access between each level. (Figure 5)

Each of the sections/levels are utilised for different aspects of the Symons Group's activities. The western, upper level [141 Connett Road East] is occupied by Symons Transport Limited, and the central and eastern sections [143 and 145 Connett Road East] are occupied by Symons Energy Limited.

Western, upper level [141 Connett Road East]

This section is occupied by Symons Transport Limited, which operates a fleet of 30 road tankers that are maintained to food grade standard. This level is metalled with no formal stormwater drainage. It contains the site office, truck wash facility, and a double skinned 40,000 litre diesel storage tank. The road tankers from both companies are also parked on this area of the site when not in use. The truck wash waste water is currently collected in an open pit, outside the western side of the building that houses the truck wash. This then discharges into the New Plymouth District Council [NPDC] trade waste system. The Company advised Council that it was going to install bunded areas that drain to trade waste at both the diesel delivery and dispensing areas. The truck wash roof water is directed to two 30,000 litre storage tanks which are used as the water supply for the truck wash. The overflow from the storage tank is on to ground.

Stormwater from this level currently either drains to the lower [central] level of the site, or discharges to the road reserve from the site entrance. Some soakage to ground will also occur. Stormwater exiting this entranceway will flow to the Waitaha Stream, either along the road kerbing, or via the reticulated stormwater system through road side sumps if they are installed. The Company plans to seal this upper level of the site, and put in formal drainage, connecting into the NPDC reticulated stormwater system, which discharges into the Waitaha Stream immediately to the north of the Connett Road East culvert.

There are no stormwater detention/treatment devices proposed for this sub catchment and the applicant has indicated that this site improvement work would not be started for at least a year.

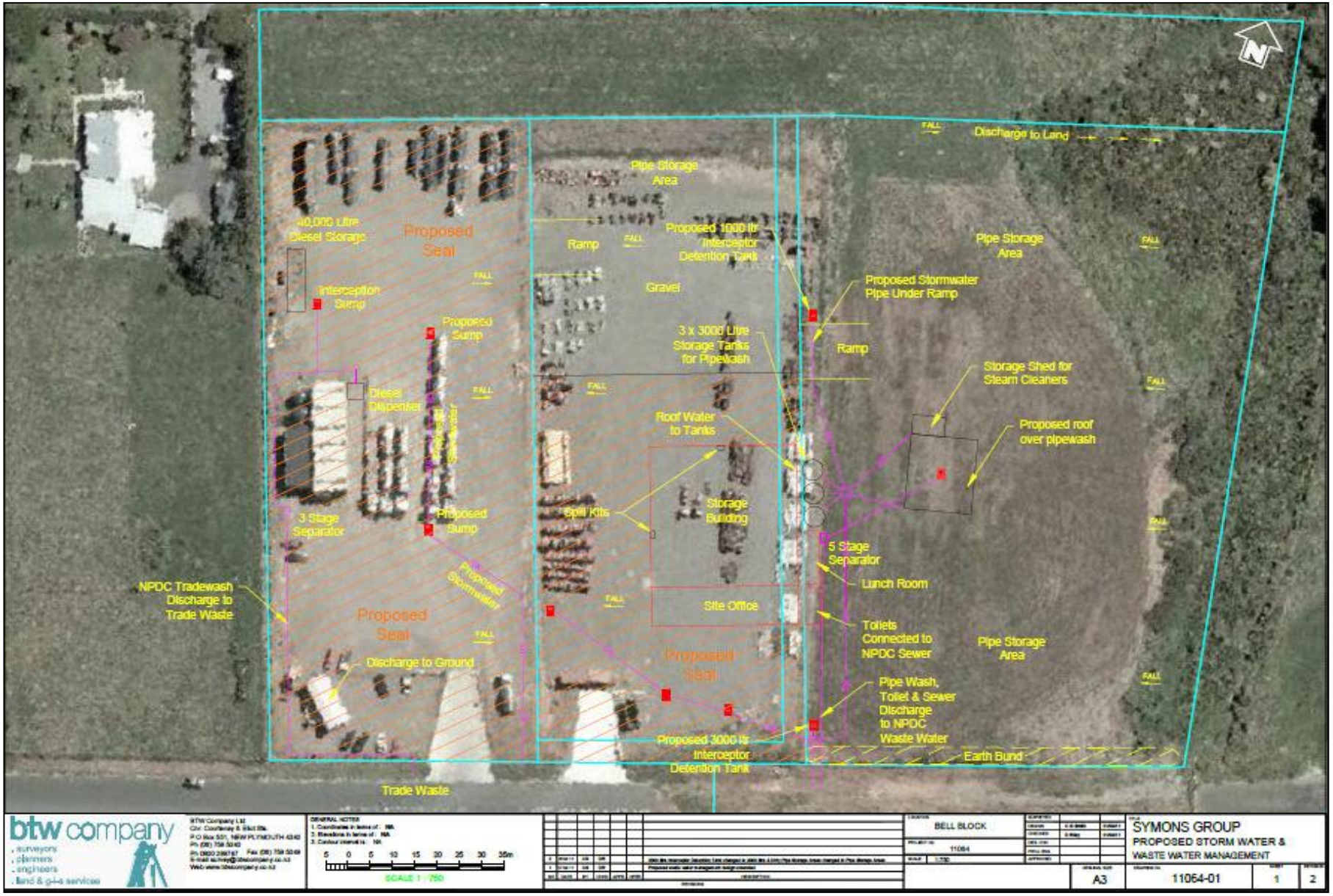

Figure 7 Symons Group Limited site layout

Central, middle level [143 Connett Road East]
The central section contains the site office, lunch room, toilets and a large storage shed, where the products supplied to the oil and gas industry are housed. The northern end of this section is used to store drilling pipes that have been washed and prepared for use at the drilling sites. The surface of this section is currently metal, with the exception of a 20 m concrete apron around the storage shed.

Stormwater from the shed roof is directed to three 40,000 litre storage tanks, which are used to supply the pipe wash facility. The storage tanks are located on the lowest level [eastern section] and currently overflow on to ground.

Stormwater from the southern end of the central section flows to the formal drainage installed on this level, which currently drains into a pit at the south west corner of the lower eastern section. The remaining stormwater flows to the east and enters the drain on the lower eastern section.

The Company has sealed the front two thirds of the central section. There are no stormwater detention or treatment devices proposed for this sub catchment.

Eastern, lower level [145 Connett Road East]
The majority of the section is metalled and is graded with a fall to the west, away from the stream. There is an earthen bund along the southern boundary of this section of the site.

This level of the site is used for storage of new pipe casings prior to them being prepared for use, and also unused casings returned from the off-site drilling activities. There is no reconditioning of used pipes carried out at the site.

The pipe wash facility is also located on this section.

The pipes are cleaned on a concrete wash pad using high pressure hot water blasters. When the activity commenced, wash water and stormwater from the wash pad currently drained to an underground 5 stage [5000 L] water detention tank, which was pumped out into 1000 litre international bulk containers [IBC's]. These IBC were transported by forklift and emptied into the pit that services the truck wash on the uppermost level.

During the 2011-2012 year, the Company installed the necessary pipe work to connect this detention tank into the New Plymouth District Council's trade waste system, and constructed a roof over the washpad.

The majority of the stormwater from this section accumulates in the south western corner, where a pit has been dug. Under light rainfall conditions the stormwater will currently soak to ground. Under heavier rainfall, this pit will discharge to the Waitaha Stream via a small galvanised pipe with filter cloth over the end that has been pushed through the wall of the pit, and a temporary line of fire hose running along the road reserve. The remainder of the stormwater either ponds on the northern side of the ramp connecting the lower and central levels or discharges overland to the Waitaha Stream from the north eastern corner of the site.

The Company has installed formal drainage on the western side of this level, which includes a detention/treatment device, and is connected into the New Plymouth District Council's reticulated stormwater system that flows to the Waitaha Stream.

6.1.1.1 Potential contaminants and mitigation measures

There is the potential for contaminants from the activities on site to become entrained in the stormwater on site.

The truck washing activities are carried out in a drive though building with the washwater directed to trade waste, with little, if any, potential for stormwater contamination.

The diesel tank is double skinned, and wasn't going to be put into service until the bunded delivery and dispensing areas were completed. These bunded areas were to drain to the trade waste line that services the truck wash, again minimising the potential for stormwater contamination.

Other potential contaminants identified relate to:

- the dry and liquid goods stored on site,
- oil/fuel,
- hydrocarbons from the pipes,
- grease from the pipes,
- rust from the pipes, and
- suspended solids from the metalled site surfaces and heavy traffic movements

Neither of the two pipe greases used to protect and lubricate the pipe threads contain metals.

Some of the dry products are alkaline and glycol exhibits a significant biochemical oxygen demand.

A comprehensive stormwater management plan was provided. There are procedures in place for the handling of the stored goods, which states that all loading/unloading is carried out inside the storage shed. A contingency plan is in place for the site, and spill containment kits are available, thus minimising the potential for contaminants to become entrained in the discharge as a result of accidental spillage.

The new pipes are stored on a metalled area of the site prior to cleaning and this area is serviced by stormwater detention tanks. The pipes are all fitted with end caps to protect the threads, which will also minimise the potential for the thread protectants to become entrained in the stormwater.

It was considered that the progressive sealing of the site and the stormwater detention devices described in the application for the consent would reduce the suspended solids concentration of the discharge to the stream. The Company was however, unable to obtain adequate information from the supplier regarding the treatment capacity of the proposed installation, as the particular tanks in question were a relatively new product. The initial proposal was that one 1000 litre detention device be installed to treat stormwater from the northern third of the lowest [eastern]

level, and that a modular 3000 litre modular detention tank be installed to treat stormwater from the remaining two thirds of the lowest [eastern] level.

There is a contingency plan in place for the site, which approved by Council in December 2012.

6.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Symons Property Development Ltd holds water discharge permit **7805-1** to discharge stormwater from a truck depot and pipe cleaning facility into the Waitaha Stream. This permit was issued by the Taranaki Regional Council on 9 May 2011 under Section 87(e) of the RMA. It is due to expire on 1 June 2026.

It has 13 special conditions;

Special condition 1 requires that the consent holder adopt best practice.

Special condition 2 stipulates the size of the catchment area.

Special condition 3 requires stormwater for one section of the site be treated to certain specifications.

Special condition 4 sets out requirements for hazardous substances storage.

Special condition 5 sets out discharge quality parameters that must be met.

Special condition 6 requires that the discharge shall not give rise to certain effects in the receiving water.

Special condition 7 requires that the consent holder prepares and maintains a contingency plan.

Special condition 8 requires that the consent holder prepares and maintains a stormwater management plan.

Special condition 9 requires that the consent holder notify Council of any intended significant changes in processes or infrastructure at the site.

Special condition 10 requires the consent holder to review and update the management and contingency plans prior to making any significant changes at the site.

Special condition 11 requires that the consent holder make any data gathered on stormwater detention tanks at site available to Council.

Special condition 12 is a lapse condition

Special condition 13 is a review condition.

The permit is attached to this report in Appendix I.

6.2 Results

6.2.1 Inspections

25 September 2012

It was reported that the yard area was tidy and free of potential contaminants. It was found that all stages of the oil/water separator were sheen free. It was observed that the northern edge of the yard was bunded and it appeared that there had been no discharge to the wetland area. It was noted that the washpad was not in use at the time of this inspection, and the area was clean and tidy.

9 January 2013

The yard area was found to be clear of potential contaminants and was spill free. It was reported that the wash bay, which discharges to trade waste, was in use at the time of inspection. It was found that there was hydrocarbon sheen and odour present at the first stage of the oil/water separator. A slight sheen, but no hydrocarbon odour was noted at the third stage of the separator. The discharge to stormwater at the manhole was visually clear and odour free.

28 May 2013

The site inspection was undertaken with a staff member from Symons Group. The inspection was carried out following significant recent rainfall. It was found that all stormwater was diverted through an approved separator systems prior to discharge off site. There were no effects noted from any stormwater runoff from the site. The site was considered to be neat and tidy. It was reported that the drill pipe cleaning area was covered and that the discharge was contained and treated in an API (American Petroleum Institute standard) separator. Activities at the site were being conducted in a satisfactory manner at the time of inspection.

26 June 2013

The perimeter of the site was inspected on the side adjacent to the Waitaha Stream (true left bank). It was found that there was no stormwater or washdown water discharge occurring off site. It was reported that the water quality of Waitaha Stream at the time of inspection did not give rise to any concerns about the quality of the stormwater discharge from the site.

6.2.2 Results of discharge monitoring

The stormwater from the central section of the site combines with the stormwater from the eastern section of the site, after the eastern stormwater has passed through the detention tanks. This combined flow is sampled at site STW002083 (Figure 8).

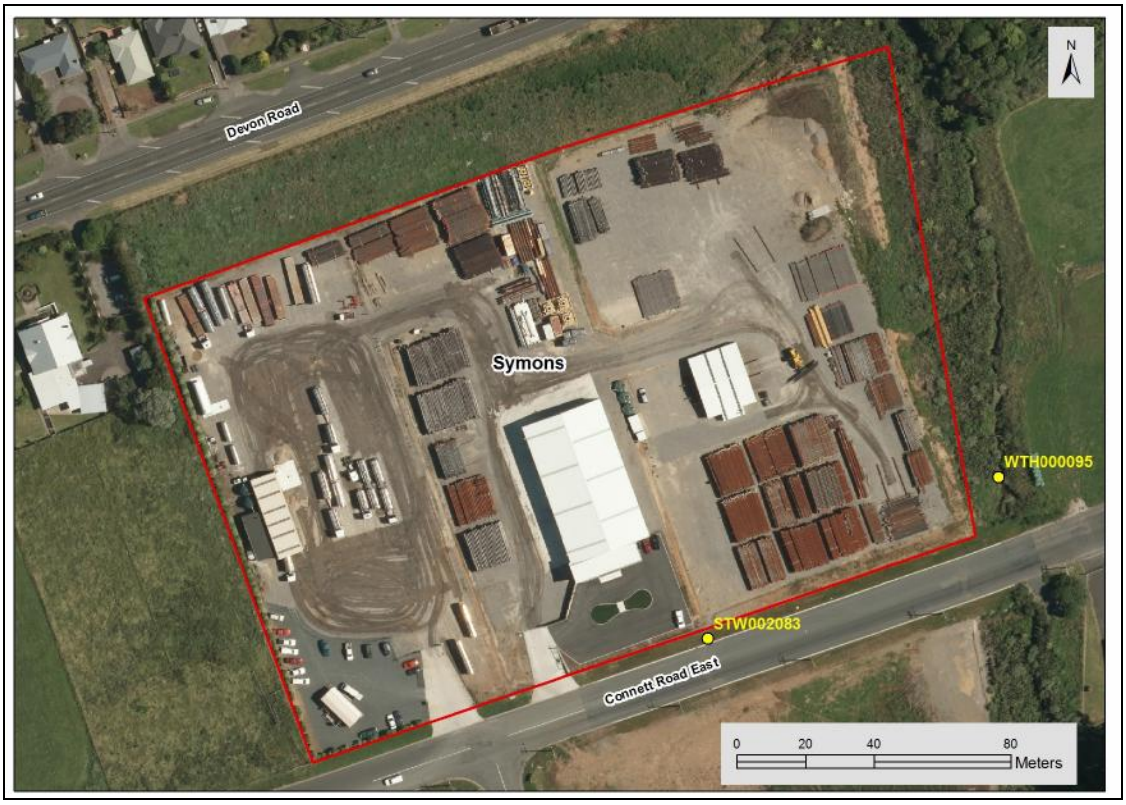

Figure 8 Symons Property Developments Limited property and monitoring site locations

One discharge sample was obtained during the year under review. The results of this sampling are presented in Table 19, along with the limits imposed on the consent.

Table 19 Results of Symons Property Developments Ltd discharge monitoring (STW002083)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended solids (g/m³)	Temperature (°C)	Turbidity NTU
Consent Limits	-	***15***	***6-9***	***100***	**-**	
23 Jul 2012	14.8	<0.5	**5.9**	<2	14.3	0.66
17 May 2013[a]	-	-	-	-	-	-

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
a no discharge occurring at the time of sampling

The sample complied with the consent limits for the parameters determined, with the exception of pH. Although there was a marginal exceedance of the pH limit on the consent, this was within the margin of error of the test method, and receiving water monitoring showed that there were no resultant effects in the stream.

6.2.3 Investigations, interventions, and incidents

In the 2012-2013 year there were five complaints received by Council in relation to dust emissions from the site, only one of which could be substantiated at the time of inspection.

5 November 2012
At 10:45 AM a complaint was received regarding dust from a truck transport yard on Devon Road, Bell Block. Investigation (15 minutes later) found no dust discharging

beyond the boundary of the property at the time of inspection. Staff were spoken to at the site and asked to make sure the yard was watered regularly.

6 November 2012
At 8:10 AM a complaint was received regarding dust discharging from a truck transport yard on Devon Road, Bell Block. Investigation (25 minutes later) found that dust was discharging intermittently beyond the boundary of the property. It was observed that a water cart was being used during the investigation. Staff were notified of the complaint.

23 December 2012
At 1:12 PM a complaint was received regarding dust discharging from a property on Devon Road, Bell Block. An inspection the following day found there was no dust leaving the site at the time of the inspection. The staff on duty were using a water truck to wet the yard to prevent dust discharges from the site.

5 February 2013
At 1:30 PM a complaint was received regarding dust emanating from a truck yard on Devon Road, Bell Block. Investigation (an hour later) found that the yard had been watered and no dust was discharging beyond the boundary of the property.

22 February 2013
At 8:56 AM a complaint was received regarding dust discharging from a site used for transport and hydrocarbon exploration activities at Devon Road, Bell Block. Two hours later, an inspection of the site found that a water cart was in use and the site surface was wet. No discharge was observed at the time of inspection. Staff were advised of the complaint and agreed to use the water cart more frequently over the site.

6.3 Discussion

6.3.1 Discussion of plant performance

General housekeeping of the site was found to have been good during the year under review, and the site was generally well managed.

There was one substantiated incident logged in relation to the site, arising from complaints about dust emissions.

6.3.2 Environmental effects of exercise of consent

No significant adverse effects were noted during the inspections of the site, or sampling of the stream.

It was however found that dust was being discharged intermittently beyond the property boundary from the metalled yard at the site.

6.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 20.

Table 20 Summary of performance for Consent 7805-1-1 Symons Property Development Ltd discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option	Inspection and programme supervision	Yes
2. Catchment not to exceed 3.14 ha	Inspection	Yes
3. Stormwater from Lot 24 DP376382 to be treated.	Inspection	Yes
4. Hazardous substance to be stored correctly.	Inspection	Yes
5. Discharge parameters not to exceed certain limits	Sampling	**Marginal exceedance in pH in one sample**
6. Discharge not to give rise to certain effects in receiving waters	Observations at inspection and during sampling	Yes
7. Prepare and maintain a contingency plan	Review of Council records	Yes
8. Prepare and maintain a stormwater monitoring plan	Review of Council records	Yes
9. Notify Council of changes at the site	Observations at inspection and review of Council records. No changes made	N/A
10. Review and update plans to suit any changes at the site	Observations at inspection and review of Council records. No changes made	N/A
11. Provide Council data on stormwater tank investigations	Investigation is optional and not yet undertaken.	N/A
12. Lapse conditions	N/A	N/A
13. Review condition	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**

N/A = not applicable or not assessed

During the year, Symons Property Development Limited generally demonstrated a good level of environmental performance and compliance with resource consent conditions as defined in Section 1.1.5. There was one slight exceedance of the pH limit on the Company's consent, and an improvement in the Company's control of dust emissions from the yard is desirable.

6.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:
THAT monitoring programmed for the consented activities of Symons Property Development Limited in the 2012-2013 year continues at the same level as programmed for 2011-2012.

This recommendation was implemented.

6.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

6.3.6 Exercise of optional review of consent

Resource consent 7805-1 provides for an optional review of the consent in June 2014. Condition 13 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

A recommendation to this effect is presented in Section 6.4 of this report.

6.4 Recommendations

THAT monitoring programmed for the consented activities of Symons Property Development Limited in the 2013-2014 year continues at the same level as programmed for 2012-2013.

THAT the option for a review of resource consent 7805-1 in June 2014, as set out in condition 13 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

7. Taranaki Sawmills Limited

7.1 Introduction

7.1.1 Process description

Photo 3 Taranaki Sawmills site

7.1.1.1 Stormwater

Taranaki Sawmills Limited's sawmilling and timber processing site is situated on the banks of the Waitaha Stream. The majority of the site is gravelled or undeveloped. Stormwater generally soaks to ground; however, overland flow occurs during heavy rain. The site has a stormwater drainage system where stormwater is channelled and contoured into underground stormwater pipes and open stormwater drains (Figure 9).

Stormwater near the southern boundary of the site flows into and over land and into an unnamed tributary of the Waitaha Stream. Stormwater from neighbouring sites also flows into this tributary; specifically stormwater from Weatherford New Zealand Limited. Weatherford's wash pad is directed though an interceptor system prior to discharge into the unnamed tributary. Taranaki Sawmills has planted the unnamed tributary, which is approximately 100 metres long, with wetland plant species.

The area between the administration building and sorting table is contoured so that stormwater flows into an underground stormwater pipe system. The underground system has an outlet into the top of a second open stormwater wetland drain in the headwaters of another unnamed tributary of the Waitaha Stream.

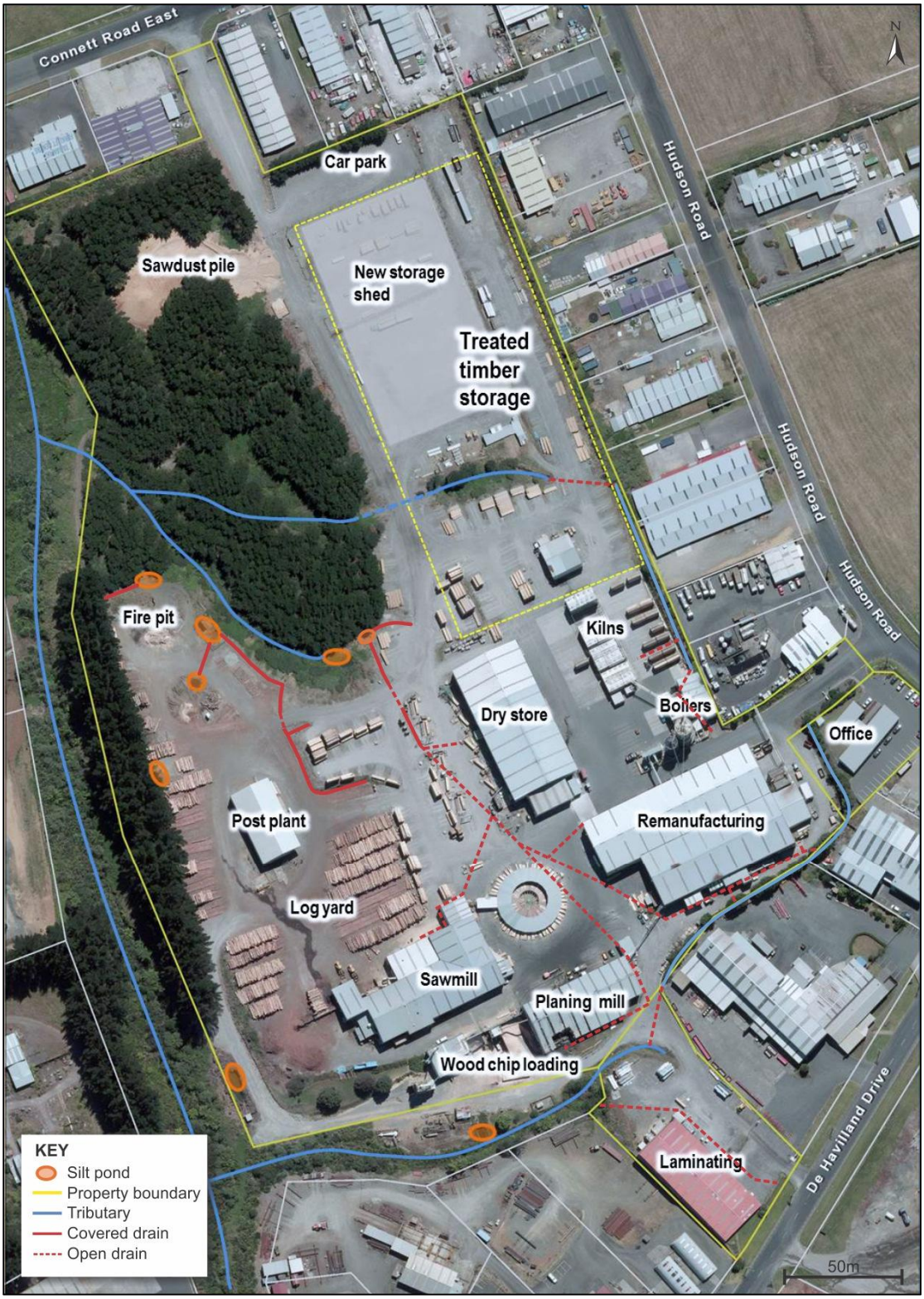

Figure 9 Taranaki sawmills site drainage systems

The tributary is approximately 100 metres long and drains from approximately the middle of the site in a north-westerly direction. Stormwater from the northern area of the site flows over and into land and into a third unnamed tributary planted with wetland plant species. The third tributary is approximately 100 metres long and drains in a westerly direction. The second and third stormwater drains flow through the same outlet into the Waitaha Stream.

Taranaki Sawmills have undertaken riparian planting and improvement of the "wetland" areas along the three stormwater drains. The wetlands effectively act as silt traps and reduce the amount of sediment in the overland stormwater flow. The Taranaki Regional Council provided advice regarding appropriate riparian planting to reduce the amount of sediment entering the stormwater drain and discharging into the Waitaha Stream. Monitoring undertaken by the Council has shown that the wetland was having a positive effect on the downstream water quality.

Photo 4 Taranaki Sawmills, riparian planting along tributaries

It is considered that there is little potential for contamination of stormwater due to on-site control measures. No treatment of wood is undertaken on the site. Most of the waste wood material is used to fuel the boilers on site or is removed from the site and recycled. For example bark is processed into garden mulch, and wood chips are transported to a pulp and paper mill.

Car parks and vehicle working areas are mostly unsealed, so that any fuel leaks or spillages will soak into the ground rather than run into the stormwater system. To reduce yard dust problems, the site is routinely sprayed with water, and historically, oil was placed on the access tracks.

The active area of the site has recently been expanded to accommodate the storage of timber for domestic dispatch, an activity that has been relocated from Katere Road. An additional area of approximately 1.3 ha in the north eastern corner of the site has been cleared of vegetation and gravelled for this purpose.

As required by the Company's consent, a contingency plan is in place in case of spillage at the site. The latest version of the contingency plan was approved by Council in January 2013.

7.1.1.2 Air discharges

Sawmilling activities at the site generate wood waste. The sawdust, wood shaving, and wood chip components of this waste are reused on site for generating energy for the timber drying kilns. No timber tanalising occurs on site, so no tanalised timber wastes are incinerated. Incineration occurs in either an open fire-pit, or in boilers.

The open fire-pit is approximately 10m wide x 10m long x 2m deep. The material incinerated in the open pit is dried untreated timber off-cuts, and occasionally other non-toxic materials such as paper, cardboard, and timber strapping.

There are boilers operated on the site, which run 24 hours a day, seven days a week, with emissions discharged via stacks. Emissions from the original 2 megawatt [MW] Entec Boiler discharge through a 12 metre tall stack, which achieves dust/smoke emissions containing less than 500 mg/m^3 of particulate. The second and third boilers are 4 MW Vekos Boilers, and the single stack for these boilers is 24 metres high.

There are a number of potential contaminants which could be discharged into the air from the combustion of wood products. Modelling of the stack emissions undertaken by the Company has shown that contaminant concentrations at ground level are well below guideline levels.

There are also aesthetic effects to be considered.

Particulates

The combustion of wood and coal from Taranaki Sawmills releases particulate. It is the fine particles of less than 10µm in diameter (PM_{10}) that can adversely affect health. Mitigation measures employed by Taranaki Sawmills include:

- Achieving maximum combustion by ensuring the boilers burn at an optimal level.
- The Vekos boilers are fitted with a two stage cyclone grit arrester to reduce particulate emissions.
- The stacks are of a suitable height to ensure that emissions are well dispersed before reaching ground level (as per Appendix I of the RAQP).
- Taranaki Sawmills have installed an 'oxygen trim' on the 24 metre high Vekos stack. The oxygen trim monitors oxygen levels in the stack, sending a signal to the furnace to stop fuel being fed into the furnace until optimum oxygen levels are reached again. This also assists in achieving maximum efficiency of combustion.
- Staff observe the nature of smoke emissions to determine whether to reduce the amount of fuel fed into the other furnace.
- Various management practices are used to ensure the fire-pit is used efficiently, such as: supervision, using only dry waste-wood for incineration, loading only small quantities into the fire-pit.

- Other operative procedures such as regular maintenance of equipment, visual monitoring of smoke emissions, and staff training and awareness of environmental obligations.

Carbon monoxide [CO]
CO is produced from the incomplete combustion of fossil fuels such as wood and coal, and it can adversely affect human health by reducing the amount of oxygen transported to body tissue, resulting in dizziness, weakness and nausea. Effects are avoided by maintaining optimal combustion conditions in the boilers and fire-pit as outlined above, thereby minimising CO emissions.

Sulphur dioxide
Sulphur dioxide is a consideration when coal is used as an alternative fuel source. It can potentially cause respiratory problems, acid rain, and can affect vegetation in industrial areas. However, the likelihood of pure coal being used is very low, due to the amount of waste-wood generated on the site.

Odour
The primary odour would be the smell of smoke from the burning of waste-wood. However, odours are not anticipated to affect people beyond the Taranaki Sawmills site boundary, due to the dispersion achieved by the stacks.

Dust
Dust can arise from many sawmilling activities on the site. To minimise these effects the stacks on boilers are fitted with grit arresters, and dust control occurs on the site with wet suppression of gravel areas. A new dust control product has been trialled recently. The Council has been advised that Taranaki Sawmills are also considering sealing the site in the future.

Nitrogen oxides
Emission of nitrogen oxides may occur as a result of combustion in the boiler units. Nitrogen is also used to raise the boiling point of water; however, closed loop heat exchangers are used, which means the discharge of nitrogen to the environment from this process is anticipated to be very small.

Visibility and visual/aesthetic impacts
Air pollutants, as discussed above, can all contribute to a haze that lowers visibility, and smoke plumes that can raise public concern. Previously, incidents have occurred from inefficient combustion. Taranaki Sawmills have addressed these problems through management procedures as outlined above. Therefore, discharges from the Taranaki Sawmills sites are not expected to impact significantly on visibility, and emissions from the Taranaki Sawmills site should improve with the oxygen trim mechanisms installed on the main stack.

The Taranaki Sawmills site is located in an industrial area, with no residential dwellings in the immediate vicinity. Neighbouring activities are generally light industrial activities.

7.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Taranaki Sawmills Limited holds water discharge permit **2333-3** to cover the discharge of stormwater from a sawmill operating site onto and into land and into the Waitaha Stream. This permit was issued by the Taranaki Regional Council on 11 November 1987 as a water right pursuant to section 21(3) of the Water and Soil Conservation Act 1967. A renewed permit was issued by the Taranaki Regional Council on 7 February 1996 under Section 87(e) of the RMA, which was renewed again on 8 December 2000. It is due to expire on 1 June 2014.

Special condition 1 requires the consent holder to adopt the best practicable option to prevent or minimise the effects of the discharge.

Special condition 2 requires the Company to maintain a contingency plan.

Special conditions 3 and 4 limit the rate at which stormwater can be discharged from the site and limits particular contaminants that may be present in the discharge.

Special condition 5 limits the effects that the discharge may have on the receiving waters of the Waitaha Stream.

Special condition 6 contains provisions for the review of the conditions of the consent.

A copy of the permit is attached to this report in Appendix I.

7.1.3 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Taranaki Sawmills Limited holds air discharge permit **4096-2** to cover discharge of emissions into the air from sawmilling and untreated timber processing and associated activities including the combustion of wood and/or coal within boilers and wastes in an open fire-pit. The Taranaki Regional Council originally issued this permit on 29 July 1992 as a resource consent under Section 87(e) of the RMA. The consent was varied on 14 September 1993 to allow for a second boiler, and was renewed removing the limit on the number of boilers on 27 January 2004. It is due to expire on 1 June 2032.

Special conditions 1 and 2 require the consent holder to adopt the best practicable option to prevent or minimise effects and to minimise emissions and their effects by selection, operation and management of the best practicable equipment and processes.

Special conditions 3 and 4 require that the activity is undertaken in accordance with documentation provided in support of the two renewals of this consent.

Special condition 5 requires consultation with the Council prior to significant changes to the emissions from the site.

Special conditions 6 and 7 contain notification and record keeping requirements that relate to the use of coal as a fuel for the boilers.

Special conditions 8 and 9 relate to the provision and adherence to a management plan for the combustion of materials in the fire-pit.

Special condition 10 requires the Company to keep an incident log.

Special condition 11 prohibits significant adverse ecological effects.

Special conditions 12 to 14 deal with odour and dust considerations.

Special conditions 15 and 16 impose limits on the ground level concentration of sulphur dioxide and particulate matter of less than 10 microns diameter in line with the National Environmental Standard.

Special condition 17 prohibits noxious or toxic levels of contaminants at or beyond the site boundary.

Special condition 18 imposes limits on the emission of dark smoke from the boiler stacks.

Special condition 19 specifies a minimum height for stack discharges.

Special condition 20 gives the circumstances under which the consent may lapse, and special condition 21 contains provision for review of the conditions on the consent.

A copy of the permit is attached to this report in Appendix I.

7.2 Results

7.2.1 Water

7.2.1.1 Inspections

10 September 2012

This inspection was conducted regarding the high suspended solids concentration (160g/m^3) recorded during the water sampling undertaken on 23 July 2012. At inspection it was found that the three stage pond system near the fire pit needed to be cleaned out. The water in all three stages was very turbid and there were bark chips covering the surface of the third pond. The Company was instructed that these should be cleaned out. It was also recommended that consideration should be given to fitting a mesh on the fence surrounding the pits to prevent rubbish blowing from the yard into the ponds. It was found that the settling pond at the rear of the fire pit was also full and turbid. Water from this pond was discharging over the bank and into the drain, which feeds into the Waitaha stream. There was evidence of sediment discharging, and heading toward the drain, at this point. Although not limited by the Company's consent, due to the high result obtained in the July sampling, the Company was also advised that an investigation should be carried out to identify the

possible causes of high biochemical oxygen demand (BOD) levels in the discharge from the site. The Company was informed that high BOD levels can lead to the growth of sewage fungus in waterways.

9 January 2013
New settling ponds had been created on the side of the yard adjacent to the stream. The new ponds were full at the time of inspection due to sprinklers being used to keep the timber wet during hot weather. The yard area was tidy and free of potential contaminants. All catchment areas and drains were free of spills and obstructions.

28 May 2013
The site was inspected as part of the Waitaha catchment monitoring programme following significant rainfall in the preceding few days. It was observed that the Waitaha stream was discoloured. The Company was advised that some silt runoff from this timber yard was contributing to the effect and the silt and sediment traps on the perimeter of the yard may need cleaning out when the water levels receded. The Company was asked to check this. It was noted that a more intensive inspection would be undertaken in the area to resolve contamination issues arising from this inspection, and in the meantime the Company was instructed to ensure that all stormwater from the site was directed through treatment systems to reduce suspended solids and/or sediment to prevent discolouration of Waitaha stream.

26 June 2013
An in stream survey of the stormwater discharges to Waitaha catchment was undertaken. It was found that the stream was running clear and the Company was advised that the discharge points from the yard did not give rise to any concerns with respect to water quality at the time of inspection. It was noted that the silt traps had been cleaned out as required.

7.2.1.2 Results of discharge monitoring

The stormwater discharge from Taranaki Sawmills is sampled from an unnamed tributary of the Waitaha Stream (WTH000059). The headwaters sampling site (WTH000051) is situated in the middle of the sawmill site and emanates from a stormwater drain adjacent to the dry store. This stormwater system drains the sawmill site from between the administration building and the sorting table. However, other inflows to the system have been identified. The monitoring locations are shown in Figure 10.

Sampling was undertaken at two sites on up to four occasions, the results of which are presented in Table 21 and Table 22.

Samples were taken of the stormwater discharge from the site in conjunction with a sample run of the Waitaha Stream, tributaries and point discharges within the catchment on 23 July 2012 and 17 May 2013, and of the discharge from the tributary only on 4 October 2012 and 11 January 2013.

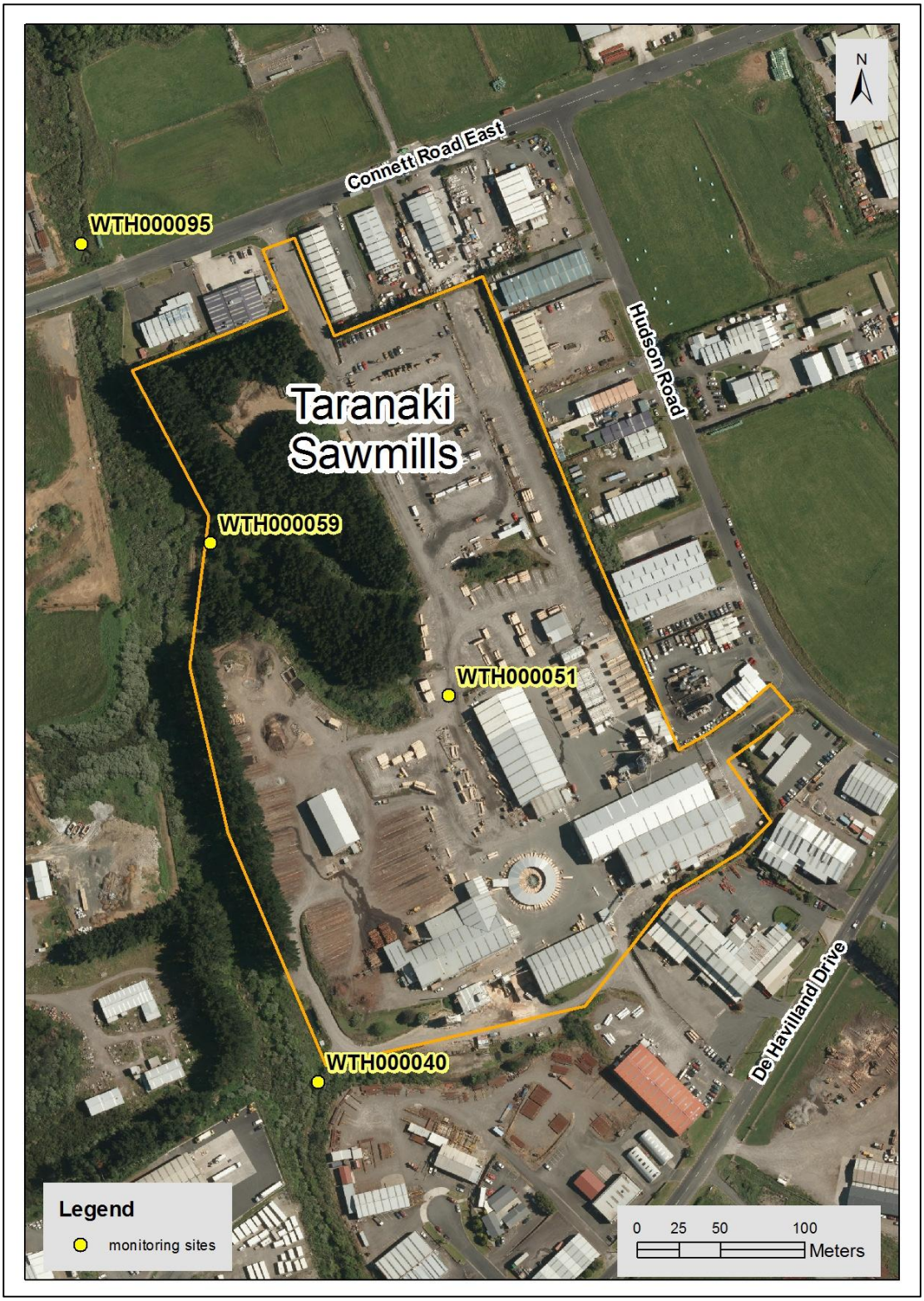

Figure 10 Taranaki Sawmills Limited stormwater and receiving water monitoring sites

Observations and results of the sampling in the Waitaha Stream upstream and downstream of the confluence of the tributary that are relevant to the monitoring of the Taranaki Sawmills site are summarised and discussed in section 7.3.2, with the full receiving water monitoring results presented and discussed in section 14.

The special conditions of resource consent 2333 require that the oil and grease and suspended solids concentrations in the discharge must not exceed 15 g/m^3 and 100g/m^3 respectively, and that the pH shall lie in the range 6.0-9.0. For the purpose of assessing compliance against these limits, Council has previously designated the tributary, just upstream of the confluence with the Waitaha Stream, as the discharge point (WTH000059).

Table 21 Results of stormwater sampling at Taranaki Sawmills – tributary headwaters (WTH000051)

Date	Boron (g/m^3)	Conductivity (mS/m @ 20^{o}C)	Oil & Grease (g/m^3)	pH	Suspended Solids (g/m^3)	Temperature (^{o}C)	Turbidity (NTU)
Minimum	0.03	2.9	<0.5	6.3	8	11.0	13
Maximum	0.8	25.4	530	7.7	3600	22.5	1400
Median	0.1	11.6	1.5	6.8	220	14.9	180
Number	28	27	28	28	13	25	13
23 Jul 2012	0.08	8.4	<0.5	6.7	160	12.3	190
17 May 2013	0.18	14.8	b	6.6	290	15.8	210

Key:
b parameter not determined, no visible hydrocarbon sheen and no odour

It is noted that the suspended solids concentration at the tributary headwaters during the year under review was generally similar to the median of the (limited number of) previous samples from this point. This indicates that, during the year under review, the silt traps installed on site have been not been as effective in retaining suspended solids as it was during the 2011-2012 year when the sample collected contained suspended solids well below the historical median.

Table 22 Results of stormwater sampling at Taranaki Sawmills – tributary upstream of confluence with Waitaha Stream (WTH000059)

Date	Boron (g/m^3)	BOD (g/m^3)	Conductivity (mS/m @ 20^{o}C)	Oil & Grease (g/m^3)	pH	Suspended Solids (g/m^3)	Temperature (^{o}C)	Turbidity (NTU)
Consent limits	**-**	**-**	**-**	***15***	***6 - 9***	***100***	**-**	**-**
Minimum	0.08	-	8.6	<0.5	5.8	17	12.1	26
Maximum	1.1	-	25.8	110	7	1600	21.5	1300
Median	0.29	-	16	0.8	6.6	205	15.4	360
Number	30	-	31	32	32	16	31	13
23 Jul 2012	0.18	21	12.6	b	6.8	**160**	12.4	260
04 Oct 2012	0.17	-	17.9	<0.5	6.8	52	13.9	71
11 Jan 2013	0.74	-	19.3	<0.5	6.7	21	18.1	41
17 May 2013	0.25	-	21.2	b	6.7	16	15.5	39

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
b parameter not determined, no visible hydrocarbon sheen and no odour

With the exception of suspended solids on 23 July 2012, the samples collected at the compliance point (WTH000059) were within the requirements of the conditions of consent 2333-3.

At the time of the July 2012 survey the stormwater discharge at the head of the main tributary/wetland was noted as being turbid (grey), and at the point of discharge

into the Waitaha Stream, the flow was described as being turbid (dark brown), very foamy, and having a sweet odour. These observations lead to the sample being tested for biochemical oxygen demand. This parameter is not limited on the Company's consent, however the concentration found in the discharge was just over four times higher than would be permitted by Rule 23 of the Regional Freshwater Plan (5 g/m^3). The likely source of this would be wood sugars from degrading wood/bark trapped in the settling ponds. The Company was asked to clean out the ponds at a subsequent inspection. This was done, and it appeared to have resolved the issue.

7.2.2 Air

7.2.2.1 Inspections

10 September 2012

It was reported that there was evidence of some plastics being burnt in the fire pit (plastic containers and plastic strapping). The Company was asked to ensure only wood is burnt within the pit. They were advised that the Compliance Manager would be notified and that an abatement notice may be issued.

9 January 2013

No visible emissions or objectionable odours were noted at the time of inspection.

28 May 2013

There were no odours or other emissions to air noted at the time of this site inspection.

26 June 2013

It was found that there were no visible emissions from the kiln drying plant, and no smoke or other emissions were noted from any of the other potential sources on site.

7.2.2.2 Results of receiving environment monitoring

Particulates can derive from many sources, including motor vehicles (especially diesels), solid and oil-burning processes for industry and power generation, incineration and waste burning, photochemical processes, and natural sources such as pollen, abrasion and sea spray.

PM_{10} particles are linked to adverse health effects that arise primarily from the ability of particles of this size to penetrate the defences of the human body and enter deep into the lungs. Health effects from inhaling PM_{10} include increased mortality and the aggravation of existing respiratory and cardiovascular conditions such as asthma and chronic pulmonary diseases.

Taranaki Sawmills' air discharge consent limits the maximum ground level concentration of particulate of effective diameter of less than 10 micrometres (PM_{10}) so that it does not exceed 50 $\mu g/m^3$ (one hour average exposure), on more than 5 occasions per year cumulative across any and all monitoring sites, and does not exceed 120 $\mu g/m^3$ (one hour average exposure) at any time, at or beyond the boundary of the site.

In addition to this, in September 2004 the Ministry for the Environment introduced National Environmental Standards [NES] relating to certain air pollutants.

The NES for PM_{10} is 50 µg/m³ (24-hour average). This standard must also be met irrespective of any conditions on the Company's consent.

Continuous ambient PM_{10} monitoring was conducted in the vicinity of the Taranaki Sawmills site from 19 October 2012 at 15:03 to 21 October 2012 at 09:01. The PM_{10} monitor was located off site to the east (Figure 11). A wind rose, illustrating the wind direction and strength, is presented in Figure 12. The PM_{10} data expressed in terms of a 1 hour average, as per the Company's consent condition, is shown in Figure 13, and the time dependant PM_{10} and wind direction data for the period of monitoring is shown in Figure 14.

The PM_{10} monitor was downwind of the activities occurring on the Taranaki Sawmills site for between approximately 46 and 51% of the time it was deployed. The results show that neither the consent limit of 120 µg/m³ (1 hour average) nor the NES standard of 50 µg/m³ (24 hour average) were exceeded during the monitoring period, as the maximum PM10 concentration recorded was 63 µg/m³ on 19 October 2012 at 20:23. At this time the wind was coming from the south, and so Taranaki Sawmills was not the source of this particulate matter.

The highest one hour moving averages were recorded at the end of the period of deployment, from 05:00 onwards on 21 October, when westerly winds in excess of 20 km/hour were occurring. At this time the PM10 monitor was downwind of the Taranaki Sawmills site. The maximum 1 hour average recorded was 47 µg/m³

During the earlier part of the deployment period, the low ambient suspended particulate concentrations recorded are likely to be a reflection of the relatively light winds (less than 20 km/hour) during the period of deployment of the PM_{10} monitor. Under these conditions it is expected that there would be only a small amount of dust generated by traffic movements on sites in the area, and this would have remained localised to the site on which it was generated.

Figure 11 Location of Taranaki Sawmills PM_{10} monitoring site, 2012-2013

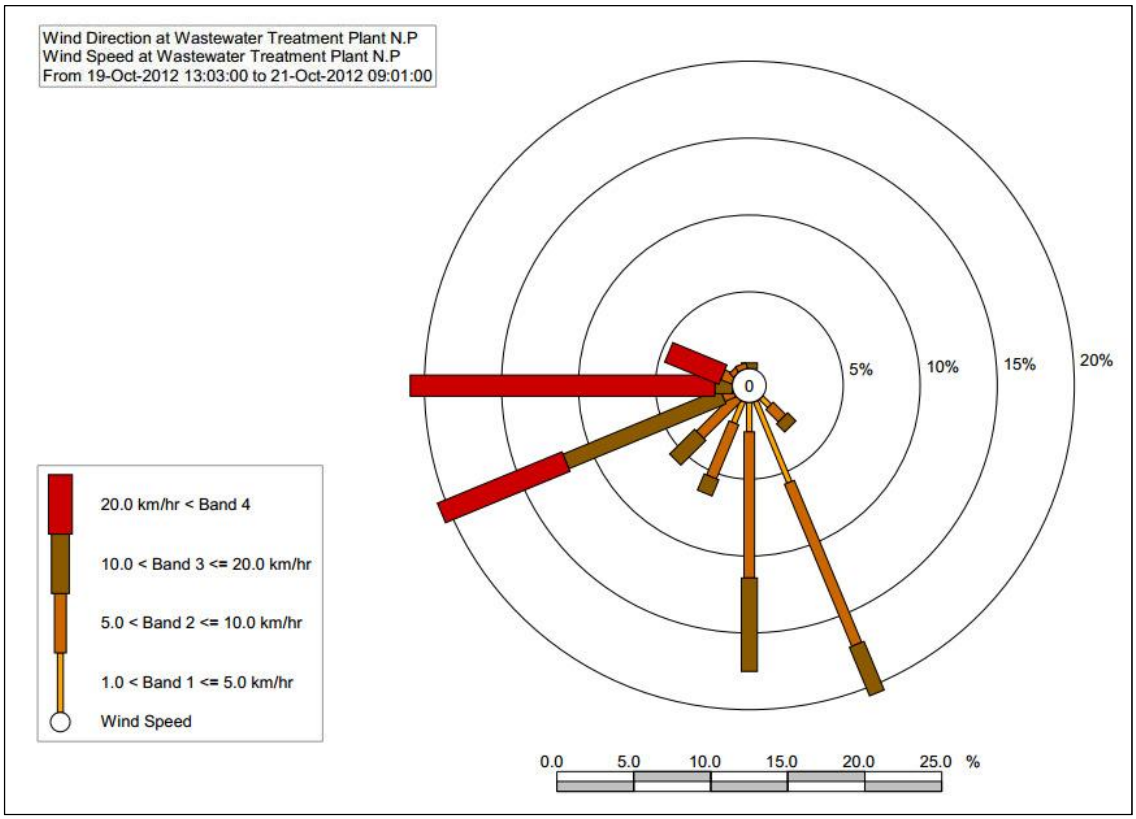

Figure 12 Wind rose illustrating the wind direction and strength over the Taranaki Sawmills PM_{10} monitoring period

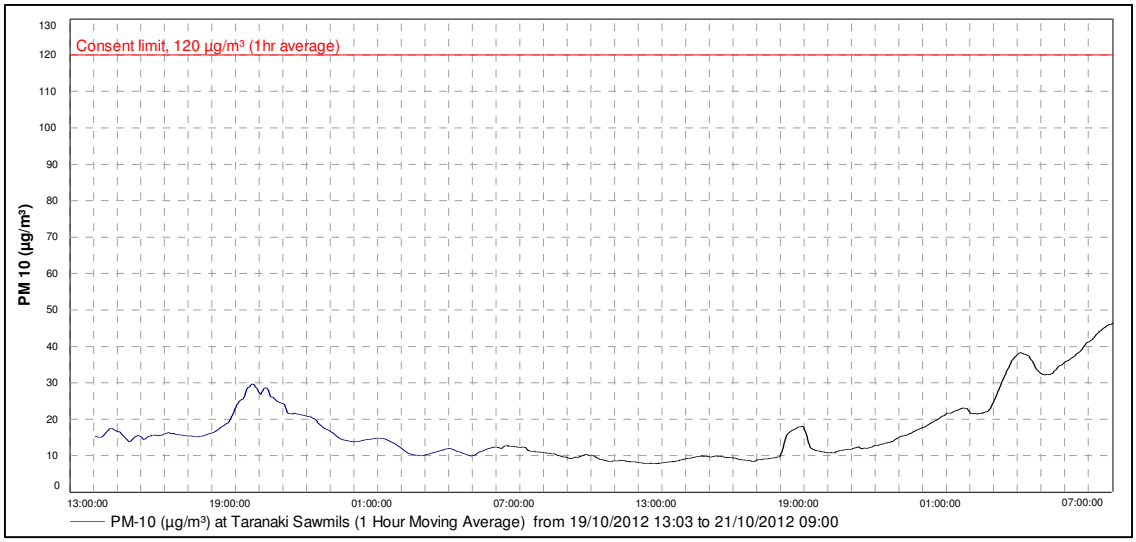

Figure 13 PM_{10} results in the vicinity of Taranaki Sawmills site expressed as a moving 1 hour average

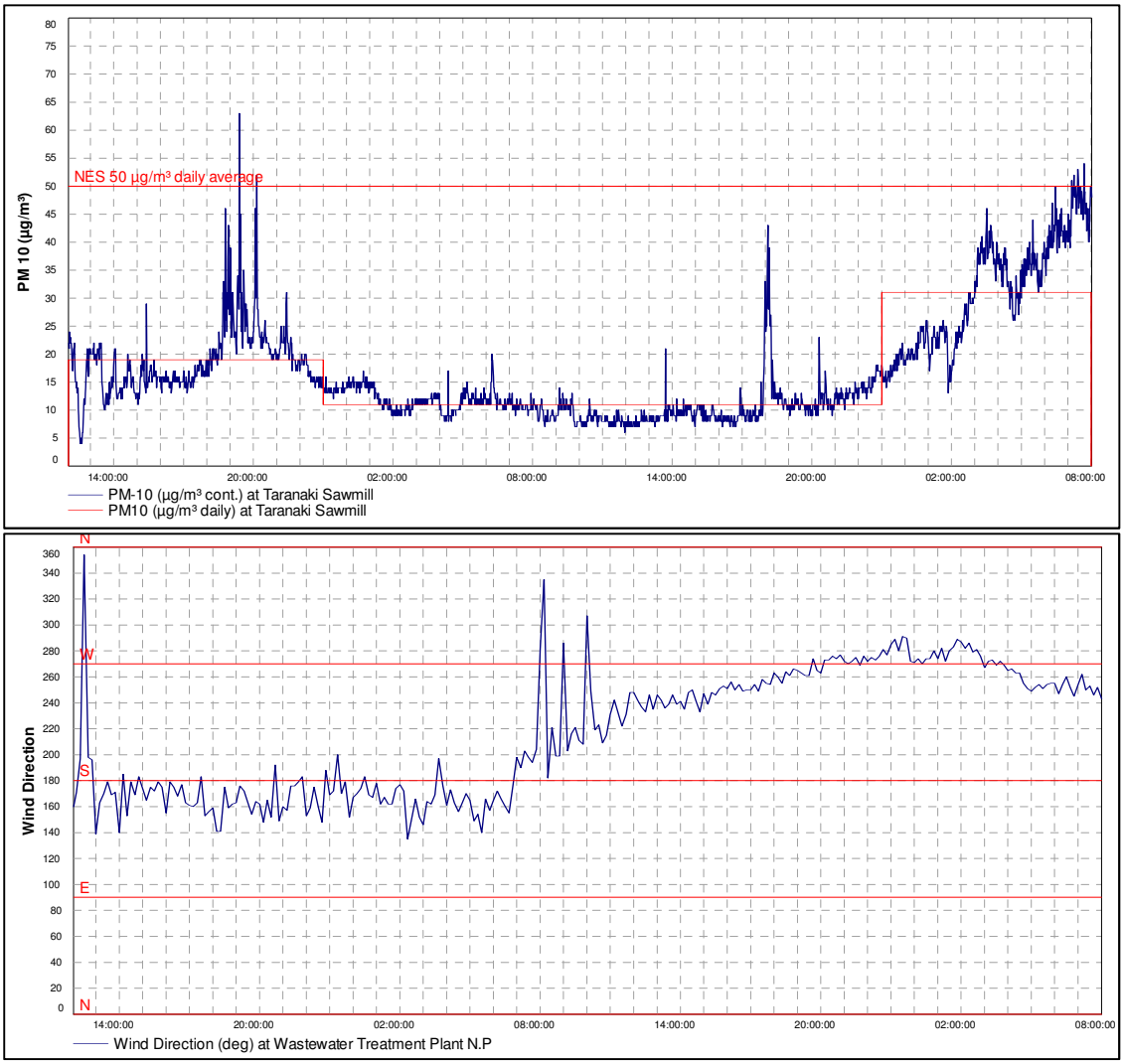

Figure 14 PM_{10}, PM_{10} (24 hour average), and wind direction for ambient monitoring in the vicinity of Taranaki Sawmills site

7.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of Taranaki Sawmills Limited's site in the Waitaha catchment.

7.3 Discussion

7.3.1 Discussion of plant performance

Inspection found that site management and housekeeping were generally good during the year under review. However, on two of the four monitoring occasions, the Company had to be instructed to undertake works on the settlement ponds to improve the quality of the stormwater discharge from the site.

Four samples were taken during the monitoring period at the designated compliance monitoring point (WTH0000059). With the exception of the level of suspended solids in one (23 July 2012) of the four samples, these were found to comply with consent conditions. It is also noted that as a result of observations in the field, the sample collected on 23 July2012 was also analysed for biochemical oxygen demand, which

was confirmed as being elevated. The Company undertook works on the ponds, and sampling did not detect any further compliance issues.

At inspection it was found that the Company's management of air discharges from the site was good. PM_{10} monitoring found that there were generally low ambient concentrations of these small suspended particulates downwind of the site, especially given the increasing wind strength towards the end of the period of monitoring. There were no offsite effects noted at inspection, nor reported to Council during the year under review. The fire-pit was also generally well managed, although on one occasion, during inspection, plastic containers and strapping were found to have been burnt in the pit

7.3.2 Environmental effects of exercise of consents

There was one breach of the suspended solids concentration given in the conditions of the Company's stormwater discharge consent during the monitoring period. For the remainder of the monitoring period, the level of suspended solids and turbidity in the discharge was low when compared to the (relatively high) median of the historical data. It is also noted that no hydrocarbons were found in the discharges or observed in the receiving waters immediately downstream of Taranaki Sawmills discharge point.

Although the discharge exhibited an elevated biochemical oxygen demand on one of the four monitoring occasions, no sewage fungus was reported to have been present in the stream at the time the sample was collected.

The PM_{10} monitoring indicated the emissions from the site are continuing to comply with consent conditions and national environmental guidelines for particulates, and no smoke, dust or odour complaints were received by Council.

During the year under review there were no adverse environmental effects found as a result of air or water discharges from the Taranaki Sawmills site.

7.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 23 and Table 24.

Table 23 Summary of performance for Consent 2333-3 Taranaki Sawmill's discharge of stormwater onto land and into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects on the environment	Inspection and discussion with consent holder	**One breach of SS and elevated biochemical oxygen demand due to inadequately maintained treatment system**
2. Implementation of a contingency plan for action to be taken to prevent spillage	Revised plan reviewed and accepted January 2013	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
3. Maximum stormwater discharge rate	Visual assessment during inspection and at sampling	Yes
4. Limits on chemical composition of discharge	Chemical sampling of discharges	**Suspended solids limit exceeded on 1 of 4 samples**
5. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	Yes
6. Optional review provision re environmental effects	No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**

Table 24 Summary of performance for Consent 4096-2 Taranaki Sawmill's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise adverse effects on the environment	Inspection and discussion with consent holder	Yes
2. Minimisation of emissions due to control of plant and processes	Inspection and discussion with consent holder	Yes
3. Exercised in accordance with application	Inspection and discussion with consent holder	Yes
4. Boiler and stack operated in accordance with application	Inspection and discussion with consent holder	Yes
5. Consultation prior to alterations to plant and processes	Inspection and discussion with consent holder	Yes
6. Notification in the event of coal usage for more than 72 hours in 14 days	No notifications received	N/A
7. Records of coal usage	No notifications received	N/A
8. Preparation and adherence to management plan	Observation at inspection	Yes
9. Level of environmental performance for fire-pit to be commensurate with management plan	Observation at inspection	Yes
10. Notification in the event of an incident having offsite effects	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
11. Adverse ecological effects in Taranaki from discharge not permitted	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
12. Objectionable odour at boundary not permitted	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
13. Definition of factors constituting an objectionable odour	N/A	N/A
14. Limits on objectionable suspended or deposited dust	Observation at inspection	Yes
15. Limit for ground level ambient concentration of sulphur dioxide	Not measured during the year under review. Only applicable when coal is used in the boilers	N/A
16. Limit for ground level ambient concentration of suspended particulate matter <10 microns	Two day deployment of 'Dust Trak' PM_{10} monitor	Yes
17. Noxious or toxic discharges not permitted at boundary	Observation of the surrounding area on inspection or when in the area on other business; any complaints received by Council	Yes
18. Limit on duration of emission of dark smoke	Observation of the surrounding area on inspection or when in the area on other business; review of any complaints received by Council	Yes
19. Minimum height of discharge	Observation during inspection. No decrease in stack height	Yes
20. Lapsing of consent	Consent exercised	N/A
21. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

Taranaki Sawmills generally demonstrated a good level of environmental performance and compliance with consent conditions during the year under review as defined in Section 1.1.5. Although there was one suspended solids exceedance recorded, no significant adverse effects were noted. This matter was resolved promptly, and the minor issues noted at inspection were found to have been addressed by the time of the next compliance monitoring inspection.

7.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Taranaki Sawmills Limited in the 2012-2013 year continues at the same level as programmed for 2011-2012.

This recommendation was implemented.

7.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for air and water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

7.3.6 Exercise of optional review of consent

Resource consent 4096-2 provides for an optional review of the consent in June 2014. Condition 21 allows the Council to review the consent, for the purpose or purposes of:

a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
b) to address via a more appropriate condition or conditions any adverse effect on the environment arising from odour emissions or discharges of other contaminants to air; and/or
c) to further specify 'best practicable option' in terms of the consent holder's management, supervision, maintenance and/or operation of its processes on the property; and/or
d) to specify numerical values for any operating or environmental effects parameter.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

A recommendation to this effect is presented in Section 7.4 of this report.

7.4 Recommendations

THAT monitoring programmed for consented activities of Taranaki Sawmills Limited in the 2013-2014 year continues at the same level as programmed for 2012-2013.

THAT the option for a review of resource consent 4096-2 in June 2014, as set out in condition 21 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

8. TBS Coatings Limited

8.1 Introduction

8.1.1 Process description

Abrasive blasting is used to clean and prepare surfaces for painting. The process involves blasting an abrasive substance on to the surface of the object in question. Material from the blasting process becomes airborne due to the release of high pressure air used to accelerate the abrasive media to the required cleaning velocities. Spray painting is also carried out on the site.

Emissions from abrasive blasting operations have the potential to cause nuisance and possible health risks, especially when conducted within populated areas. TBS Coatings permanent site is located within an industrial area. The environmental effects of dusts can include loss of visibility, loss of the amenity and aesthetic values of a 'clear sky', irritation to breathing, and soiling of surfaces.

TBS Coatings Limited [TBS] operates an abrasive blasting and spray painting facility at Corbett Road Bell Block. This facility was established in 1974 on a 4.5 ha property situated off Corbett Road in the south-eastern corner of the industrial area of Bell Block, New Plymouth (Figure 1 and Figure 15). It is bounded on two sides by farmland. The nearest domestic dwelling is about 250 metres to the south. The predominant winds are westerly and south-easterly.

Various items, mainly steel, are brought to the site for cleaning by dry abrasive blasting and for the application of protective coatings. Blasting occurs mostly in purpose-built enclosures, within sheds situated on the southern part of the site. The dimensions of the larger enclosure are 19.2 m x 6 m x 6 m. Items too large to fit in the booths are sometimes blasted in a paint-shed on the western part of the site, the shed itself acting as the enclosure. Occasionally, larger items are treated in the open in the yard outside the sheds, following notification to the Regional Council.

Abrasive blasting in enclosed areas is usually performed in the 'blasting booth', where garnet, is now the blast medium, or the 'grit chamber', where angular steel grit is used and recycled, however the garnet, a hard recyclable blast medium, may be used in either area.

Protective coating in enclosed areas is carried out mostly in paint rooms adjacent to the blasting sheds. Both ordinary spray painting and hot metal painting is done. The rooms are ventilated with air extraction systems, for the protection of paint workers. Coatings may also be applied in a shed on the western part of the site.

There are emissions into the air from the operations associated with blasting and coating. The blasting medium is usually dust-free, however after being propelled against surfaces to be treated, clouds of detritus are typically created. Paint fragments, rust particles, and shattered blast media may be carried several hundred metres if air pollution suppression equipment is not used. The paint may contain zinc, lead, chromate, or other chemical species of environmental concern.

The enclosed blasting facilities at this site are designed for control of emissions and recovery of blasting material. The blasting booth is a side draught booth connected to

two dust collectors (both 20,000 cubic feet/minute capacity wet scrubbers) in parallel. The grit chamber is a down draught booth connected to a grit recycling system from which blast debris is extracted to a wet scrubber. The paint shed that is occasionally used for blasting also has an air extraction system and wet scrubber.

When open blasting is performed, the item being treated in the yard is screened as completely as practicable, to contain dust emissions.

The boundaries of the site are screened on all four sides with shelter belts of trees and a filter fabric fence, to reduce passage of wind blown dust onto neighbouring properties. The trees also add aesthetic value. There is a gap, along one third of the northern boundary that is not screened which enables items that are too large to fit through the Corbett Road entrance to be brought to and from the site.

Since December 2007, TBS has predominantly used chilled iron grit, and occasionally garnet, as the blast media. This is cleaned out, screened and recycled daily. Because this generates significantly less waste material than a non-recyclable media, blast debris is no longer disposed of by burial on the site.

Sources of possible air pollution include dust from blasting inside the blasting sheds and in the large metalled yard, and from re-suspension of blast debris and scrubber sludge that has been disposed of on site in the past.

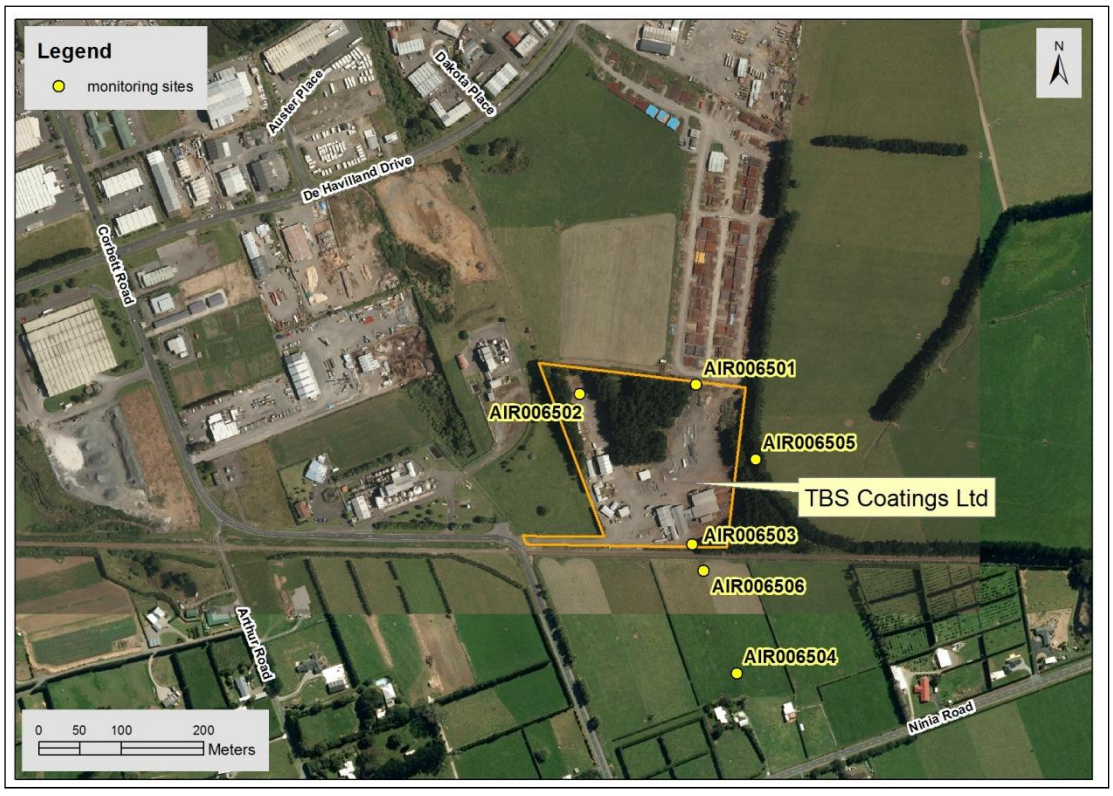

Figure 15 Property of TBS Coatings Limited, and related monitoring sites

TBS also undertakes mobile blasting operations throughout Taranaki. Portable equipment is used for the blasting and coating of fixed structures such as bridges, water tanks, pipelines, buildings and steel structures. Temporary screens are constructed around the items being worked on to contain dust emissions and

depositions, and to restrict the spread of blasting debris. In 1999, TBS started using an 'Enviroblast' lead rated portable dust collector, approved by the New South Wales Environmental Protection Agency, for the treatment of dust emissions where lead paint is being removed. Blast material collected at mobile blasting sites is disposed of by burial at landfills.

Where mobile blasting is to be done in residential or urban areas, the District Council is given prior notification. In cases where the material to be removed or applied is likely to contain toxic substances such as lead, arsenic, chromium or zinc, Taranaki Health is informed.

8.1.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

TBS Coatings Limited holds air discharge permit **4056-2** to cover discharge of emissions into the air from abrasive blasting operations and associated activities at their permanent site and from mobile abrasive blasting operations at various locations. The Taranaki Regional Council originally issued this permit to TBS Coatings (NZ) Limited on 6 May 1992 as a resource consent under Section 87(e) of the RMA for mobile blasting only. The consent was renewed on 9 August 2002 and is due to expire on 1 June 2020.

Special condition 1 states that the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the RMA, to prevent or minimise any adverse effect on the environment.

The remaining special conditions on the consent are intended to reduce the quantity, control the quality, and minimise the potential for adverse effects from the emissions from the blasting activities and associated processes. This is achieved by:

- Limiting the locations at which blasting may be undertaken and ensuring that consideration is given to weather conditions (special conditions 2, 4, and 12). In general the blasting must be undertaken within the permanent facilities where the discharge must be contained and treated to meet specific discharge limits (special conditions 9 and 11).
- Ensuring that adequate screening is in place (special conditions 9, 14, and 15).
- Controlling the blasting media used (special conditions 3 and 7).
- Requiring that certain notifications are made and/or permissions sought prior to undertaking blasting when certain "higher risk" blasting activities are undertaken (special conditions 13, 16, 17 and 18). In the case of the Council, this allows for additional requirements to be placed on the consent holder in certain circumstances, and ensures the opportunity for Council to undertake monitoring specific to those activities.
- Limiting the effects at or beyond the boundary of the property in relation to dust and odour issues (special conditions 6, 10 and 19), and surface water quality issues (special condition 20).
- Addressing housekeeping issues (special condition 5).

- Requiring that the consent holder ensures that all operators understand and comply with the conditions of the consent (special condition 8).

8.2 Results

8.2.1 Inspections

8.2.1.1 Site inspections

Although only three routine compliance monitoring inspections were undertaken during the year under review, the site was visited on three other occasions in the course of incident investigations arising out of complaints received by Council. The findings at the routine compliance monitoring inspections are given below, with the findings at the incident investigation visits given in section 8.2.3.

25 September 2012

The site was inspected in calm wind conditions. It was noted that a small amount of visible emissions were observed emanating from the filter units. These emissions were not crossing site boundary. It was reported that the yard area was tidy and free of potential contaminants. It was considered that the site was being very well managed at the time of this inspection

9 January 2013

It was found that blasting was not taking place at the time of this inspection. The yard area was clean and tidy. No visible emissions or objectionable odours were noted during the inspection. The site was re-inspected by a second Council Officer later in the day as a result of a complaint. The complaint could not be substantiated at the time of inspection, and the findings of this additional inspection are given in section 8.2.3.

30 May 2013

The site was inspected following recent heavy rainfall. A perimeter inspection of the site found that no effects had occurred from stormwater discharges from the site, and no odours or other off site emissions were noted. The site was being managed in a satisfactory manner at the time of inspection.

8.2.1.2 Mobile blasting inspection

18 July 2012

An inspection was undertaken of a blast and paint job on a bridge. The site was inspected in a variable westerly wind. No visible emissions or objectionable odours were noted. At the time of inspection it was found that blasting activities had finished. All materials had been contained and stored within 1 ton bags. It was noted that 49 bags were generated during the job and 30 remained on-site. It was outlined that the material was being stored at the TBS site in New Plymouth while they were awaiting testing to decide on the appropriate disposal channels. It was observed that the final coating of paint was being applied to the structure. It was noted that the integrity of the plastic wrap around the bridge was good throughout the job, and the structure survived several storms.

8.2.2 Results of receiving environment monitoring

Many industries emit dust from various sources during operational periods. In order to assess the effects of the emitted dust, industries have been monitored using deposition gauges.

Deposition gauges are basically buckets elevated on a stand to about 1.6 metres. The buckets have a solution in them to ensure that any dust that settles out of the air is not re-suspended by wind.

Gauges are placed around the site and within the surrounding community. The gauges were deployed in the vicinity of the TBS site on one occasion in the year under review.

The rate of dustfall is calculated by dividing the weight of insoluble material (grams) collected by the cross-sectional area of the gauge (metres^2) and the number of days over which the sample was taken. The units of measurement are grams/metre^2/day (g/m^2/day).

Guideline values used by the Taranaki Regional Council for dust deposition are 4g/m^2/30 days or 0.13g/m^2/day deposited matter. Consideration is given to the location of the industry and the sensitivity of the surrounding community, when assessing results against these values. However, TBS Coatings have a condition on their consent that limits the dust deposition rate beyond the boundary of their property to 4g/m^2/30 days.

Material from the gauges was sifted to remove any incidental organic debris and insects, and then analysed for solid particulates.

The number and position of deposition gauges is governed by the location of potential dust emission sources, the direction of predominant winds, and the position of sensitive areas in the surrounding environment. The sites monitored for TBS's facility are shown in Figure 15 and site descriptions are given in Table 25.

Table 25 TBS Coatings Limited - particulate deposition monitoring sites

Site code	NZTM Coordinates	Location
AIR006501*	1701416E – 5678078N	NE boundary, outside white gates - near scrubber sludge disposal area
AIR006502	1701275E – 5678067N	Inside boundary. Yard in NW corner, N of secondary blasting shed
AIR006505	1701488E – 5677988N	E boundary, at gap in shelter belt opposite blasting shed, near spent media disposal area
AIR006503*	1701411E – 5677885N	S boundary, outside fabric screen at railway line
AIR006504	1701465E – 5677729N	Paddock beside house of nearest neighbour, ~ 150m S on Ninia Road

*It is noted that sites AIR006501 and AIR006503 were moved from just inside the boundary to just outside the boundary fence prior to the start of the 2006-2007 year.

Site AIR006502 is positioned inside the property boundary screenings, and so the consent limit and guideline cannot be applied. However, measurements made at this site are useful for determining the potential for offsite effects and for assessing the source of particulates. The consent limit and guideline is applicable at sites AIR006501, AIR006503, AIR006504, and AIR006505.

Results of the monitoring for the 2012-2013 year are given in Table 26, with a summary of historical data.

Table 26 Deposition gauging results for sampling sites around the TBS Coatings Limited location in 2012-2013

Site	Sample	Date	Number of days	Deposited particulate g/m²/day	Deposited particulate g/m²/30days	Volume Litres
AIR006501	TRC123602	19-Oct-12 to 9-Nov-12	21.0	**0.15**	**4.5**	1.20
	Summary for data 1993-June 2012	min	9	0.01	0.3	0.76
		max	42	0.68	20	9.83
		median	28	0.06	1.8	2.00
		number	23	33	33	21
AIR006502	TRC123603	19-Oct-12 to 9-Nov-12	21.0	0.12	3.6	0.50
	Summary for data 1993-June 2012	min	8.9	0.01	0.3	<010
		max	42	0.68	20	11.0
		median	28.9	0.06	1.8	2.77
		number	25	33	33	22
AIR006503	TRC123604	19-Oct-12 to 9-Nov-12	21.0	0.13	3.9	0.40
	Summary for data 1993-June 2012	min	8.9	0.01	0.3	0.35
		max	42	2.00	60	8.82
		median	28.5	0.12	3.6	2.28
		number	24	33	33	21
AIR006504	TRC123605	19-Oct-12 to 9-Nov-12	21.0	**0.15**	**4.5**	0.60
	Summary for data 1993-June 2012	min	8.9	0.01	0.3	0.47
		max	42	0.16	4.8	9.11
		median	28.4	0.04	1.2	2.07
		number	24	33	33	21
AIR006505	TRC123606	19-Oct-12 to 9-Nov-12	21.1	**0.19**	**5.7**	1.10
	Summary for data 1993-June 2012	min	8.9	0.03	0.9	0.68
		max	42	4.21	126	9.31
		median	28.5	0.20	6.0	2.38
		number	24	33	33	21

Results in bold indicate exceedance of the guideline values (and consent limit) at AIR006501, AIR006503, AIR006504 and AIR006505

The monitoring found that the deposited particulate collected at only one of the site boundary locations complied with special condition 10 of consent 4056 (0.13 g/m²/day), with the on-site gauge returning a result that was below guideline and the lowest deposited particulate result for the time of this survey.

All three of the off site gauges that exceeded the consent limit contained varying degrees of vegetation. The majority of the material collected on the filter from site

AIR006505 had a soil like appearance, rather than having the grey or pink colourations that would be typical of yard dust or garnet blasting debris.

The material from the gauge at site AIR006504 was described as containing beetles, being slimy, and having a slow filtration rate, resulting in a heavy grey/green load. Although the sample is passed through a sieve prior to filtration, smaller organic debris may pass through the mesh of the sieve. In addition, this monitoring location was only downwind of TBS Coatings activities for 4.3 % of the gauging period.

These observations indicate that the majority of the material collected in the non-complying deposition gauges was likely to have been from activities not related to the exercise of TBS Coatings consent.

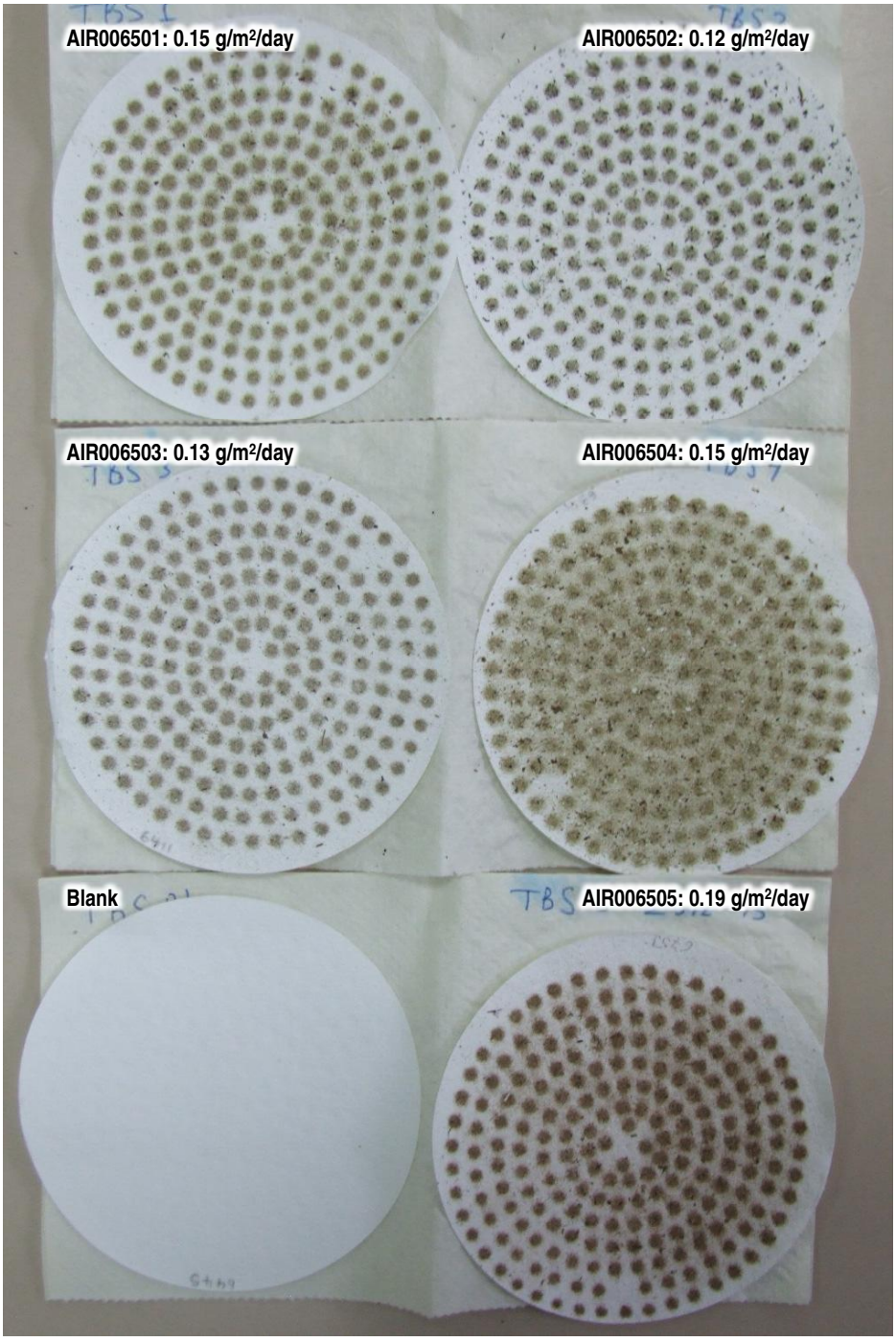

Photo 5 TBS Coatings Limited deposition gauge filters 2012- 2013 survey

8.2.3 Investigations, interventions, and incidents

In the 2012-2013 year there were three complaints received by Council in relation to air emissions from the site. None of the complaints were substantiated at the time of inspection.

18 July 2012
At 1:20 PM a complaint was received concerning dust from a neighbouring industrial sand-blasting and coatings operation at Corbett Road, Bell Block. . An inspection of the site found that consent conditions were being complied with at the time of the inspection. There were no noticeable adverse effects from the operation beyond the boundary of the site. The complainant was informed of the outcome.

A visit to the complainant's property and an inspection of the abrasive blasting and spray painting operation about an hour later, found that consent conditions were being complied with and at the time of the inspection, there were no noticeable adverse effects from the operation beyond the boundary of the site. From the complainant's house, over 200 metres from TBS's site, the investigating officer and the complainant observed a puff of dust or smoke at the site. The source of the dust was not determined it was thought that it may have been from a building or caused by a vehicle. One building door was found to be open a fraction during the inspection of the site, but no emissions were noted from the buildings. It was reported that the entire district, from New Plymouth to Brixton, was covered in a light haze or ground fog, which in the investigating officer's opinion, gave an impression of smog, fog or dust in the near distance.

12 December 2012
At 2:30 PM a complaint was received concerning dust emanating from a commercial property on Corbett Road, Bell Block. The complainant informed Taranaki Regional Council that a dust "cloud" was observed travelling towards the site occupied by AICA, although no complaint was received from that Company. An inspection of the site and surrounding area at 3:10 PM found no evidence of dust or odour discharging beyond the boundary of the site.

9 January 2013
At 3:40 PM a complaint was received concerning dust and paint fume odours emanating from an industrial site. An odour and dust survey was carried out near the complainants property and surrounding area at 4:15 PM. No paint fume odours or dust was detected at the three locations assessed by the Investigating Officer.

8.3 Discussion

8.3.1 Discussion of plant performance

Site inspections found that the permanent blasting facilities were kept in a good state of repair and the treatment systems were found to be well maintained.

8.3.2 Environmental effects of exercise of consents

Atmospheric particulate matter can arise from a number of sources, both natural and from human activity e.g., vegetation pollens, smoke and ash, sea spray, dust from

soils and paved surfaces, and manufacturing processes. While extremely fine particles may remain floating in the atmosphere for weeks or months, coarser dusts may settle out within timeframes ranging from a few seconds to minutes.

The amount of dust and detritus generated at any industrial site is influenced by many factors. From past results of deposition gauging it is likely that factors including seasonal weather variations, vehicle traffic about the site and the type of work being conducted will have some effect on the results.

Abrasive blasting operations have the potential to create adverse effects on health and the environment as well as creating nuisance. The impact that sandblasting has is determined by the type of abrasive used (e.g. is it sand that is dust free with low silica content), the procedures followed by staff when blasting outside the blasting room (e.g. temporary screening), and the items blasted (e.g. with coatings such as lead-based paints or larger rusted areas resulting in generation of extra detritus).

The environmental effects of dusts include loss of visibility, loss of the amenity and aesthetic values of a 'clear sky', irritation to breathing, and soiling of surfaces. It has been found that background rates of dust deposition in rural areas of New Zealand are typically 0.1-1.5 g/m^2/30 days, while in urban areas rates are generally higher, in the range of 0.6-3.0 g/m^2/30 days. From experience, rates above 3-4 g/m^2/30 days tend to lead to complaints by neighbours over the objectionable or offensive nature of dust emissions from particular sources.

Deposition gauging was conducted around the TBS site for the 34th time during the 2012-2013 monitoring year.

The gauging period from 19 October to 9 November 2012 was quite dry wet. Although there was a total of 59 mm of rain, 98% of this rainfall occurred within three 24 hour periods, for the remainder of the gauging period there was less than 0.5 mm of rain. The prevalence of dry days during the gauging period means there would have been a increased potential for suspended particulates to be generated from vehicular movements on the yard, and for any particulates emitted that might have been emitted to be discharged beyond the site boundary.

Historical monitoring (Figure 16) has shown that particulate deposition rates in the vicinity of TBS have been quite variable. During the year under review only two of the five sites were below the consent limit (or guideline value in the case of the on-site gauge).

The particulate deposition rates measured in the gauge just outside the northern boundary (AIR006501), and in a neighbouring residential property approximately 150 metres from the southern boundary (AIR006504) marginally exceeded the consent limit, (AIR006302), with the gauge east of the site (AIR006505) giving the highest particulate deposition rate. The wind direction during this gauging period indicates that site AIR006501 was downwind of the TBS Coatings Limited site for approximately 21 % of the time, site AIR0065304 was downwind of the TBS Coatings Limited site for approximately 4 % of the time, and site AIR006505 was downwind of the TBS Coatings Limited site for approximately 26 % of the time. The appearance of the material collected on the filters during the analysis of the samples from both AIR 006501 and AIR006504 indicates that there was a contribution organic sources, and the brown appearance of the

material collected at site AIR006505 is not consistent with material from the abrasive blasting site (Photo 5).

It is noted that there are now a number of paddocks in the vicinity of the site that have little, if any, vegetative cover at times during the summer period.

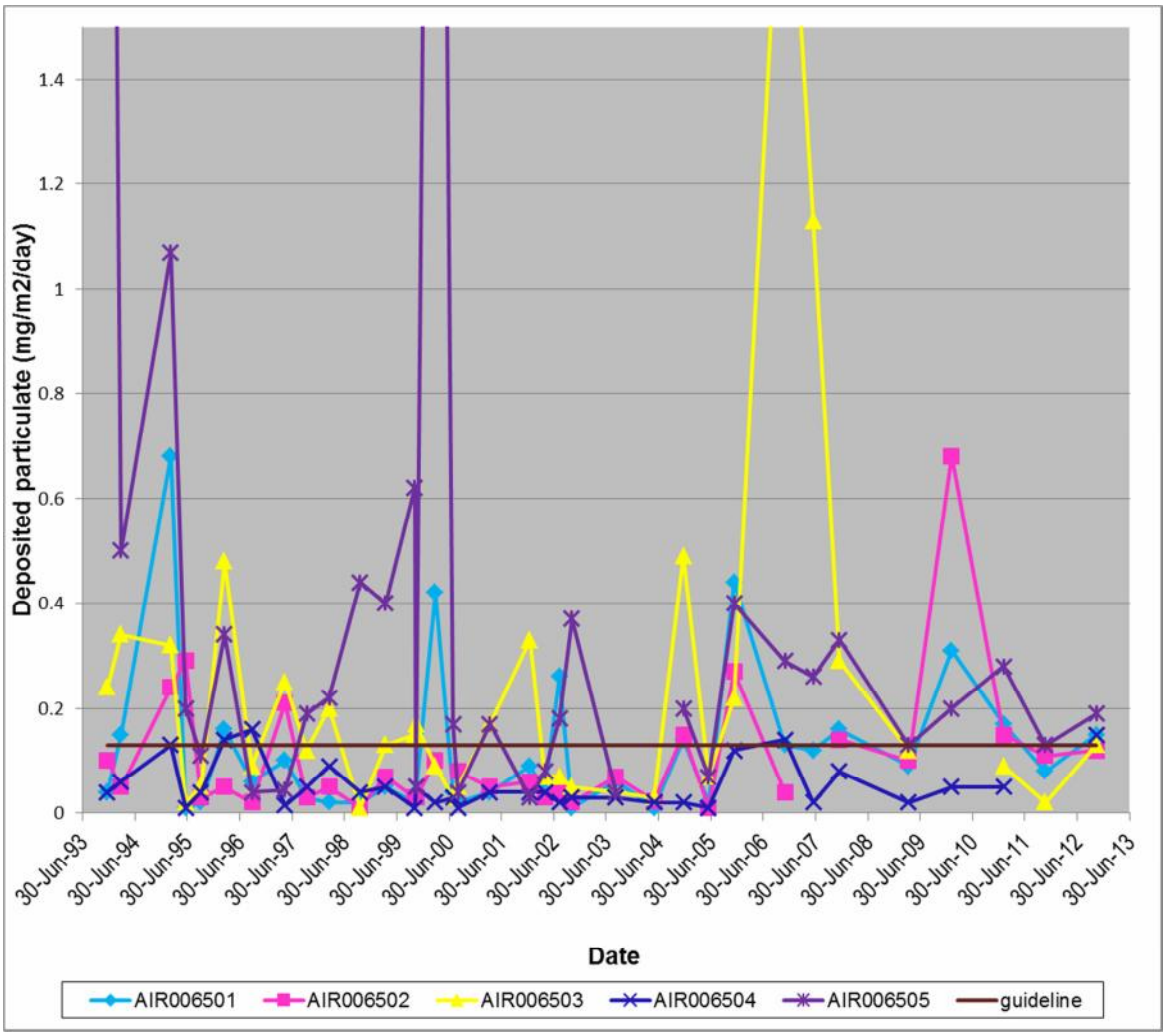

Figure 16 Deposition gauge monitoring in the vicinity of TBS Coatings, December 1993 to June 2013

Comparison of the data against the guideline and consent limit over time (Figure 17) and by monitoring location (Figure 18) shows that although the general long term trend indicating an overall reduction in material deposited in the vicinity of the site had not continued for the 2005-2008 years, there was a marked improvement in the deposited particulate rates during the survey carried out in the 2008-2009 monitoring period. Whilst it is noted that a relatively high level of dust deposition was found in the 2009-2011 monitoring years, it is noted that the 2011-2012 monitoring shows a marked reduction in deposited particulate concentration. Although this may have been related to the high number of wet days during the 2011-2012 gauging period, it appears that there were no significant dust deposition issues from the site during the 2012-2013 gauging period, with the marginal consent exceedances likely to be from sources not related to the exercise of the Company's consent.

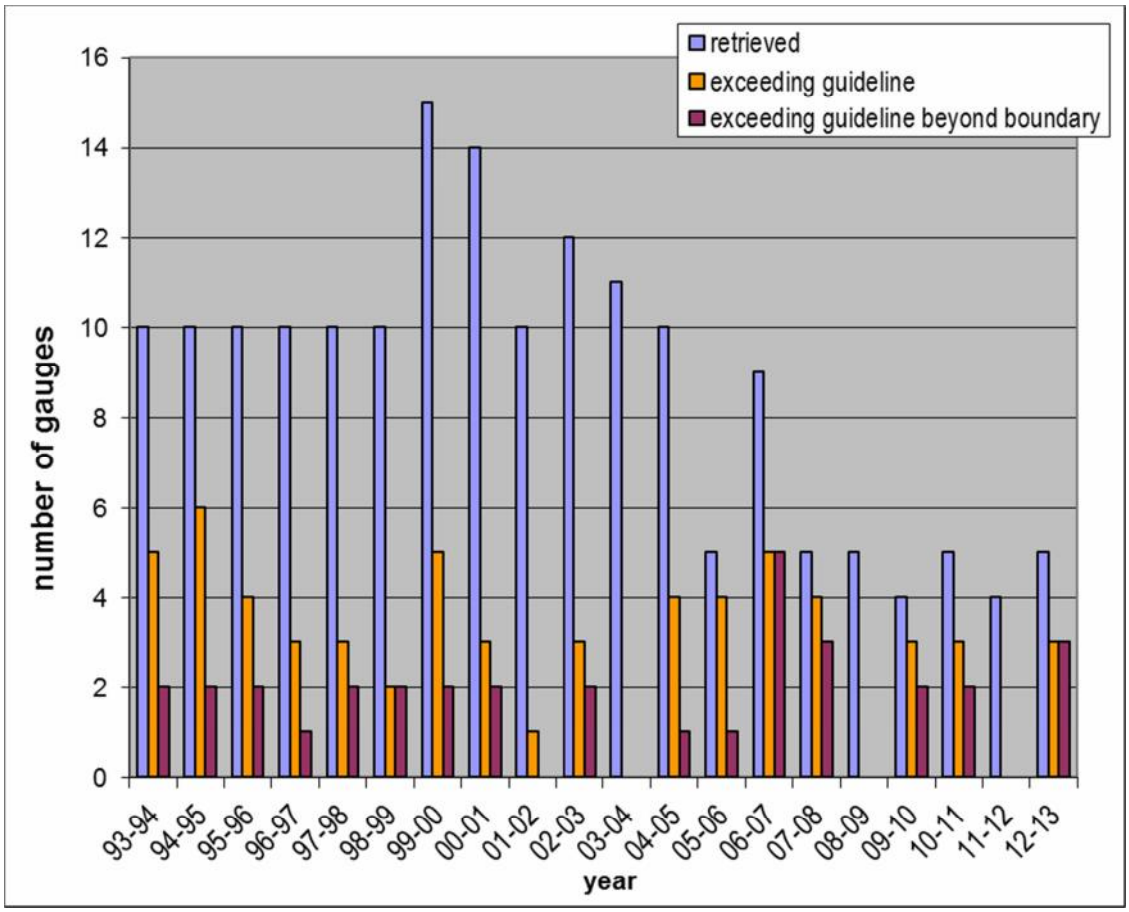

Figure 17 Summary of TBS deposition gauge guideline and consent exceedances by year

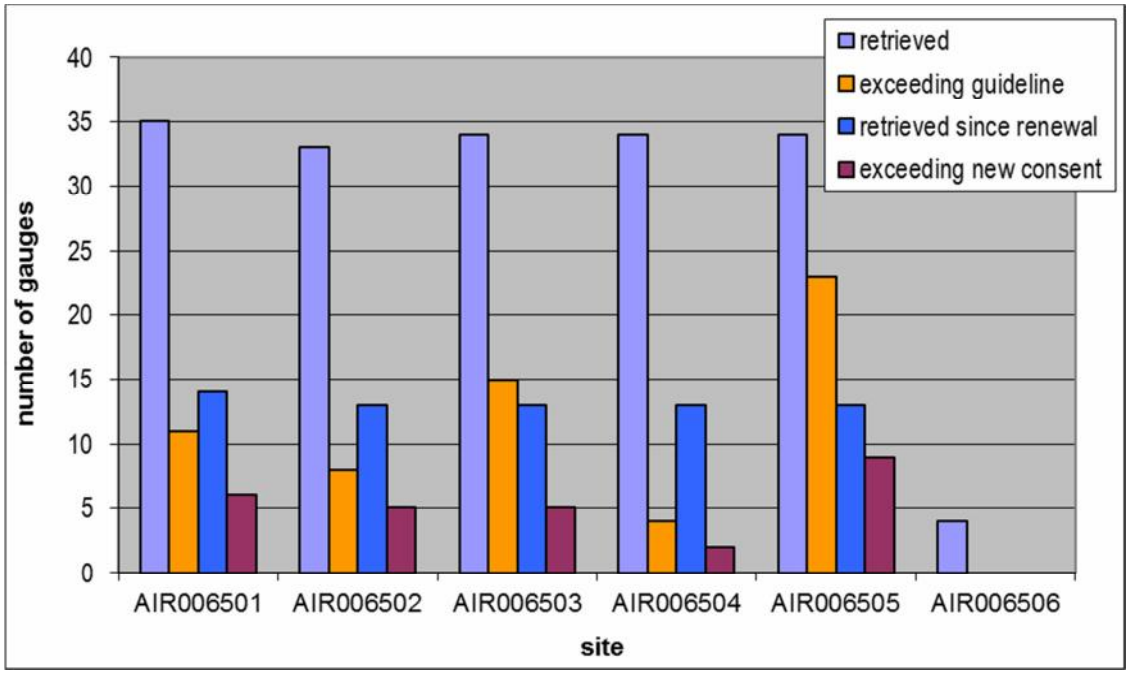

Figure 18 Summary of TBS deposition gauge guideline and consent exceedances by site

Although there were three complaints received regarding air quality issues in the vicinity of the site, none of these were substantiated at the time of inspection.

It is also noted that there were no complaints received during the 2012-2013 gauging period.

8.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 27.

Table 27 Summary of performance for Consent 4056-2 TBS Coating's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adoption of best practicable option to minimise effects on the environment	Inspection and discussion with consent holder	Yes
2. Blasting in enclosed facility	Inspection and discussion with consent holder	Yes
3. Sand to have low active silica content and percentage of fine particles	Sand not used during the year under review	N/A
4. Consideration of wind conditions to minimise of off-site emissions	Inspection. No substantiated complaints received	Yes
5. Clearance of blasting material	Inspection	Yes
6. Offensive and objectionable odours and dust beyond boundary not permitted	Inspection and incident investigation	Yes
7. Avoidance of dry sand blasting for yard and mobile blasting	Inspection and liaison with Company.	Yes
8. Compliance of operators with conditions	Inspection	Yes
9. Treatment of emissions prior to discharge at permanent facilities	Suspended particulate monitoring at inspection	Yes.
10. Dust deposition rate limit beyond boundary	Deposition gauge monitoring	Slight exceedance in 3 of 4 off site gauges, likely to be as a result of other sources of particulate matter in the vicinity of the site
11. Maximum concentrations of lead, chromium and zinc	Not measured. Discussions with consent holder about materials blasted	N/A
12. Infrequent allowance of yard operations	No notification of yard blasting received. No yard blasting found at inspections	Yes
13. Notification prior to yard operations	Inspection and observation when inspecting officer is in the vicinity of the site on other business. No yard blasting noted during year under review	N/A
14. Screening to contain emissions	No yard blasting noted during year under review	N/A
15. Screening of items to be blasted	Inspection	Yes
16. Notification to DC prior to blasting in urban areas	No urban mobile blasting noted during the year under review	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
17. Notification to TRC prior to blasting in close proximity to water course	Notifications received	Yes
18. Written TRC approval and notification of affected parties prior to blasting close to boundaries	No mobile blasting close to boundaries during the year under review	N/A
19. Ambient suspended particulate limit for public amenity areas	No mobile blasting at public amenity areas noted during the year under review	N/A
20. Effects on surface water bodies not permitted	Inspection	Yes
21. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

N/A = Not applicable
TRC = Taranaki Regional Council
DC = District Council

During the period under review, TBS Coatings Limited demonstrated a high level of environmental performance and compliance with consent conditions as defined in Section 1.1.5. During the year, three complaints were received none of which were substantiated at the time of investigation.

8.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of TBS Coatings Limited in the 2012-2013 year continues at the same level as in 2011-2012.

This recommendation was implemented.

8.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for air discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

8.3.6 Exercise of optional review of consent

Resource consent 4056-2 provides for an optional review of the consent in June 2014. Condition 21 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at

the time the application was considered or which it was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

A recommendation to this effect is presented in Section 8.4 of this report.

8.4 Recommendations

THAT monitoring programmed for consented activities of TBS Coatings Limited in the 2013-2014 year continues at the same level as in 2012-2013.

THAT the option for a review of resource consent 4056-2 in June 2014, as set out in condition 21 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

9. Transpacific Industrial Solutions

9.1 Introduction

9.1.1 Process description

9.1.1.1 Site stormwater

Transpacific Industrial Solutions [Transpacific] operates a waste disposal company from their site on Hudson Road, Bell Block. The site comprises some 3903 m^2 of industrial land including buildings and mainly sealed areas. The site is used as a transit depot and temporary storage facility for waste materials collected from throughout the Taranaki region prior to transportation on to an appropriate disposal site.

The majority of the waste collected is waste oil, which is stored in tanks located in a bunded area.

Photo 6 Transpacific Industrial Solutions waste oil storage

There are two open concrete pits in the yard. One contains a series of separators and is used for the separation of sludge and water from the waste oil. The waste water from this process is directed to trade waste and the oily sludge is taken to an off-site location for weathering/bioremediation prior to final disposal. The other open pit is a drive-in facility for the transfer of domestic septic tank effluent from the trucks to the trade waste system.

Photo 7 Transpacific Industrial Solutions oil treatment facility

The waste oil is transported up to a sister Company in Auckland, who undertake the disposal.

The Company gives consideration to the risks associated with the other materials for disposal at off-site licensed facilities, and stores them appropriately on-site prior to transportation.

The stormwater enters the New Plymouth District Council system and is then discharged to the Waitaha Stream. Potential therefore exists for minor amounts of sewage effluent, petroleum products or other contaminants to enter the stormwater system via drains on site.

9.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Transpacific Industrial Solutions holds water discharge permit **4776-1** to cover the discharge of up to 65 litres/second of stormwater from a truck depot premises into the Waitaha Stream. This permit was originally issued to Burroughs A & G Limited by the Taranaki Regional Council on 5 September 1995 under Section 87(e) of the RMA. The permit was transferred to Onyx Group Limited on 16 January 2003 and then to Transpacific Industrial Solutions on 10 January 2007. It was reviewed in August 2008 to ensure that the special conditions were adequate to deal with potential adverse effects of the discharge on the receiving environment. Consent 4776-1 is due to expire on 1 June 2014.

Special conditions 1 and 2 place limits on the quality of the discharge, and limit the effects of the discharge on receiving water quality beyond a 10 metre mixing zone.

Special condition 3 contains review provisions.

Special condition 4 requires the provision of a stormwater management plan to ensure that the consent holder is operating activities at the site in a manner that is consistent with the best practicable option to minimise contamination of the stormwater discharged from the site.

A copy of the permit is attached to this report in Appendix I.

9.2 Results

9.2.1 Inspections

25 September 2012
It was found that the site was clean and free of potential contaminants. All the intermediate bulk containers (IBC's) on site were secure, and had their lids in place. The inspecting officer was informed that the man hole covers and drain covers on site were due to be re-painted to make them more visible. Stencilling was also going to be painted around the yard to indicate the direction to the emergency shutoff valve.

9 January 2013
It was found that the yard area was free from spills. All drains and catchment areas were free from potential contaminants and spills. It was reported that the spill kits were stocked and readily accessible. There were no visible emissions or objectionable odours noted during the inspection

30 May 2013
A site inspection of yard found that all systems were in place to prevent contaminants discharging to the stormwater system in Waitaha catchment. It was considered that the site was being managed in a satisfactory manner.

9.2.2 Results of discharge monitoring

The main stormwater discharge point at Transpacific was sampled on two occasions during the 2012-2013 year, with the results presented in Table 28, along with a summary of historical monitoring results.

Table 28 Results of stormwater sampling at Transpacific Industrial Solutions TRC site code STW001059, together with a summary of historical monitoring results (September 1995 to June 2012)

Date	Conductivity (mS/m @ 20°C)	Oil & Grease (g/m³)	pH	Suspended Solids (g/m³)	Temperature (°C)
Consent limits	**-**	***15***	***6 – 8.5***	***100***	**-**
min	0.7	<0.5	6.2	2	9.1
max	47.8	180	8.7	740	22.7
median	5.6	6.4	7.3	130	14.9
number	53	53	54	24	51
23 Jul 2012	1.6	3.8	7.4	23	10.5
17 May 2013	14.8	5.6	7.5	13	16.6

Bold results do not comply with consent conditions

The limits stipulated by consent 4776-1 are for pH (range 6.0 – 8.5), oil and grease 15 g/m^3 and suspended solid 100 g/m^3

The sample was compliant with consent conditions, with the pH and suspended solids results being well below the historical median for the site. The reduction in suspended solids is probably attributable to the installation of the three stage interceptor.

9.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of Transpacific Industrial Solutions.

9.3 Discussion

9.3.1 Discussion of plant performance

Inspection found that activities at the site were well managed. The stormwater interceptor was inspected and maintained on a regular basis.

9.3.2 Environmental effects of exercise of consent

Monitoring and inspections undertaken during the year indicate that the activities at the site were having little, if any, effects on the receiving environment.

9.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 29.

Table 29 Summary of performance for Consent 4776-1 Transpacific Industrial Solutions discharge of stormwater into the Waitaha Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Sampling and visual assessment at inspection	**Yes**
2. Discharge cannot cause specified adverse effects beyond mixing zone	Visual assessment at inspection and receiving water sampling	**Yes**
3. Optional review provision re environmental effects	Consent reviewed in June 2008. No further review provisions prior to expiry	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

N/A = not applicable

Transpacific Industrial Solutions Limited demonstrated a high level of environmental performance and compliance with consent conditions as defined in Section 1.1.5.

9.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring of the stormwater discharge from the Transpacific Industrial Solutions site in the 2012-2013 year continues at the same level as in 2011-2012.

This recommendation was implemented.

9.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring discharges and effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

9.4 Recommendation

THAT monitoring of the stormwater discharge from the Transpacific Industrial Solutions site in the 2013-2014 year continues at the same level as programmed for 2012-2013.

10. Weatherford New Zealand Limited

10.1 Introduction

10.1.1 Process description

Weatherford New Zealand Limited [Weatherford] has a 1.7 ha yard on Dakota Place for storage and maintenance of drill pipe, down-hole tools and other miscellaneous equipment used in the oil industry. New casing and drill pipe is cleaned to remove protective grease, which until the 1980's contained some copper and zinc, and a high proportion of lead. Kerosene is brushed onto the threads and the oil/kerosene mix is washed off with a water blaster. Kerosene is only used when oil and grease can not be removed by water alone. A phosphate bath is used for the etching of pipes in the lower yard. Minor amounts of waste from this process may be discharged to the stream via the lower wash pad interceptor.

There are two wash pads at the site. The wash pad in the upper catchment drains to a small three stage interceptor which discharges onto land just over 50 metres from the tributary. There is no bunding around the wash pad, so a significant volume of stormwater from the upper yard flows through the interceptor during rainfall events. This wash pad is used for washing pipes and other equipment.

The larger wash pad in the lower yard drains via an in-ground pipe to a three stage interceptor on the bank of the unnamed tributary. The pipes overhang the wash pad slightly, so a moveable catchment facility has been installed to capture wash water at the end of the wash pad to avoid discharge on to land. This wash pad is used for the majority of the wash down that occurs at the site.

The property slopes towards the Waitaha Stream where it runs along the western boundary and the unnamed tributary that runs along the northern boundary. The site is mostly metalled, with only the wash pad areas sealed. There is little constructed drainage at the site and the majority of the stormwater flows overland straight into the Waitaha Stream or the tributary.

Photo 8 Weatherford New Zealand Ltd site - view from the northern corner

10.1.2 Water discharge permit

Section 15(1)(a) of the RMA stipulates that no person may discharge any contaminant into water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or by national regulations.

Weatherford New Zealand Limited holds water discharge permit **4775-1** to cover the discharge of up to 180 l/s of treated stormwater and minor treated washdown water from an oilfield engineering services premises onto land and into an unnamed tributary of the Waitaha Stream. This permit was originally issued to Austoil Drilling Services Pty Limited for the discharge of treated stormwater by the Taranaki Regional Council on 5 September 1995 under Section 87(e) of the RMA. A variation to consent was granted on 30 June 1997 to also allow for the discharge of minor treated washdown water onto land. The permit was transferred to Weatherford New Zealand Limited on 15 April 2002. It was reviewed in August 2008 for the purpose of ensuring that the special conditions of the consent were adequate to deal with potential adverse effects of the discharge on the receiving environment. Consent 4775-1 is due to expire on 1 June 2014.

Special condition 1 places limits on the quality of the discharges. There is an oil and grease limit of 25 g/m^3 for the interceptor discharging to land and 15 g/m^3 for the stormwater and wash water to the Waitaha Stream.

Special condition 2 requires the construction of bunding.

Special condition 3 limits the effects of the discharge on receiving water quality beyond a 10 metre mixing zone.

Special condition 4 contains review provisions.

Special condition 5 requires the provision of a management plan to ensure that the consent holder is operating activities at the site in a manner that is consistent with the best practicable option to minimise contamination in the discharges from the site.

A copy of the permit is attached to this report in Appendix I.

10.2 Results

10.2.1 Inspections

25 September 2012

It was found that the site was generally tidy and free from potential contaminants. At the time of inspection there was no discharge from the upper separator onto land. A minor discharge was observed from the lower separator to water (the unnamed tributary of the Waitaha Stream). The discharge appeared to be clear and there was no visible effect on the receiving waters

8 January 2013

It was found that the yard area appeared to be spill free. There was no discharge from the upper separator onto land. A small clear discharge was occurring from the lower separator to the tributary. No odours were detected and no visible effects were observed in the receiving water. It was noted that the perimeter drains were clear and free from obstructions.

It was reported that the wash bay was not in use at the time of inspection. All hazardous materials were found to be stored in secure containers.

30 May 2013
The inspection undertaken with the Company's QHSE Manager and was following significant rain in the preceding few days. A tour of the site revealed that the separators were in place, and were regularly maintained to prevent a discharge of contaminants to the unnamed tributary of the Waitaha Stream. The Company was advised that stormwater should be directed away from the treatment and containment areas to increase the integrity of the separation systems.

10.2.2 Results of discharge monitoring

The discharge to the tributary of the Waitaha Stream from the lower interceptor (TRC site code IND002031) and the discharge to land from the interceptor servicing the top wash pad (IND002021) are sampled as part of this programme. Stormwater runoff from the yard area (STW002025) was also sampled during the year under review.

The results for the sampling undertaken in the 2012-2013 year are presented in Table 30, Table 31 and Table 32, along with a summary of historical data.

Special condition 1 of resource consent 4775 requires that the oil and grease concentration of the discharge to the Waitaha Stream tributary must not exceed 15 g/m^3, the oil and grease concentration of the interceptor discharge to land must not exceed 25 g/m^3, the pH of all discharges must be in the range 6.0 – 9.0, and the suspended solids concentration of all discharges must not exceed 100g/m^3.

The programme provided for the interceptors to be checked, and sampled if they are discharging. Recent changes in management practices at the site associated with the interceptors have meant that the interceptors are emptied frequently (fortnightly) due to the issues that the Company had been experiencing in meeting the required water quality standards on the consent, particularly the oil and grease limit. As a result, the interceptors should discharge very infrequently.

During the period under review two samples were taken of the discharge from the upper interceptor, three samples were collected from the lower interceptor discharge, and four samples were collected from the overland flow discharging to the unnamed tributary.

Table 30 Results of sampling at Weatherford New Zealand Ltd – upper interceptor to land (IND002021)

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m^3)	Dissolved reactive phosphorus (g/m^3-P)	Oil & Grease (g/m^3)	Acid soluble lead (g/m^3)	pH	Temperature (°C)	Acid soluble zinc (g/m^3)
Consent limits	**-**	**-**	**-**	***25***	**-**	***6-9***	**-**	**-**
Minimum	5.9	0.02	<0.003	<0.5	<0.05	6.2	10.4	0.644
Maximum	23	0.03	30.6	120	<0.05	7.3	19.5	1.81
Median	10.7	0.02	0.007	16	<0.05	7.1	12.6	0.983

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m³)	Dissolved reactive phosphorus (g/m³-P)	Oil & Grease (g/m³)	Acid soluble lead (g/m³)	pH	Temperature (°C)	Acid soluble zinc (g/m³)
Number	19	5	17	25	5	19	18	5
23 Jul 2012	8.0	<0.01	0.005	<0.5	<0.05	7.3	10.3	1.51
04 Oct 2012	7.1	0.01	<0.003	<0.5	<0.05	7.6	13.0	0.916
17 May 2012[a]	-	-	-	-	-	-	-	-

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
a Not discharging at the time of the sampling survey

The samples from the upper interceptor on
to land showed that this discharge was in compliance with consent conditions at the time the surveys were undertaken.

Table 31 Results of sampling at Weatherford New Zealand Ltd – lower interceptor to tributary (IND002031)

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m³)	Dissolved reactive phosphorus (g/m³-P)	Oil & Grease (g/m³)	Acid soluble lead (g/m³)	pH	SS (g/m³)	Temperature (°C)	Acid soluble zinc (g/m³)
Consent limits	**-**	**-**	**-**	***15***	**-**	***6-9***	***100***	**-**	**-**
Minimum	1.4	0.02	0.012	1.6	<0.05	6.8	13	9.6	0.276
Maximum	25.5	0.62	35.6	630	0.05	8.0	40	19.2	2.00
Median	12.0	0.28	0.250	36	<0.05	7.1	26	15.0	0.840
Number	30	4	29	35	4	31	6	27	4
23 Jul 2012	11.7	0.17	0.842	<0.5	0.14	6.9	49	12.0	0.374
04 Oct 2012	17.6	0.08	1.22	4.8	0.10	7.3	27	15.3	0.231
11 Jan 2013	19.5	0.04	4.55	11	<0.05	7.0	11	18.1	0.167
17 May 2012[a]	-	-	-	-	-	-	-	-	-

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
a Not discharging at the time of the sampling survey

The samples from the lower interceptor showed that the discharge from this source into the unnamed tributary were in compliance with consent conditions at the time the surveys were undertaken.

It is noted that the oil and grease results obtained during the year under review were below median, but that the dissolved reactive phosphorus results were above median, and the suspended solids concentration in the sample collected on 23 July 2012, whilst still only about half the concentration permitted, was a new maximum for this monitoring location.

Table 32 Results of sampling at Weatherford New Zealand Ltd – stormwater overland flow to stream (STW002025)

Date	Conductivity (mS/m @ 20°C)	Acid soluble copper (g/m³)	Dissolved reactive phosphorus (g/m³-P)	Oil & Grease (g/m³)	Acid soluble lead (g/m³)	pH	SS (g/m³)	Temperature (°C)	Acid soluble zinc (g/m³)
Consent limits	**-**	**-**	**-**	***15***	**-**	***6-9***	***100***	**-**	**-**
Minimum	0.1	<0.01	<0.003	<0.5	<0.05	6.5	6	11.3	0.082
Maximum	17.5	0.04	0.061	56	<0.05	8.1	420	21.3	0.736
Median	5.7	0.02	0.006	2.1	<0.05	6.9	60	15.3	0.269
Number	13	8	14	14	8	14	10	14	8
23 Jul 2012	1.2	0.05	0.012	<0.5	0.05	6.9	**240**	10.2	0.711
04 Oct 2012	19.8	<0.01	0.009	0.6	<0.05	6.6	37	15.3	0.353
11 Jan 2013	15.2	<0.01	0.030	0.5	<0.05	6.4	7	17.8	0.363
17 May 2013	2.1	<0.01[d]	0.007	2.1	<0.05[d]	6.8	68	15.2	0.278[d]

Key: Results in bold within a table indicate that a consent limit for a particular parameter has been exceeded
d Result is for dissolved metal component

The stormwater discharge from the site was found to comply with component concentrations given in the consent on all occasions, with the exception of the suspended solids concentration on 23 July 2012.

10.2.3 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of Weatherford New Zealand Limited.

10.3 Discussion

10.3.1 Discussion of plant performance

Inspections found that the housekeeping at the site was generally of a high standard and operations were well managed. At the final compliance monitoring inspection of the year, the Company was advised to give consideration to diverting stormwater flow away from the lower washpad area to maintain the integrity of the treatment system.

During the year under review, the site was visited on a total of four occasions for inspections and/or sampling. A discharge was found to be occurring from the upper interceptor on two occasions and from the lower wash pad interceptor on three occasions. When these discharges were sampled they were found to be compliant with consent conditions. The overland flow of stormwater to the tributary was sampled on four occasions, with one consent exceedance of suspended solids found.

10.3.2 Environmental effects of exercise of consent

Observation of the Waitaha Stream and its tributary during inspection and sampling found no significant effects in the receiving water related to the Weatherford discharges. There was one exceedance of the suspended solids limit found in the overland flow of stormwater to the tributary that flows between the Weatherford and Taranaki Sawmills sites, and on this occasion the turbidity of the tributary was found to be elevated. However, the tributary flowing down the opposite side of the site was also found to have an elevated turbidity upstream of the Weatherford site, indicating that due to the conditions prevailing at the time of sampling, this consent exceedance would have resulted in little, if any, adverse effect in the receiving water.

10.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 33.

Table 33 Summary of performance for Consent 4775-1 Weatherford New Zealand Ltd discharge of treated stormwater and washdown water onto land and into stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Limits on chemical composition of discharge	Chemical sampling	Exceedance of suspended solids found in 1 of 7 samples of discharges to tributary
2. Construction of bunding	Site inspection	Yes
3. Discharge cannot cause specified adverse effects beyond mixing zone	Inspections and chemical sampling	Yes
4. Optional review provision re environmental effects	Consent reviewed in 2008, no further opportunities for review	N/A
5. Preparation and maintenance of stormwater management plan	Review of documentation submitted to Council	Yes
Overall assessment of consent compliance and environmental performance in respect of this consent		**Good**

N/A = not applicable

Weatherford New Zealand Limited demonstrated a good level of environmental performance and compliance with consent conditions as defined in Section 1.1.5. Although there was one exceedance of the suspended solids limit on the consent, there would have been no significant environmental impact.

10.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities of Weatherford New Zealand Limited in the 2012-2013 year continues at the same level as in 2011-2012.

This recommendation was implemented.

10.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for water discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

10.4 Recommendation

THAT monitoring programmed for consented activities of Weatherford New Zealand Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

11. Woodwards 2008 Limited

11.1 Introduction

11.1.1 Process description

The site is located at 124 De Havilland Drive, Bell Block; approximately 6.5 km east of New Plymouth city centre. The surrounding land use is predominantly industrial or trade premises; there is also pasture bordering the site to the east which is currently used for grazing livestock.

The open fire-pit is located at the eastern side of the site approximately 75 metres south of De Havilland Drive (Figure 19); industrial premises are currently located to the north, west and south. The closest industrial premises are approximately 115 metres north of the fire pit across De Havilland Drive.

The Waitaha Stream flows through a pipe underneath the site and resurfaces on the Northern side of De Havilland Drive.

Figure 19 Woodwards 2008 Limited's property and fire pit location

The Company generates wood wastes as a result of the firewood business operating from the site. The wastes include timber blocks, bark and sawdust.

The Company aims to burn the wood wastes daily, as they are generated, to prevent the waste from becoming saturated, which would make the potential for offsite effects harder to manage. The effects are managed by taking into account wind direction and strength and by also taking into account the ratio of dry to wet material within the pit, before it is lit.

The material incinerated in the open-pit is untreated timber off-cuts/sawdust. No tanalised timber wastes or plastics are incinerated.

There are a number of potential contaminants that are discharged into the air from the combustion of wood products, however in this case these are primarily:

- particulates
- odour and dust
- carbon monoxide

There are also aesthetic effects to be considered.

Particulates

The combustion of wood in the fire-pit may release particulate matter, and it is the fine particles that can adversely affect health. However, the following management practices are implemented to ensure the fire-pit is used efficiently, thereby minimising the potential for any effects:

- supervision during burning;
- using only dry waste-wood for incineration;
- loading only small quantities into the fire-pit;
- using the fire-pit during certain conditions/times of the day;
- Other operative procedures such as visual monitoring of smoke emissions, and staff training / awareness of environmental obligations.

Odour

The primary odour associated with the activity would be the smell of smoke from the burning of waste-wood. However, odours beyond the boundary will not be offensive or objectionable if the operation is managed sensibly.

Carbon monoxide (CO)

CO is produced from the incomplete combustion of wood, and it can adversely affect human health by reducing the amount of oxygen transported to body tissue, resulting in dizziness, weakness and nausea. Effects are avoided by maintaining optimal combustion conditions within the fire-pit.

Aesthetics

Air pollutants as discussed above can contribute to a haze that lowers visibility and raises public concern. With proper management the fire-pit is not expected to impact significantly on visibility.

In summary, provided the activity is conducted in accordance with the recommended special conditions, no significant effects are anticipated.

11.1.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Woodwards 2008 Limited holds air discharge permit **7881-1** to cover discharge of emissions into the air from he combustion of untreated timber wastes. This permit was issued by the Taranaki Regional Council on 17 August 2011 under Section 87(e) of the RMA. It is due to expire on 1 June 2026.

There are 9 special conditions attached to the consent.

Special condition 1 requires the Company to adopt the best practicable option having regard to particular aspects of the management of the operation and wind conditions.

Special condition 2 restricts the material that can be combusted to untreated timber only, and limits the proximity of the fire pit to the property boundary.

Special condition 3 prohibits objectionable or offensive odours beyond the property boundary.

Special condition 4 requires that the activity is supervised at all times and limits the time of day at which the fire may be lit.

Special conditions 5, 6, and 7 control dust deposition, ambient suspended particulates and noxious or toxic contaminants beyond the property boundary.

Special condition 8 is a lapse condition.

Special condition 9 contains provisions for review.

A copy of the consent is attached in Appendix I.

11.2 Results

11.2.1 Inspections

25 September 2012
There was no fire burning at the time of inspection as the inspecting officer was informed that the staff were waiting for ideal wind conditions. It was reported that the site appeared to be well managed.

8 January 2013
The fire pit was in use at the time of inspection. Only timber was being burnt. The wind was from the south west, and it was noted that smoke from the pit was having no effect on neighbouring properties

30 May 2013
The site was inspected following recent heavy rainfall. It was noted that there was no stormwater runoff occurring from the yard and there were no effects noted in the nearby Waitaha stream or tributary. It was found that the fire was burning with only wood off cuts in the fire pit. The fire was noted to be burning hot and clean, with no smoke produced, or off site effects occurring. The site management was satisfactory at the time of inspection.

11.2.2 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the activities of Woodwards 2008 Limited.

11.3 Discussion

11.3.1 Discussion of plant performance

The site was found to be well managed during the year under review. No prohibited wastes were found in the fire pit, and staff were taking wind conditions into consideration before commencing exercise of the consent.

11.3.2 Environmental effects of exercise of consent

No adverse environmental effects were found during the year under review.

11.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 34.

Table 34 Summary of performance for Consent 7881-1, Woodward 2008 Limited's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Adopt best practicable option. Controls over management practices and consideration of wind conditions	Inspection and discussion with consent holder	Yes
2. Combustion of only untreated wood and wood wastes. Fire pit 20 m from boundary	Inspection and discussion with consent holder. Observation of materials in fire pit	Yes
3. Offensive and objectionable odour at site boundary not permitted	Odour surveys during inspection	Yes
4. Supervision of fire. No fires to be lit after 12 noon.	Inspection and observation while council officers in the area	Yes
5. Maximum dust deposition rate of 0.13 /m^2/day	No visible dust emissions reported at the time of inspection. Deposition rate not measured	N/A
6. Maximum suspended particulates of 3 mg/m^3	No visible dust emissions reported at the time of inspection	Yes
7. Prohibits noxious and toxic levels of contaminants beyond the boundary	Periodic inspection of log during inspection and review of documentation submitted to Council	Yes
8. Consent lapses if not exercised by 30 Sept 2016	Consent exercised	N/A
9. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

N/A Not applicable or not assessed

During the period under review, Woodwards 2008 Limited demonstrated a high level of environmental performance and compliance with consent conditions as defined in Section 1.1.5.

11.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities at Woodwards 2008 Limited in the 2012-2013 year continues at the same level as in 2011-2012.

This recommendation was implemented.

11.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for air discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

11.3.6 Exercise of optional review of consent

Resource consent 7881-1 provides for an optional review of the consent in June 2014. Condition 9 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

A recommendation to this effect is presented in Section 11.4 of this report.

11.4 Recommendations

THAT monitoring programmed for consented activities at Woodwards 2008 Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

THAT the option for a review of resource consent 7881-1 in June 2014, as set out in condition 9 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

12. Zelam Limited

12.1 Introduction

12.1.1 Process description

Zelam Limited (formerly Taranaki NuChem Ltd) [Zelam] has manufactured a range of specialised chemical products for the agricultural, horticultural and timber industries at a plant in the Bell Block industrial estate, New Plymouth since 1992. The size of the operation is small and many of the processes are considered to be unprofitable for the larger chemical companies to undertake.

Zelam manufactures a range of chemicals that include 18 plant protectants and growth promotants, 23 herbicides, seven insecticides, seven additives (surface active agents), four sanitation products, and ten wood protection fungicides.

Production is largely by formulation (blending active ingredients and other agents), and the production is based on batch processes (i.e. not continuous).

Three wet scrubbers are the only significant point sources that discharge emissions directly to air. Other processes discharge into the buildings.

A generalised description of the processes is as follows:

Blending with no heat: Process equipment includes an enclosed mixing vessel fitted with a mechanical stirrer and a bottom liquid take-off through a pump. Products formed include biocides and plant growth promotants. These products result from blending operations at ambient temperature. It is claimed there are no air flows or discharges to the air. A minor quantity of water is used in washing and this water is substantially trapped and retained for make-up in the next product run.

Blending with some heat: Products include biocides and wood preservatives. The operation is blending; in the case of the biocides heated with an electrical element to around 60°C. The preservatives are heated by electrical element to about 90°C. There are no air flows, but some discharges to air from the heating of benzalkonium chloride. This vapour is trapped by the hood over the vessel which is connected to a water trap. The system is designed so that all vapours, which are predominantly absorbed water and benzalkonium chloride with some benzyl chloride, dissolve in this trap. Liquid wastes from washing equipment are of the order of 40-60 litres maximum, all of which is retained and returned as make-up for the next run.

Flowables: Process equipment includes an enclosed mixing vessel fitted with a mechanical stirrer and a bottom liquid take-off through a pump to a bead mill. The air space of the mixing vessel is ventilated to a dust trap before discharge to atmosphere within the working space.

The Taratek fungicides are formulated in this process. This blending operation is done at ambient temperature. Air flows during the process are minimal but during extraction of the powdered actives from their drums, and during addition to the mixing vessel, some dust is created.

This is contained by a canopy hood over the mixing vessel and by placing a slotted hood at the lip of the raw material container. A mobile bed spray scrubber is used as make-up water for the next batch. Air volumes are low and set appropriately to suction off all dust laden air at source. Water waste is primarily washdown water, up to 60-80 litres which is retained and used as make-up water.

The only significant discharges to outside air from the plant are from three wet chemical scrubbers, one for the fungicide production shed and one for the insecticide production shed. The third one is a small scrubber for the encapsulation plant in shed five. This scrubber only runs for up to one hour per week and contains no biocides. There are also minor emissions to air from two laboratory fume cupboards and from a wood chip machine.

The gas streams entering the scrubbers contain water vapour, trace amounts of benzyl chloride, and dust. Benzyl chloride is a suspected carcinogen, a lacrimator (irritates mucous membranes), and is potentially corrosive.

Two of the scrubbers are "forced draft" scrubbers which treat the discharges from the insecticide and fungicide manufacture [Shed 2 scrubber], and herbicide manufacture [Shed 3 scrubber]. The gas streams entering these scrubbers contain water vapour and small amounts of dust from the actives ingredients going into the blend. The Company has a procedure in place for the preparation and monitoring of the liquor for these scrubbers to ensure that the consent requirement to maintain the scrubber liquor at a pH of greater than 9 is satisfied. At the time this consent was granted, emissions from the quaternising process were treated by one of the forced draft scrubbers. The main driver for this pH requirement was for the effective treatment (hydrolysis) of the benzyl chloride emissions. An additional scrubber was installed during the 2008-2009 year that was dedicated to the quaternising process, which is no longer undertaken at the site. The pH requirement was retained for the "forced draft' scrubbers, as many of the other actives that might accumulate in the scrubber liquor are deactivated at this pH.

12.1.2 Air discharge permit

Section 15(1)(c) of the RMA stipulates that no person may discharge any contaminant from any industrial or trade premises into air, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations.

Zelam Limited holds air discharge permit **4059-5** to cover discharge of emissions into the air from industrial agri-chemical formulation processes and associated activities. The Taranaki Regional Council originally issued this permit to Taranaki NuChem Limited on 8 February 1995 as a resource consent under Section 87(e) of the RMA. The consent was renewed on 20 December 2000, was transferred to Zelam Limited on 30 November 2006, and renewed again on 13 February 2008 with the same purpose and conditions as consent **4059-4**. An application to vary the consent was received on 24 August 2009 to better reflect the monitoring and control of an improved emission abatement system already in place for the control of benzyl chloride emissions. The varied consent was issued on 1 September 2009. It will expire on 1 June 2026.

The changes to consent related to the amendment of special conditions 7 and 8 to clarify that these conditions related only to the forced draft scrubbers, and the insertion of two new conditions relating to the control and monitoring of the liquor

used in the air displacement scrubber [resulting in the renumbering of the following conditions].

Special condition 1 requires that the consent holder adopts the best practicable option to minimise emissions from the site.

Special condition 2 requires consultation with the Council prior to significant changes to operations at the site that may alter the quantity or nature of contaminants emitted from the site.

Special conditions 3 and 11 [formerly condition 10] limit effects and contaminant concentrations at or beyond the boundary of the site.

Special conditions 4 and 5 limit the concentration of contaminants in the discharge.

Special condition 6 requires the Company to keep an incident log.

Special condition 7 controls the pH of the liquor in the "forced draft" scrubbers, and special condition 9 controls the free amine concentration of the "air displacement "scrubber so that they continue to be effective.

Special conditions 8 and 10 require the Company to monitor the pH of the "forced draft" scrubber liquors and the free amine concentration of the "air displacement" scrubber liquor.

Special condition 12 [formerly condition 10] contains a provision for reviewing the conditions of the consent.

A copy of the permit is attached to this report in Appendix I.

12.2 Results

12.2.1 Inspections

25 September 2012

It was reported that the site appeared to be free of potential contaminants. The fungicide spray area was tidy, and it was noted that the perimeter vegetation appeared to be healthy. A minor odour was noted from the biofilter beds, however no odour was noted off site.

9 January 2013

It was found that the yard area was clean and tidy. All stormwater catchment areas and drains were free of potential contaminants. There were no visible emissions or objectionable odours noted during the inspection. It was reported that the perimeter vegetation was healthy. No odours were detected during an odour survey around the perimeter of the site. It was noted that the biofilter beds had very little odour, which did not cross the site boundary.

30 May 2013
The site was found to be neat and tidy. It was reported that the integrity of the stormwater system was controlled by bunding and shut off valves. There were no odours or other emissions noted during inspection and it was considered that the site was being well managed.

12.2.2 Results of receiving environment monitoring

Prior to site inspections the inspecting officer conducts a survey around the plant perimeter to check for any off-site odours, visible emissions or evidence of effects on the foliage of plants in the vicinity of the site.

During the year under review, no odours were noted around the perimeter of site, and the perimeter vegetation appeared to be healthy.

12.2.3 Data review

Zelam Limited's consent contains requirements for the Company to monitor the pH of the forced draft scrubbers on a weekly basis [special condition 8] and free amine concentration of the air displacement scrubber prior to each production run [special condition 10], and to send this information through to Council in the form of a written report on request.

A summary of the information provided that covers the year under review is shown in Table 35. During the 2011-2012 year, Council was informed that the air displacement scrubber was no longer in use at the site, as the process had been discontinued.

Table 35 Summary of Zelam Limited's scrubber liquor monitoring log for the 2012-2013 monitoring year

	Forced draft scrubber liquors	
	Shed 2 - pH	**Shed 3 - pH**
Consent limit	***Minimum of 9.0***	***Minimum of 9.0***
minimum	9.18	9.11
maximum	11.21	11.18
median	10.23	10.15
number	51	51

The Company's monitoring shows that the scrubber liquors were maintained above the required minimum levels.

12.2.4 Investigations, interventions, and incidents

In the 2012-2013 year, it was not necessary for the Council to undertake significant additional investigations, interventions, or record incidents in respect of the site operated by Zelam Limited.

12.3 Discussion

12.3.1 Discussion of plant performance

Inspections found that general housekeeping were consistently good during the year under review.

Information supplied to Council in relation to the Company's self monitoring of the scrubber liquor pH showed that the scrubber liquors were maintained as per the conditions of the consent.

12.3.2 Environmental effects of exercise of consent

No significant adverse effects were found as a result of the Company's activities. No odours were noted during the off-site odour surveys, and the foliage of the surrounding vegetation was found to have a healthy appearance.

12.3.3 Evaluation of performance

A tabular summary of the Company's compliance record for the year under review is set out in Table 36.

Table 36 Summary of performance for Consent 4059-5, Zelam Limited's discharge of emissions into the air

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Minimisation of emissions to air	Inspection and discussion with consent holder	Yes
2. Consultation prior to alterations to plant or processes	Liaison during visits	Yes
3. Objectionable odour at site boundary not permitted	Odour surveys	Yes
4. Maximum concentration of benzyl chloride	Process not undertaken	N/A
5. Concentration of discharge of particulate matter	No visible emissions at the time of inspection	Yes
6. Immediate notification in the event of incident affecting off-site location	No incidents reported. No incidents found at inspection. No complaints received	Yes
7. pH of forced draft scrubber liquor	Periodic inspection of log during inspection and review of documentation submitted to Council	Yes
8. Monitoring of forced draft scrubber liquor pH	Periodic inspection of log during inspection and review of documentation submitted to Council	Yes
9. Free amine concentration of air displacement scrubber liquor	Process not undertaken	N/A
10. Monitoring of air displacement scrubber liquor free amine concentration	Process not undertaken	N/A

Condition requirement	Means of monitoring during period under review	Compliance achieved?
11. Maximum ground-level concentrations of contaminants beyond boundary	Not monitored during year under review	N/A
12. Optional review provision re environmental effects	Provision for review in June 2014	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		**High**

Overall, during the year under review Zelam Limited demonstrated a high level of environmental performance as defined in Section 1.1.5.

12.3.4 Recommendation from the 2011-2012 Annual Report

In the 2011-2012 Annual Report, it was recommended:

THAT monitoring programmed for consented activities at Zelam Limited in the 2012-2013 year continues at the same level as in 2011-2012.

This recommendation was implemented.

12.3.5 Alterations to monitoring programmes for 2013-2014

In designing and implementing the monitoring programmes for air discharges in the region, the Taranaki Regional Council has taken into account the extent of information made available by previous authorities, its relevance under the RMA, the obligations of the Act in terms of monitoring emissions and discharges and their effects, and subsequently reporting to the regional community, the scope of assessments required at the time of renewal of permits, and the need to maintain a sound understanding of industrial processes within Taranaki emitting to the atmosphere and discharging to the environment.

It is proposed that for 2013-2014, the programme remains unchanged. A recommendation to this effect is attached to this report.

12.3.6 Exercise of optional review of consent

Resource consent 4059-5 provides for an optional review of the consent in June 2014. Condition 12 allows the Council to review the consent, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Based on the results of monitoring in the year under review, and in previous years as set out in earlier annual compliance monitoring reports, it is considered that there are no grounds that require a review to be pursued or grounds to exercise the review option.

A recommendation to this effect is presented in Section 12.4 of this report.

12.4 Recommendations

THAT monitoring programmed for consented activities at Zelam Limited in the 2013-2014 year continues at the same level as in 2012-2013.

THAT the option for a review of resource consent 4059-5 in June 2014, as set out in condition 12 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

13. Catchment unauthorised discharges

In the Waitaha catchment during the year under review, there were three water-related, and eight air-related incidents logged on the Council database. Of these eleven incidents, only three could be substantiated at the time of investigation.

Table 37 Summary of the number of unauthorised incidents discovered and complaints received relating to activities in the Waitaha catchment

Company	Number of substantiated incidents	Number of unsubstantiated complaints
Waitaha catchment joint monitoring programme		
C & O Concrete	0	0
AICA (NZ) Limited	0	0
New Plymouth District Council	0	0
Parker Drilling International of New Zealand	0	0
Symons Property Developments Limited	1 (air)	4 (air)
Taranaki Sawmills Limited	0	0
TBS Coatings Limited	0	3 (air)
Transpacific Industrial Solutions	0	0
Weatherford New Zealand Limited	0	0
Woodwards 2008 Limited	0	0 (air)
Zelam Limited	0	0
Other monitored/consented industries	0	0
Permitted activities	3 (water)	0
Unsourced	0	0
Total	**4**	**7**

Only three of the incidents were linked to the exercise of consents monitored under this programme. There were five additional incidents recorded for Symons Property Developments Limited, however these were related to the discharge of dust from the site, not to their water discharge consent monitored under this programme. Only one of these dust complaints was substantiated at the time of inspection. There were three incidents recorded for TBS Coatings Limited, none of which could be substantiated at the time of investigation. These incidents are discussed in more detail in the individual consent holder sections of this report. The details surrounding the remaining incidents are summarised below.

Meredith Scrap Metals Ltd

23 July 2012

At 12:30 PM, during an industrial sampling run in the Waitaha Catchment, it was found that the discharge of stormwater from a site used for scrap metal storage and processing was in contravention of the Regional Fresh Water Plan (RFWP) for Taranaki. An inspection of the area surrounding the site found that visible hydrocarbons were discharging beyond the site boundary and onto the road, where it flowed into a roadside drain. Samples and photographs were taken (**Error! Reference source not found.**).

Table 38 Sample from unauthorised discharge – overland flow from Merediths Metals 23 July 2013

Sample location	O & G (g/m^3)	Suspended solids (g/m^3)	Temperature (deg C)
GPS E1701598-N/5679061 -Overland flow to De Havilland	13.4	**190**	13.4

Drive road side drain			

Photo 9 Visible sheen, overland flow from Meredith Scrap Metals Ltd 23 July 2014

Hydrocarbons were observed within the Waitaha Stream, however it was not possible to attribute the effect solely to the scrap metal site as other inputs to the stormwater network could have contributed to the visible sheen. The site owner was made aware of the discharge and he agreed to apply sorbent materials to contain the hydrocarbons. Abatement Notice 11844 was issued requiring works to be undertaken to ensure compliance with Rule 29 of the RFWP, and an infringement notice ($750) was issued. Reinspection undertaken during another incident on 8 August 2012 found that the abatement notice was not being complied with. A letter of explanation was received.

8 August 2012

At 11:00 AM, during routine monitoring, it was found that hydrocarbons were discharging into the Waitaha Stream from the New Plymouth District Council stormwater network.

Photo 10 Hydrocarbon discharge to the Waitaha Stream, Meredith Scrap Metal Ltd 8 August 2012

The spill response trailer was mobilised and sorbent booms and pads were installed at the stormwater drain outlet. The catchment was inspected and it was found that an excavator at the rear of a site used for scrap metal storage and processing had discharged sump oil onto the unsealed surface of the site. The oil appeared to have been mobilised during rainfall and discharged into a stormwater drain on the site. The oil was discovered with the site owner present and he immediately engaged a contractor with a sucker truck to remediate the area. The site was the subject of an abatement notice issued during an earlier incident (23 July 2012) and this discharge was in contravention of the abatement notice. A letter of explanation was received and a defence was established.

Toll Kaitaia

On 4 June 2013 at 1:20 PM notification was received regarding a spill of melamine urea formaldehyde (MUF) resin. The spill originated from the failure of a storage bladder on a truck leaving a resin manufacturing site on Corbett Road, Bell Block, which was then transported along SH3 to Mount Messenger. It was reported that the driver noticed the spill at Mount Messenger and drove back to the manufacturing site. An inspection of the route was undertaken. Apart from outside the manufacturing site, no sign of any resin was found. No resin had reached any waterbody. The safety data sheet listed the product as not being ecotoxic. The site Company initiated spill response procedures and recovered the material from areas where the driver had stopped to check on the condition of the load. A spill contingency plan has been requested from the Company that had been transporting the load.

14. Waitaha Stream receiving environment monitoring

14.1 Results of chemical surveys

Two full wet weather surveys were conducted during the year under review, with seven in-stream water quality sites sampled by the Council. All samples were tested for pH, conductivity, oil and grease, and turbidity. Further tests for metals, phosphorus, nitrogen, formaldehyde, and/or phenol were carried out on particular samples depending on the expected potential pollutants from industries in the vicinity of the sampling points. The results of this sampling are presented in Table 39.

Comparison to historical median values shows that the boron concentrations were lower than the historical median, which is well below the high reliability trigger value of 0.37 g/m^3 given in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) for slightly to moderately disturbed ecosystems.

As in previous years, lead, formaldehyde and phenol were not detected during any of the monitoring surveys carried out during the year under review.

Monitoring found no significant changes in the pH or temperature of the stream during the surveys conducted. In the May 2013 survey, the pH change of 0.5 pH units found between De Havilland Drive and the site approximately 120 metres further downstream is on the limit of what is considered acceptable in terms of the potential for a pH change to present a barrier to fish passage. It is noted that the pH of the tributary (WTH000041) is often slightly lower than the Waitaha Stream (WTH000040 and WTH000095).

Table 39 Results of receiving environment sampling of the Waitaha Stream and tributaries, with historical median values for sampling up to 30 June 2012

Parameter		Waitaha Stream													
		Below AICA WTH000013		At DeHavilland Drive WTH000035		Trib at DeHavilland Drive WTH000037		~ 120m d/s DeHavilland Drive WTH000040		Weatherfords trib u/s confluence WTH000041		At old farm access bridge WTH000050		30m d/s Connett Road WTH000095	
23 July 2012	Time (NZST)	10:01	median	10:12	median	10:08	median	10:17	median	10:28	median	11:12	median	11:25	median
Boron	g/m^3	-	-	-	-	-	-	-	-	-	-	0.08	0.05	0.05	0.08
Conductivity	mS/m	12.2	14.1	10.9	13.1	13.0	13.4	11.3	13.2	8.6	13.4	11.2	14.1	10.1	14.5
Copper (dissolved)	g/m^3	-	-	0.003	0.005	-	0.01^{As}	0.003	0.004	0.004	0.004	0.003	0.004	-	-
Dissolved reactive phosphorus	g/m^3 P	-	-	0.052	0.114	-	-	0.029	0.120	-	-	0.022	0.035	0.021	0.026
Formaldehyde	g/m^3	-	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-
Manganese	g/m^3	-	-	-	-	-	0.05^{As}	-	-	0.40	0.41^{As}	-	-	-	-
Unionised ammonia	g/m^3 N	-	0.00009	0.00083	0.00067	-	-	0.00065	0.00058	-	-	-	-	0.00048	0.00068
Ammoniacal nitrogen	g/m^3 N	-	0.032	0.377	0.238	-	-	0.378	0.271	-	-	-	-	0.292	0.318
Nickel	g/m^3	-	-	-	-	-	-	-	-	<0.02	0.02^{As}	-	-	-	-
Oil and grease	g/m^3	b	<0.5	b	<0.5	b	1.0	b	1.0	<0.5	0.6	b	0.6	0.6	1.1
Lead (acid soluble)	g/m^3	-	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-
pH	pH	6.5	6.7	6.9	6.8	6.6	6.8	6.8	6.8	6.5	6.6	6.8	6.9	6.8	6.9
Phenol	g/m^3	-	<0.02	<0.02	<0.02	-	-	-	-	-	-	-	-	-	-
Temperature	Deg.C	13.8	14.8	12.6	14.8	13.0	14.8	12.4	15.1	11.5	14.2	12.1	15.0	11.9	14.8
Turbidity	NTU	22	48	64	58	100	71	74	79	190	77	120	55	190	105
Zinc (dissolved)	g/m^3	-	-	0.102	0.086	-	0.063^{As}	0.078	0.115	0.304	0.137	0.101	0.094	-	-

Parameter		Waitaha Stream													
		Below AICA WTH000013		At DeHavilland Drive WTH000035		Trib at DeHavilland Drive WTH000037		~ 120m d/s DeHavilland Drive WTH000040		Weatherfords trib u/s confluence WTH000041		At old farm access bridge WTH000050		30m d/s Connett Road WTH000095	
17 May 2013	Time (NZST)	10:15		10:27		10:25		10:35		10:45		11:00		12:15	
Boron	g/m³	-	-	-	-	-	-	-	-	-	-	0.04	0.05	0.04	0.08
Conductivity	mS/m	13.2	14.1	1.6	13.1	16.4	13.4	19.8	13.2	23.9	13.4	20.2	14.1	7.4	14.5
Copper (dissolved)	g/m³	-	-	0.002	0.005	-	0.01[As]	<0.001	0.004	<0.001	0.004	<0.001	0.004	-	-
Dissolved reactive phosphorus	g/m³ P	-	-	0.027	0.114	-	-	0.047	0.120	-	-	0.014	0.035	0.184	0.026
Formaldehyde	g/m³	<0.1	<0.1	-	<0.1	-	-	-	-	-	-	-	-	-	-
Manganese	g/m³	-	-	-	-	-	0.05[As]	-	-	1.09	0.41[As]	-	-	-	-
Unionised ammonia	g/m³ N	0.00002	0.00009	0.00007	0.00067	-	-	0.00191	0.00058	-	-	-	-	0.00179	0.00068
Ammoniacal nitrogen	g/m³ N	0.018	0.032	0.064	0.238	-	-	0.550	0.271	-	-	-	-	0.535	0.318
Nickel	g/m³	-	-	-	-	-	-	-	-	<0.02	0.02[As]	-	-	-	-
Oil and grease	g/m³	b	<0.5	b	<0.5	b	1.0	b	1.0	b	0.6	b	0.6	b	1.1
Lead (acid soluble)	g/m³	-	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-	-
pH	pH	6.5	6.7	6.5	6.8	6.8	6.8	7.0	6.8	6.6	6.6	6.9	6.9	7.0	6.9
Phenol	g/m³	<0.02	<0.02	-	<0.02	-	-	-	-	-	-	-	-	-	-
Temperature	Deg.C	15.2	14.8	15.9	14.8	14.9	14.8	15.6	15.1	15.8	14.2	15.4	15.0	15.2	14.8
Turbidity	NTU	8.1	48	5.3	58	4.8	71	21	79	27	77	8.8	55	180	105
Zinc (dissolved)	g/m³	-	-	0.038	0.086	-	0.063[As]	0.029	0.115	0.034	0.137	0.020	0.094	-	-

Key: b parameter not determined, no visible hydrocarbon sheen and no odour
As Acid soluble metal

Historically the dissolved reactive phosphorus concentration has generally been elevated in the upper to middle catchment, reducing at the site below the Connett Road bridge. This is likely to be due to farming activities above the headwaters of the catchment, and the presence of a horticultural supply business upstream of De Havilland Drive. During the July 2012 survey, the dissolved reactive phosphorus concentration decreased in a downstream direction, and was below the historical median at each monitoring site. At the time of the May 2013 survey the dissolved reactive phosphorous was low, less than the detection limit below the agricultural area and the horticultural supply business. Levels increased slightly in the mid catchment below Weatherford's site, with a further increase below the Connett Road discharges. The site below Connett Road was the only site at which the dissolved reactive phosphorous concentration was found to be above the historical median, and this result was a new maximum for this monitoring site.

During the July 2012 survey the ammoniacal nitrogen was elevated below De Havilland Drive, remaining stable alongside the Weatherford's and Taranaki Sawmills sites, and decreasing slightly downstream of the Connett Road discharges The concentration was below median only at the Connett Road site. During the May 2013 survey the ammoniacal nitrogen concentrations were low at the sites below AICA and at De Havilland Drive, with an increase observed 120 metres below De Havilland Drive that extended to the Connett Road monitoring site. The ammoniacal nitrogen concentration found at both of these sites was the second highest on record. It is noted that although, where elevated, the ammoniacal nitrogen concentrations were high enough to support the growth of periphyton, the concentrations of the

more toxic unionised ammonia remained low. The storm pond records provided by AICA limited show that the Company was not discharging at the time of either of the sampling surveys undertaken during the year under review.

The oil and grease concentrations found in the stream during the year under review were low. Although slight sheen were noted in the samples collected from the Weatherford tributary and below Connett Road during the July 2013 survey, analysis found that the oil and grease concentration was close to or below the limit of detection of the test. The source of the visible sheen in the receiving water at the site below the Connett Road discharges was sourced to Meredith Scrap Metals, and this was logged as an unauthorised discharge. The outcome of the investigation is reported in Section 13.

There are several guidelines for zinc and copper for assessing water quality in terms of suitability for sustaining aquatic life. The United States Environmental Protection Agency (USEPA), in defining metals criteria for protection of freshwater aquatic life, has adopted the use of dissolved metals as most closely approximating the bio available fraction of metal in the water column. Previously, water quality criteria were based on total recoverable metal concentration.

The water quality criteria for dissolved copper and zinc, for water of hardness 50 g/m^3 $CaCO_3$, are 0.005 g/m^3 for Cu and 0.058 g/m^3 for Zn respectively as a 4 day average, for chronic (long term) exposure. The corresponding criteria for acute (4-hour) exposure are 0.007 g/m^3 for Cu and 0.064 g/m^3 for Zn. Only the acute criteria are applicable to wet weather sampling results, whereas both chronic and acute exposure criteria would be applicable to dry weather sampling results.

Dissolved copper was found to be below the acute and chronic criteria on at all sites monitored for this parameter during both surveys.

The acute exposure criterion for dissolved zinc was exceeded at only one monitored site during the 2011-2012 year. The dissolved zinc concentration was at an acceptable level immediately below the Weatherford's site, but had increased to above the acute exposure criterion 270 metres further downstream.

Nickel and manganese determinations were made retrospectively on retained preserved samples. Although the detection limit for these initial Nickel determinations is above the ANZECC low reliability trigger limit of 0.011 g/m^3, the results confirmed that this contaminant was not present at high concentrations. The Manganese concentrations were found to be well below the ANZECC trigger limit of 1.9 g/m^3.

During the July 2012 survey the turbidity of the Waitaha Stream itself, although elevated, was at or below median at all sites above WTH000050, which is located halfway along the boundary of the Taranaki Sawmills site. The tributaries at De Havilland Drive (above and to the west of Weatherford) and the Weatherford's tributary below the eastern site boundary were found to have turbidities that were above median. The discharge from Weatherford's lower interceptor was relatively low in suspended solids, however the overland flow of stormwater to the tributary had a suspended solids concentration of 240 g/m^3. This may have contributed to the elevated turbidity in the tributary below the site, although this can not be confirmed

as no sampling is currently programmed in the Weatherford's tributary above the Weatherford's site. The elevation in the turbidity of the tributary above the western boundary of the site (WTH000037) indicates that the Weatherford's tributary may also have had elevated turbidity above their site.

An increase in turbidity was also observed downstream of the Taranaki Sawmills and Connett Road discharges. The suspended solids concentration in these discharges were all elevated at the time of sampling, however as the quality of these discharges resulted an increase in what was already a highly turbid stream, this is not considered to be a significant effect.

During the May 2013 survey the turbidity of the stream and tributary at De Havilland Drive was very low, compared to historical results, with slightly higher turbidities observed in the Weatherford's tributary and the stream close to the downstream boundary of the Weatherford's site. At the time of this survey there was no discharge occurring from the Weatherford's lower interceptor and the suspended solids concentration of the overland stormwater was compliant with consent conditions. The increase in turbidity had been assimilated by the time the flow reached the old farm access bridge site, but a further larger increase was observed 30 metres downstream of Connett Road. The suspended solids concentrations of the tributary below Taranaki Sawmills and the New Plymouth District Council stormwater discharge on the true left bank of the stream at Connett Road were relatively low, however the Connett Road stormwater discharge on the true right bank contained 200 g/m^3 of suspended solids. This and the progression of the rainfall event were the most likely contributors to the increase in the turbidity of the Waitaha Stream observed below Connett Road.

The Waitaha Stream has a small catchment area and is coming under increasing pressure as the land upstream of Devon Road is further developed. In order to improve the water quality of the stream, the Council will be focusing on ensuring special conditions on existing consents are adequate; identifying any sites that require discharge consents; and educating site operators in the catchment to ensure that they are aware of their obligations under Rule 23 of the Regional Freshwater Plan for permitted stormwater discharges (see Appendix III).

15. Summary of recommendations

1. THAT monitoring programmed for consented activities of AICA (NZ) Limited in the 2013-2014 year continues at the level programmed for 2012-2013.

2. THAT monitoring programmed for consented activities of C&O Concrete Products Limited in the 2013-2014 year continues at the level programmed for 2012-2013.

3. THAT monitoring programmed for consented activities of New Plymouth District Council in this catchment in the 2013-2014 year continues at the same level programmed for 2012-2013.

4. THAT the option for a review of resource consent 0608-3-2 in June 2014, as set out in condition 5 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

5. THAT monitoring programmed for consented activities of Parker Drilling International of New Zealand Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

6. THAT monitoring programmed for the consented activities of Symons Property Development Limited in the 2013-2014 year continues at the same level as programmed for 2012-2013.

7. THAT the option for a review of resource consent 7805-1 in June 2014, as set out in condition 13 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

8. THAT monitoring programmed for consented activities of Taranaki Sawmills Limited in the 2013-2014 year continues at the same level as programmed for 2012-2013.

9. THAT the option for a review of resource consent 4096-2 in June 2014, as set out in condition 21 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

10. THAT monitoring programmed for consented activities of TBS Coatings Limited in the 2013-2014 year continues at the same level as in 2012-2013.

11. THAT the option for a review of resource consent 4056-2 in June 2014, as set out in condition 21 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

12. THAT monitoring of the stormwater discharge from the Transpacific Industrial Solutions site in the 2013-2014 year continues at the same level as programmed for 2012-2013.

13. THAT monitoring programmed for consented activities of Weatherford New Zealand Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

14. THAT monitoring programmed for consented activities at Woodwards 2008 Limited in the 2013-2014 year continues at the same level as programmed in 2012-2013.

15. THAT the option for a review of resource consent 7881-1 in June 2014, as set out in condition 9 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

16. THAT monitoring programmed for consented activities at Zelam Limited in the 2013-2014 year continues at the same level as in 2012-2013.

17. THAT the option for a review of resource consent 4059-5 in June 2014, as set out in condition 12 of the consent, not be exercised, on the grounds that historical monitoring has found that the existing conditions are adequate.

Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Biomonitoring	Assessing the health of the environment using aquatic organisms.
BOD	Biochemical oxygen demand. A measure of the presence of degradable organic matter, taking into account the biological conversion of ammonia to nitrate.
BODF	Biochemical oxygen demand of a filtered sample.
Bund	A wall around a tank to contain its contents in the case of a leak.
CBOD	Carbonaceous biochemical oxygen demand. A measure of the presence of degradable organic matter, excluding the biological conversion of ammonia to nitrate.
Condy	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m.
Cu*	Copper.
DG	Dangerous goods.
DRP	Dissolved reactive phosphorus.
Fesh	Elevated flow in a stream, such as after heavy rainfall.
g/m^3	Grams per cubic metre, and equivalent to milligrams per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures.
IBC	Intermediate bulk container, a 1000L plastic container used for the temporary storage of liquids.
l/s	Litres per second.
MCI	Macroinvertebrate community index; a numerical indication of the state of biological life in a stream that takes into account the sensitivity of the taxa present to organic pollution in stony habitats.
mS/m	Millisiemens per metre.
Mixing zone	The zone below a discharge point where the discharge is not fully mixed with the receiving environment. For a stream, conventionally taken as a length equivalent to 7 times the width of the stream at the discharge point
NH_4	Ammonium, normally expressed in terms of the mass of nitrogen (N).
NH_3	Unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water.
O&G	Oil and grease, defined as anything that will dissolve into a particular organic solvent (e.g. hexane). May include both animal material (fats) and mineral matter (hydrocarbons).
Pb*	Lead.
pH	A numerical system for measuring acidity in solutions, with 7 as neutral. Numbers lower than 7 are increasingly acidic and higher than 7 are increasingly alkaline. The scale is logarithmic i.e. a change of 1 represents a ten-fold change in strength. For example, a pH of 4 is ten times more acidic than a pH of 5.
Physicochemical	Measurement of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment.
PM_{10}	Relatively fine airborne particles (less than 10 micrometre diameter).

Resource consent	Refer Section 87 of the RMA. Resource consents include land use consents (refer Sections 9 and 13 of the RMA), coastal permits (Sections 12, 14 and 15), water permits (Section 14) and discharge permits (Section 15).
RMA	Resource Management Act 1991 and including all subsequent amendments.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.
UI	Unauthorised Incident.
UIR	Unauthorised Incident Register – contains a list of events recorded by the Council on the basis that they may have the potential or actual. environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
Zn*	Zinc.

*an abbreviation for a metal or other analyte may be followed by the letters 'As', to denote the amount of metal recoverable in acidic conditions. This is taken as indicating the total amount of metal that might be solubilised under extreme environmental conditions. The abbreviation may alternatively be followed by the letter 'D', denoting the amount of the metal present in dissolved form rather than in particulate or solid form.

For further information on analytical methods, contact the Council's laboratory.

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Appendix I

Resource consents held by companies in the Waitaha catchment (alphabetical order)

Consent 2367-2

TARANAKI
REGIONAL
COUNCIL

PRIVATE BAG 713
47CLOTEN ROAD
STRATFORD
NEWZEALAND
PHONE 0-6-765 7127
FAX 0-6-765 5097

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Dynea NZ Ltd Private Bag 2055 NEW PLYMOUTH .
Consent Granted Date:	20 March 1996

Conditions of Consent

Consent Granted:	To discharge up to 150 litres/second of stormwater from a chemical manufacturing complex into a swamp at the headwaters of an unnamed tributary of the Waitaha Stream at or about GR: Q19:111-396
Expiry Date:	1 June 2014
Review Date(s):	June 2002, June 2008
Site Location:	149 Corbett Road, Bell Block, New Plymouth
Legal Description:	Pt 6B DP 1414 Lots 1 & 2 DP 16173 Blk VII Waitara SD
Catchment:	Mangati
Tributary:	Waitaha

For General, Standard and Special conditions
pertaining to this consent **please** *see reverse side of this document*

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed **by** the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent;
ii) charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
ii) charges authorised by regulations.

Special conditions

1) That the following limits shall not be exceeded in the discharge:

pH [within the range]	6-9
Suspended solids	100 gm"
Oil & grease [Freon extractable]	15 gm"
Phenol	1 gm^{-3}
Ammonia-nitrogen	10 gm"
Formaldehyde	1 gm"

2) That allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to all or any of the following effects in the receiving water:

(i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
(ii) any conspicuous change in the colour or visual clarity;
(iii) any emission of an objectionable odour;
(iv) any significant adverse effects on aquatic life, habitats, or ecology;
(v) the rendering of the water unsuitable for consumption by farm animals;
(vi) any undesirable biological growths.

3) That the consent holder shall maintain a contingency plan, to the satisfaction of the Chief executive, Taranaki Regional Council, for action to be taken in the event of accidental discharge or spillage of contaminants.

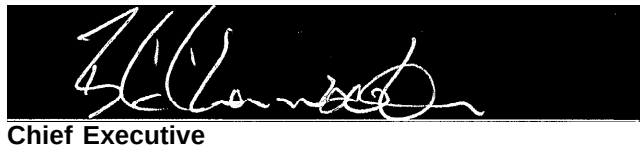
4) That the consent holder shall keep records of the chemical monitoring of the stormwater basins and the frequency and volume of discharges as a result of exercising this consent, and shall make such records available to the Taranaki Regional Council upon request.

5) That no chemicals shall be stored within the carpark catchment area which discharges directly to the Waitaha Stream.

6) That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Transferred at Stratford on 21 June 2001

For and on behalf of
Taranaki Regional Council



Chief Executive

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Aica NZ Limited 149 Corbett Road Bell Block NEW PLYMOUTH 4373
Decision Date (Change):	7 May 2002
Commencement Date (Change):	7 May 2002 (Granted: 20 March 1996)

Conditions of Consent

Consent Granted:	To discharge up to 150 litres/second of stormwater from a chemical manufacturing complex into a wetland at the headwaters of an unnamed tributary of the Waitaha Stream
Expiry Date:	1 June 2014
Review Date(s):	June 2002, June 2008
Site Location:	149 Corbett Road, Bell Block, New Plymouth
Legal Description:	Pt 6B DP 1414 Lots 1 & 2 DP 16173 Blk VII Waitara SD
Grid Reference (NZTM)	1701011E-5677852N
Catchment:	Waitaha

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

   i) the administration, monitoring and supervision of this consent; and
   ii) charges authorised by regulations.

Special conditions

Condition 1 (changed)

1. The following limits shall not be exceeded in the discharge:

pH (within the range)	6-9	
Suspended solids	100	gm^{-3}
Oil & grease (Freon extractable)	15	gm^{-3}
Phenol	1	gm^{-3}
Ammonia - nitrogen	20	gm^{-3}
Formaldehyde	2	gm^{-3}

Conditions 2 to 6 (unchanged)

2. Allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to any of the following effects in the receiving water:

   i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   ii) any conspicuous change in the colour or visual clarity;
   iii) any emission of an objectionable odour;
   iv) any significant adverse effects on aquatic life, habitats, or ecology;
   v) the rendering of the water unsuitable for consumption by farm animals;
   vi) any undesirable biological growths.

3. The consent holder shall maintain a contingency plan, to the satisfaction of the Chief Executive, Taranaki Regional Council, for action to be taken in the event of accidental discharge or spillage of contaminants.

4. The consent holder shall keep records of the chemical monitoring of the stormwater basins and the frequency and volume of discharges as a result of exercising this consent, and shall make such records available to the Taranaki Regional Council upon request.

5. No chemicals shall be stored within the carpark catchment area which discharges directly to the Waitaha Stream.

6. The Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of a review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Transferred at Stratford on 2 April 2013

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Discharge Permit

Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

Name of Consent Holder:	Aica NZ Limited 149 Corbett Road Bell Block NEW PLYMOUTH 4373
Decision Date (Change):	5 October 2009
Commencement Date (Change):	5 October 2009 (Granted: 12 June 1996)

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the manufacture of formaldehyde solution and urea formaldehyde resin, together with emissions from associated activities at the plant premises
Expiry Date:	1 June 2014
Site Location:	Corbett Road, Bell Block
Legal Description:	Pt 6B DP 1414 Lots 1 & 2 DP 16173 Blk VII Waitara SD
Grid Reference (NZTM)	1701049E-5677952N

For General, Standard and Special conditions
pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Conditions 1 and 2 (changed)

1. That the total emissions of formaldehyde from all processes on the site shall not exceed in aggregate 1.2 kg/hr as formaldehyde.

2. That the total emissions of formaldehyde from either the main stack of the multi-purpose plant or the vent of the formaldehyde absorber tower of the formaldehyde synthesis plant shall not exceed 1.0 kg/hr as formaldehyde.

Condition 3 (unchanged)

3. That the exercise and the effects of the exercise of this consent shall be monitored to the satisfaction of the Chief Executive, Taranaki Regional Council.

Conditions 4 and 5 (new)

4. Without limitation to condition 3, the consent holder shall have emissions tests conducted on discharges from the "formaldehyde absorber tower", and any other treatment stack at the request of the Chief Executive, Taranaki Regional Council, to demonstrate compliance with special conditions 1 and 2. These tests shall;

a) be conducted by 1 June 2010 and every twelve months thereafter for the duration of the consent, and

b) comprise not less than three separate samples taken during operating conditions that give rise to maximum emissions from the stack, and

c) be reported to the Chief Executive, Taranaki Regional Council, within 20 working days of the samples being taken. The report shall include the results of the tests, the relevant plant operating parameters over the period of each test, all the raw data and all the calculations.

5. The emissions tests referred to in special condition 4 shall be carried out in accordance with USEPA Method 0011, or any other equivalent method subject to the written approval of the Chief Executive, Taranaki Regional Council, and these tests shall be performed by a party independent from the consent holder, appropriately qualified and experienced in such testing to the satisfaction of the Chief Executive, Taranaki Regional Council.

Condition 6 (unchanged, formerly condition 4)

6. That the consent holder shall at all times operate, maintain, supervise and monitor all processes authorised by this consent so that emissions are reduced to a practicable minimum.

Condition 7 (changed, formerly condition 5)

7. That all emissions of formaldehyde to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of formaldehyde at any point beyond the site boundary do not exceed 0.10 mg/m^3 (ambient conditions) at any time.

Conditions 8 to 12 (unchanged, formerly conditions 6 to 10)

8. That all emissions of phenol to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of phenol at any point beyond the site boundary do not exceed 0.63 mg/m^3 (ambient conditions) at any time.

9. That all emissions of resorcinol to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of resorcinol at any point beyond the site boundary do not exceed 1.5 mg/m^3 (ambient conditions) at any time.

10. That this consent may be reviewed by the Chief Executive, Taranaki Regional Council, at any time if there are grounds for holding that the exercise of this consent may relate to any significant adverse effects on any ecosystems including, but not limited to disturbance to habitats, plants, animals, microflora or microfauna.

11. That prior to undertaking any alteration at the plant, processes, or operations as specified in the application and supporting documentation lodged with the Taranaki Regional Council for this consent, which may significantly change the nature or quantity of contaminants discharged from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991.

12. That the consent holder shall provide to the Chief Executive, Taranaki Regional Council, by 30 June 1997, and again by 30 June 2001, and every six years thereafter, a written report:

    a) reviewing any technological advances in the reduction or mitigation of discharges to air from the site, how these might be applicable and/or implemented at the site, and the costs and benefits of these advances; and

    b) addressing any other issue relevant to the minimisation or mitigation of discharges to air from the site that the Chief Executive, Taranaki Regional Council, considers should be included; and

    c) detailing an inventory of discharges to air from the site of such contaminants as the Chief Executive, Taranaki Regional Council, may from time to time specify following consultation with the consent holder.

Condition 13 (changed, formerly condition 11)

13. That the consent holder shall at all times adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the discharges into the air from the site. `Best practicable option' shall be determined by the Taranaki Regional Council, taking into account the information supplied by the consent holder under special condition 12 of this consent, and following review as set out under special condition 14 of this consent.

Condition 14 (unchanged, formerly condition 12)

14. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 1998 and/or June 2002 and/or June 2008 for the purpose of:

    a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered and which it is appropriate to deal with at the time of review; or

    b) requiring the holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by any discharge to air; or

    c) to alter, add, or delete limits on discharge or ambient concentrations of any contaminant or contaminants.

Transferred at Stratford on 2 April 2013

For and on behalf of
Taranaki Regional Council

_____

Director-Resource Management

Consent 4021-2

TARANAKI REGIONAL COUNCIL

CHIEF EXECUTIVE
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STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number on all correspondence

Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Dynea NZ Limited Private Bag 2055 NEW PLYMOUTH 4342
Change To Conditions Date:	5 October 2009 [Granted: 12 June 1996]

Conditions of Consent

Consent Granted:	To discharge emissions into the air from the manufacture of formaldehyde solution and urea formaldehyde resin, together with emissions from associated activities at the plant premises at or about (NZTM) 1701049E-5677952N
Expiry Date:	1 June 2014
Site Location:	Corbett Road, Bell Block
Legal Description:	Pt 6B DP 1414 Lots 1 & 2 DP 16173 Blk VII Waitara SD

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Conditions 1 and 2 [changed]

1. That the total emissions of formaldehyde from all processes on the site shall not exceed in aggregate 1.2 kg/hr as formaldehyde.

2. That the total emissions of formaldehyde from either the main stack of the multi-purpose plant or the vent of the formaldehyde absorber tower of the formaldehyde synthesis plant shall not exceed 1.0 kg/hr as formaldehyde.

Condition 3 [unchanged]

3. That the exercise and the effects of the exercise of this consent shall be monitored to the satisfaction of the Chief Executive, Taranaki Regional Council.

Conditions 4 and 5 [new]

4. Without limitation to condition 3, the consent holder shall have emissions tests conducted on discharges from the "formaldehyde absorber tower", and any other treatment stack at the request of the Chief Executive, Taranaki Regional Council, to demonstrate compliance with special conditions 1 and 2. These tests shall;

a) be conducted by 1 June 2010 and every twelve months thereafter for the duration of the consent, and

b) comprise not less than three separate samples taken during operating conditions that give rise to maximum emissions from the stack, and

c) be reported to the Chief Executive, Taranaki Regional Council, within 20 working days of the samples being taken. The report shall include the results of the tests, the relevant plant operating parameters over the period of each test, all the raw data and all the calculations.

5. The emissions tests referred to in special condition 4 shall be carried out in accordance with USEPA Method 0011, or any other equivalent method subject to the written approval of the Chief Executive, Taranaki Regional Council, and these tests shall be performed by a party independent from the consent holder, appropriately qualified and experienced in such testing to the satisfaction of the Chief Executive, Taranaki Regional Council.

Condition 6 [unchanged, formerly condition 4]

6. That the consent holder shall at all times operate, maintain, supervise and monitor all processes authorised by this consent so that emissions are reduced to a practicable minimum.

Condition 7 [changed, formerly condition 5]

7. That all emissions of formaldehyde to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of formaldehyde at any point beyond the site boundary do not exceed 0.10 mg/m^3 [ambient conditions] at any time.

Conditions 8 to 12 [unchanged, formerly conditions 6 to 10]

8. That all emissions of phenol to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of phenol at any point beyond the site boundary do not exceed 0.63 mg/m^3 [ambient conditions] at any time.

9. That all emissions of resorcinol to the atmosphere under all operational conditions shall be so controlled and discharged as to ensure that maximum ground level concentrations of resorcinol at any point beyond the site boundary do not exceed 1.5 mg/m^3 [ambient conditions] at any time.

10. That this consent may be reviewed by the Chief Executive, Taranaki Regional Council, at any time if there are grounds for holding that the exercise of this consent may relate to any significant adverse effects on any ecosystems including, but not limited to disturbance to habitats, plants, animals, microflora or microfauna.

11. That prior to undertaking any alteration at the plant, processes, or operations as specified in the application and supporting documentation lodged with the Taranaki Regional Council for this consent, which may significantly change the nature or quantity of contaminants discharged from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991.

12. That the consent holder shall provide to the Chief Executive, Taranaki Regional Council, by 30 June 1997, and again by 30 June 2001, and every six years thereafter, a written report:

    a) reviewing any technological advances in the reduction or mitigation of discharges to air from the site, how these might be applicable and/or implemented at the site, and the costs and benefits of these advances; and

    b) addressing any other issue relevant to the minimisation or mitigation of discharges to air from the site that the Chief Executive, Taranaki Regional Council, considers should be included; and

    c) detailing an inventory of discharges to air from the site of such contaminants as the Chief Executive, Taranaki Regional Council, may from time to time specify following consultation with the consent holder.

Condition 13 [changed, formerly condition 11]

13. That the consent holder shall at all times adopt the best practicable option to prevent or minimise any actual or likely adverse effect on the environment associated with the discharges into the air from the site. `Best practicable option' shall be determined by the Taranaki Regional Council, taking into account the information supplied by the consent holder under special condition 12 of this consent, and following review as set out under special condition 14 of this consent.

Condition 14 [unchanged, formerly condition 12]

14. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 1998 and/or June 2002 and/or June 2008 for the purpose of:

    a) dealing with any significant adverse effect on the environment arising from the exercise of the consent which was not foreseen at the time the application was considered and which it is appropriate to deal with at the time of review; or

    b) requiring the holder to adopt the best practicable option to remove or reduce any adverse effect on the environment caused by any discharge to air; or

    c) to alter, add, or delete limits on discharge or ambient concentrations of any contaminant or contaminants.

Signed at Stratford on 5 October 2009

For and on behalf of
Taranaki Regional Council

Director-Resource Management

TRK954777

TARANAKI REGIONAL COUNCIL

PRIVATE BAG 713
47 CLOTON ROAD
STRATFORD
NEW ZEALAND
PHONE 0-6-765 7127
FAX 0-6-765 5097

DISCHARGE PERMIT

Pursuant to the RESOURCE MANAGEMENT ACT 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder: C & O CONCRETE PRODUCTS LIMITED
PO BOX 7141 NEW PLYMOUTH

Change to Conditions Date: 8 September 1997

CONDITIONS OF CONSENT

Consent Granted: TO DISCHARGE UP TO 40 LITRES/SECOND OF STORMWATER FROM A CONCRETE PRODUCTS MANUFACTURING PREMISES INTO THE WAITAHA STREAM AT OR ABOUT GR: Q19:112-409

Expiry Date: 1 June 2014 [Granted: 5 September 1995]

Review Date[s]: June 2002 and June 2008

Site Location: CONNETT ROAD EAST BELL BLOCK

Legal Description: LOT 25 DP12988 BELL DIST BLK II PARITUTU SD

Catchment: WAITAHA 393.002

Change to Sp cond
1- 14/2/000
See memo.

For General, Standard and Special Conditions pertaining to this consent please see reverse side of this document.

TRK954777

General conditions

a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and

ii) charges authorised by regulations.

Special conditions

1. THAT the following limits shall not be exceeded in the discharge:

suspended solids 25 g/m^3 and

THAT allowing for a mixing zone of 10 metres extending downstream from the Connett Road drain, the discharge shall not give rise to a pH outside of the range 6.0-8.5.

2. THAT allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to all or any of the following effects in the receiving water:

i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;

ii any conspicuous change in the colour or visual clarity;

iii) any emission of an objectionable odour;

iv) any significant adverse effects on aquatic life, habitats, or ecology;

v) any undesirable biological growths.

3. THAT the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Signed at Stratford on 8 September 1997

For and on behalf of
TARANAKI REGIONAL COUNCIL

DIRECTOR–RESOURCE MANAGEMENT

Consent 0608-3

TARANAKI REGIONAL COUNCIL

CHIEF EXECUTIVE
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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	New Plymouth District Council Private Bag 2025 NEW PLYMOUTH 4342
Consent Granted Date:	10 June 2008

Conditions of Consent

Consent Granted:	To discharge stormwater from the Connett Road industrial subdivision into the Waitaha Stream at or about (NZTM) 1701124E-5678621N to 1700868E-5679211N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	175 Connett Road, Bell Block
Legal Description:	Lots 58 & 95 DP 14599
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. Notwithstanding any other condition of this consent, the consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The consent holder shall prevent, where possible, or mitigate any erosion occurring as a result of the exercise of this consent.

3. After allowing for a mixing zone of 10 metres extending downstream of the discharge, the discharge shall not give rise to any of the following effects in the receiving waters of the Waitaha Stream:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life.

4. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

5. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 10 June 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

TRK950609

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DISCHARGE PERMIT

Pursuant to the RESOURCE MANAGEMENT ACT 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	NEW PLYMOUTH DISTRICT COUNCIL PRIVATE BAG 2025 NEW PLYMOUTH
Renewal Granted Date:	6 December 1995

CONDITIONS OF CONSENT

Consent Granted:	TO DISCHARGE UP TO 1200 LITRES/SECOND OF STORMWATER FROM AN INDUSTRIAL SUBDIVISION INTO AN UNNAMED TRIBUTARY OF THE WAITAHA STREAM AT OR ABOUT GR: Q19:108-406
Expiry Date:	1 June 2014
Review Date[s]:	June 2002 and June 2008
Site Location:	CORBETT ROAD BELL BLOCK
Legal Description:	PT SEC 4 DP4954 BLK II PARITUTU SD
Catchment:	WAITAHA 393.002
Tributary:	UNNAMED TRIBUTARY

For General, Standard and Special Conditions pertaining to this consent please see reverse side of this document.

TRK950609

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GENERAL CONDITIONS

(a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

(b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

(c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

(i) the administration, monitoring and supervision of this consent;
(ii) charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
(iii) charges authorised by regulations.

SPECIAL CONDITIONS

1) THAT the following limits shall not be exceeded in the discharge:

Oil and grease [Freon extractable]	$<15\ gm^{-3}$
pH in the range	6.0 - 8.5
Suspended solids	$100\ gm^{-3}$

2) THAT allowing for a mixing zone of 10 metres extending downstream of the discharge point, the discharge shall not give rise to all or any of the following effects in the receiving water:

(i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
(ii) any conspicuous change in the colour or visual clarity;
(iii) any emission of an objectionable odour;
(iv) any significant adverse effects on aquatic life, habitats, or ecology;
(v) any undesirable biological growths.

3) THAT the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Signed at Stratford on 6 December 1995

For and on behalf of
TARANAKI REGIONAL COUNCIL

GENERAL MANAGER

TRK964988

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TARANAKI REGIONAL COUNCIL

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DISCHARGE PERMIT

Pursuant to the RESOURCE MANAGEMENT ACT 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	PARKER DRILLING INTERNATIONAL OF NEW ZEALAND LIMITED PO BOX 3194 FITZROY NEW PLYMOUTH
Consent Granted Date:	24 July 1996

CONDITIONS OF CONSENT

Consent Granted:	DISCHARGE UP TO 110 LITRES/SECOND OF STORMWATER AND 0.2 CUBIC METRES/ DAY OF TREATED WASHDOWN WATER FROM A STORAGE YARD FOR HYDROCARBON EXPLORATION DRILLING EQUIPMENT INTO AN UNNAMED TRIBUTARY OF THE WAITAHA STREAM AT OR ABOUT GR: Q19:107-408
Expiry Date:	1 June 2014
Review Date[s]:	June 2002 and June 2008
Site Location:	58 CORBETT ROAD BELL BLOCK
Legal Description:	LOT 2 DP16891 PT SECS 11 & 15 BELL DIST BLK II PARITUTU SD
Catchment:	WAITAHA 393.002
Tributary:	UNNAMED TRIBUTARY

For General, Standard and Special Conditions pertaining to this consent please see reverse side of this document.

COPY

TRK964988

GENERAL CONDITIONS

(a) That on receipt of a requirement from the General Manager, Taranaki Regional Council (hereinafter the General Manager), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

(b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

(c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

(i) the administration, monitoring and supervision of this consent;
(ii) charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
(iii) charges authorised by regulations.

SPECIAL CONDITIONS

1. THAT the following limits shall not be exceeded in the discharge:

Suspended solids	100	mg/L
Oil and grease	15	mg/L
pH [range]	6.0 - 10.0	

This condition shall apply prior to the entry of the discharge into the unnamed tributary of the Waitaha Stream, at a designated sampling point approved by the General Manager, Taranaki Regional Council.

2. THAT allowing for reasonable mixing within a mixing zone extending 10 metres downstream of the discharge pipe, the discharge shall not give rise to any of the following effects in the receiving water:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life, habitats, or ecology.

3. THAT the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the environment.

Signed at Stratford on 24 July 1996

For and on behalf of
TARANAKI REGIONAL COUNCIL

GENERAL MANAGER

TARANAKI REGIONAL COUNCIL
CHIEF EXECUTIVE
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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Symons Property Developments Limited 179 Surrey Hill Road R D 4 NEW PLYMOUTH 4374
	New Address: P O Box 7150 New Plymouth 4341
Decision Date:	9 May 2011
Commencement Date:	9 May 2011

Conditions of Consent

Consent Granted:	To discharge stormwater from a truck depot and pipe cleaning facility into the Waitaha Stream at or about (NZTM) 1700740E-5678991N and 1700804E-5679014N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	141 to 145 Connett Road East, Bell Block, New Plymouth
Legal Description:	Lot 6 DP 373725 Lot 26 DP 376382 and part of Lot 24 DP 376382 subject to survey [Discharge source & site]
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The stormwater discharged shall be from a catchment area not exceeding 3.14 ha.

3. By 13 May 2011, all stormwater from part of Lot 24 DP 376382, as identified in Appendix I attached to this consent, shall be directed for treatment through the stormwater treatment system for discharge in accordance with the special conditions of this permit.

4. Any significant volumes of hazardous substances [e.g. bulk fuel] on site shall be:

   a) contained in a double skinned tank, or
   b) stored in a dedicated bunded area with drainage to sumps, or to other appropriate recovery systems, and not directly to the site stormwater system.

5. Constituents of the discharge shall meet the standards shown in the following table.

Constituent	Standard
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm^{-3}
oil and grease	Concentration not greater than 15 gm^{-3}
chloride	Concentration not greater than 50 gm^{-3}
BOD	Concentration not greater than 5 gm^{-3}

   This condition shall apply before entry of the treated stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

6. After allowing for reasonable mixing, within a mixing zone extending 10 metres downstream of the discharge point, the discharge shall not, either by itself or in combination with other discharges, give rise to any or all of the following effects in the receiving water:

   a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   b) any conspicuous change in the colour or visual clarity;
   c) any emission of objectionable odour;
   d) the rendering of fresh water unsuitable for consumption by farm animals;
   e) any significant adverse effects on aquatic life.

7. The consent holder shall maintain a contingency plan. The contingency plan shall be adhered to in the event of a spill or emergency and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, detail measures and procedures to be undertaken to prevent spillage or accidental discharge of contaminants not authorised by this consent and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

8. The consent holder shall maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) the loading and unloading of materials;
   b) maintenance of conveyance systems;
   c) general housekeeping; and
   d) management of the interceptor systems.

   A Stormwater Management Plan template is available in the Environment section of the Taranaki Regional Council's web site www.trc.govt.nz.

9. The consent holder shall notify the Chief Executive, Taranaki Regional Council, prior to making any changes to the processes or operations undertaken at the site, or the chemicals used or stored on site, that could alter the nature of the discharge. Any such change shall then only occur following receipt of any necessary approval under the Resource Management Act. Notification shall include the consent number, a brief description of the activity consented and an assessment of the environmental effects of any changes, and be emailed to worknotification@trc.govt.nz.

10. The consent holder shall review the Symons Group Stormwater Management Plan and Symons Spill Contingency Plan prior to making any changes to the processes or operations undertaken at the site and/or on receiving written notice from the Taranaki Regional Council of:

    - the requirement to review the Plans;
    - the matters which shall be addressed within the plan review; and
    - the reasons or anticipated results of the matters requiring review.

    The reviewed Plan(s) shall document all operations, maintenance activities, and mitigation and contingency measures and shall be submitted for approval to the Chief Executive, Taranaki Regional Council, acting in a certification capacity, at least two weeks prior to making any changes to the operations on site and/or within one month of receiving written notice of the requirement to review the Plan.

11. The data obtained from any investigations into the effectiveness of the stormwater detention tanks installed at the site is to be made available to the Chief Executive, Taranaki Regional Council upon request.

12. This consent shall lapse on 30 June 2016, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

13. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review:

    a) during the month of June 2014 and/or June 2020 and/or
    b) within 3 months of receiving a notification under special condition 9 above;

    for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 May 2011

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 2333-3

TARANAKI REGIONAL COUNCIL

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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Taranaki Sawmills Limited P O Box 49 NEW PLYMOUTH
Consent Granted Date:	8 December 2000

Conditions of Consent

Consent Granted:	To discharge stormwater from a sawmill operating site onto and into land and into the Waitaha Stream at or about GR: Q19:111-407 and Q19:111-404
Expiry Date:	1 June 2014
Review Date(s):	June 2002, June 2008
Site Location:	Hudson Road, Bell Block, New Plymouth
Legal Description:	Lot 1 DP 13792 Lot 18 DP 12911 Lot 2 DP 15755 Lot 1 DP 17946 Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) That on receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) That unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) That the consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in the Resource Management Act 1991, to prevent or minimise any adverse effects of the discharge on the receiving environment.

2. The consent holder shall provide a contingency plan to the Taranaki Regional Council, by 30 March 2001, outlining measures and procedures to be undertaken to prevent the spillage or accidental discharge of contaminants in the stormwater catchment, and measures to avoid, remedy or mitigate the environmental effects of such a spillage or discharge.

3. The maximum stormwater discharge rate shall be no more than 540 litres per second.

4. The following concentrations shall not be exceeded in the discharge:

Component	**Concentration**
pH (range)	6.0-9.0
suspended solids	100 gm^{-3}
oil and grease	15 gm^{-3}

5. After allowing for reasonable mixing, within a mixing zone extending 10 metres downstream of the stormwater drain discharges, the discharge shall not give rise to any of the following effects in the receiving waters of the Waitaha Stream:

a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
b) any conspicuous change in the colour or visual clarity;
c) any emission of objectionable odour;
d) the rendering of fresh water unsuitable for consumption by farm animals;
e) any significant adverse effects on aquatic life.

6. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during the month of June 2002 and/or June 2008, for the purpose of ensuring that the conditions are adequate to deal with any significant adverse effects of the discharge on the environment arising from the exercise of this consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 8 December 2000

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 4096-2

TARANAKI REGIONAL COUNCIL

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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Taranaki Sawmills Limited P O Box 7145 Fitzroy NEW PLYMOUTH
Consent Granted Date:	27 January 2004

Conditions of Consent

Consent Granted:	To discharge emissions into the air from sawmilling and untreated timber processing and associated activities including the combustion of wood and/or coal within boilers and wastes in an open firepit at or about GR: Q19:110-405
Expiry Date:	1 June 2032
Review Date(s):	June 2008, June 2014, June 2020, June 2026
Site Location:	Hudson Road, Bell Block, New Plymouth
Legal Description:	Lot 1 DP 13792 Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. The consent holder shall minimise the emission and effects of contaminants discharged to air from the property, by the selection of the best practicable process equipment, process control equipment, contaminant abatement equipment, and methods of control, supervision and operation, and the proper and effective operation, supervision, control and maintenance of all equipment and processes at all times.

3. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of Application 2797. In the case of any contradiction between the documentation submitted in support of application 2797 and the conditions of this consent, the conditions of this consent shall prevail.

4. The Vekos boiler, stack and associated equipment shall be constructed, operated, and maintained generally as specified in the attachments to application 93/337 lodged with the Taranaki Regional Council on 18 August 1993. In the case of any contradiction between the documentation submitted in support of application 93/337 and the conditions of this consent, the conditions of this consent shall prevail.

5. Prior to undertaking any alterations to the plant, processes or operations, as specified in the application, which may significantly change the nature or quantity of contaminants emitted from the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991 and any amendments.

6. The consent holder shall notify the Chief Executive, Taranaki Regional Council, in writing as soon as is practicable, and in any case within one working day, of any use of coal as a fuel (whether as a sole fuel or blended with other fuels) on the site in the exercise of this consent. This condition applies when the intended or anticipated cumulative duration of the use of coal is more than 72 hours within any 14 day period.

7. The consent holder shall record all use of coal as a fuel, including the rate of consumption and the time and duration, and shall make this information available to the Chief Executive, Taranaki Regional Council, upon reasonable request.

8. Within three months of the granting of this consent, the consent holder shall prepare and submit to the Chief Executive, Taranaki Regional Council, a management and operations plan for the combustion of wastes in the fire pit on the property. Upon the approval of the Chief Executive, Taranaki Regional Council, the consent holder shall thereafter maintain and comply with the plan. In the case of any contradiction between the plan and the conditions of this consent, the conditions of this consent shall prevail.

9. The plan for the management and operation of combustion of wastes in the firepit shall ensure a level of environmental performance that is to no less a level than that which would be achieved by compliance with the plan submitted in application 2797, and in particular but without exclusion or limitation, section 6.1.4 (B) and Appendix 3 of that application.

10. In the event of any incident having an adverse effect beyond the boundary of the property of the consent holder, the consent holder shall, as immediately as is practicable, notify the Chief Executive, Taranaki Regional Council.

11. The discharges authorised by this consent shall not give rise to any significant adverse ecological effect on any ecosystems in the Taranaki region.

12. The discharges authorized by this consent shall not give rise to an odour at or beyond the boundary of the site that is offensive or objectionable.

13. For the purposes of condition 12, without restriction, an odour shall be deemed to be offensive or objectionable if:

    a) it is held to be so in the opinion of an enforcement officer of the Taranaki Regional Council, having regard to the duration, frequency, intensity and nature of the odour; and/or
    b) an officer of the Taranaki Regional Council observes that an odour is noticeable, and either it lasts longer than three (3) hours continuously, or it occurs frequently during a single period of more than six (6) hours; and/or
    c) no less than three individuals from at least two different properties, each declare in writing that an objectionable or offensive odour was detected beyond the boundary of the site, provided the Council is satisfied that the declarations are not vexatious and that the objectionable or offensive odour was emitted from the site as specified in (b). Each declaration shall include the individuals' names and addresses, the date and time the objectionable or offensive odour was detected, the location of the individual when it was detected and the prevailing weather conditions during the event. The declarations shall be signed and dated.

14. The discharges authorised by this consent shall not give rise to suspended or deposited dust at or beyond the boundary of the site that, in the opinion of at least one enforcement officer of the Taranaki Regional Council, is offensive or objectionable. For the purpose of this condition, ambient levels of dust in excess of the following limits are deemed to be offensive or objectionable:

    a) dust deposition rate 0.13 $g/m^2/day$; and/or
    b) suspended dust level 1.5 mg/m^3.

15. The consent holder shall control all emissions of sulphur dioxide to the atmosphere from the site, in order that the maximum ground level concentration of sulphur dioxide arising from the exercise of this consent measured under ambient conditions on land does not exceed 350 micrograms per cubic metre [one-hour average exposure] or 125 micrograms per cubic metre [twenty-four hour average exposure] at or beyond the boundary of the site.

16. The consent holder shall control all emissions of particulate of effective diameter of less than 10 micrometres (PM10) to the atmosphere from combustion sources, whether alone or in conjunction with any other emissions from the site, in order that the maximum ground level concentration of PM10 arising from the exercise of this consent measured under ambient conditions does not exceed 50 micrograms per cubic metre [one hour average exposure], on more than 5 occasions per year cumulative across any and all monitoring sites, and does not exceed 120 micrograms per cubic metre [one hour average exposure] at any time, at or beyond the boundary of the site.

17. The discharges authorized by this consent shall not give rise to a level of a contaminant or contaminants at or beyond the boundary of the site that is noxious or toxic.

18. There shall be no emissions of dark smoke from the boiler stack(s) for any continuous period of 2 minutes or for more than 4 minutes cumulative in any 60 minute period, except:

    a) during soot blowing, which may occur up to 4 times per day for a total cumulative duration of 20 minutes in any 24 hour period; and
    b) during the first 30 minutes following the lighting up of any boiler

19. The minimum height of discharge of products of combustion from the boilers shall be 12 metres above the ground level prevailing at the time of lodging the application for this consent.

20. This consent shall lapse on the expiry of five years after the date of issue of this consent, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

21. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2008 and/or June 2014 and/or June 2020 and/or June 2026, for the purpose or purposes of:

    a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
    b) to address via a more appropriate condition or conditions any adverse effect on the environment arising from odour emissions or discharges of other contaminants to air; and/or
    c) to further specify 'best practicable option' in terms of the consent holder's management, supervision, maintenance and/or operation of its processes on the property; and/or
    d) to specify numerical values for any operating or environmental effects parameter.

Signed at Stratford on 27 January 2004

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 4056-2

TARANAKI REGIONAL COUNCIL

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Please quote our file number on all correspondence

Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	TBS Coatings Limited P O Box 7057 Fitzroy NEW PLYMOUTH
Consent Granted Date:	9 August 2002

Conditions of Consent

Consent Granted:	To discharge emissions into the air from abrasive blasting operations and associated processes at a permanent site at Corbett Road, Bell Block at or about GR: Q19:115-397, and from mobile operations at various locations throughout the Taranaki region
Expiry Date:	1 June 2020
Review Date(s):	June 2005, June 2008, June 2011, June 2014, June 2017
Site Location:	Corbett Road, Bell Block, New Plymouth
Legal Description:	Lot 1 DP 11084 Pt Sec 150 Blk II Paritutu SD
Catchment:	Mangati

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council (hereinafter the Chief Executive), the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

All operations

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment.

2. As far as is practicable all abrasive blasting shall be carried out in a booth, shed or other effectively facility on the consent holders site.

3. Sand used for dry blasting must contain less than 5% by dry weight free silica and less than 2% by dry weight dust able to pass a 0.15 mm sieve.

4. All abrasive blasting is to be conducted with regard to wind direction and wind strength, such that off-site emissions are kept to a practicable minimum.

5. As far as is practicable, work areas and surrounding areas shall be cleared of accumulations of sand and any other blasted material at the end of each blasting session and by the end of each working day.

6. Any discharge to air from the exercise of this consent shall not give rise to any offensive, objectionable or toxic levels of dust or odour at or beyond the boundary of the property on which the abrasive blasting is occurring.

7. Dry sand blasting shall be used in yard and mobile operations only when specified by a client. High pressure water blasting, wet sand blasting, grit blasting, vacuum blasting or an equivalent alternative process must be used when practicable.

8. It shall be the responsibility of the consent holder to ensure that all operators of abrasive blasting equipment understand and comply with all of the conditions of this consent prior to the commencement of any work for which this consent is required.

Operations conducted within permanent facilities

9. All emissions from abrasive blasting, surface preparation or surface coating operations and all other associated emissions from abrasive blasting, shall be contained and treated, as far as is practicable, prior to discharge beyond any operations enclosure. All gas streams ventilated or otherwise emitted from an enclosure shall be treated to a concentration of total particulate matter of less than 125 mg/m^3 [natural temperature & pressure] corrected to dry gas basis, at any time.

10. The dust deposition rate beyond the property boundary arising from the discharge, shall be less than 4.0 g/m^2/30 days.

11. The final discharge after any pre-treatment shall not contain lead [Pb] or Pb components at a concentration greater than 0.7 mg/m^3 as Pb, chromium [Cr] or Cr compounds at a concentration of 1.5 mg/m^3 as Cr, or zinc [Zn] or Zn compounds at a concentration of 15 mg/m^3 as Zn [discharge corrected to 0 degrees Celsius and dry gas], at any time.

Yard operations

12. From time to time, the consent holder may receive for abrasive blasting or other surface treatment, an item that, because of its bulk, weight, or other factor, cannot be treated inside the appropriate facility. Such yard operations shall not be permitted on a frequent or continual basis, or other than in exceptional circumstances.

13. Prior to commencing any yard operation as described in special condition 12 above, the consent holder shall specifically provide written notification to the Chief Executive, Taranaki Regional Council.

14. All items which cannot be treated within the properly enclosed facilities shall be screened by means of covers, tarpaulins, cladding or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris.

Mobile operations

15. All items or premises to be blasted from a mobile blasting unit shall be screened by means of covers, tarpaulins, cladding, or other means, as completely as practicable, to contain dust emissions and depositions and to restrict the spread of all blasting debris and materials to the satisfaction of the Chief Executive, Taranaki Regional Council.

16. Prior to undertaking abrasive blasting from a mobile blasting unit within residential areas, the consent holder shall notify the relevant District Council.

17. Where abrasive blasting or surface coating from a mobile blasting unit is to take place within 100 metres of a watercourse, the consent holder shall provide written notification to the Chief Executive, Taranaki Regional Council, prior to any operation commencing. The Chief Executive, Taranaki Regional Council, may require additional measures to prevent, minimise or mitigate any potential for adverse environmental effects. It shall be the responsibility of the consent holder to ascertain such measures prior to commencing an abrasive blasting operation, and to comply with any and all such measures at all times.

18. Dry abrasive blasting from a mobile blasting unit shall be conducted within 200 metres of any dwelling place or property boundary only with the written approval of the Chief Executive, Taranaki Regional Council, and then only after either public notice or individual notice to all affected owners or occupiers has been given.

19. The suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions], and the deposition of dust shall not exceed 0.13 g/m^2/day beyond the property boundary or beyond 50 metres of the discharge when sited on public amenity areas, whichever is less.

20. The discharge shall not give rise to any of the following effects in any surface watercourse:

    a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
    b) any conspicuous change in the colour or visual clarity;
    c) any emission of objectionable odour;
    d) the rendering of fresh water unsuitable for consumption by farm animals;
    e) any significant adverse effects on aquatic life;
    f) an increase in suspended solids of more than 10 g/m^3;
    g) turbidity above 4 nephelometric turbidity units [NTU], except that if the turbidity within the water body is above 3.2 NTU, no more than 25% increase in NTU;
    h) any increase in the concentration of zinc, lead, arsenic, chromium or thorium-based products.

Review

21. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2005 and/or June 2008 and/or June 2011 and/or June 2014 and/or June 2017, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 9 August 2002

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 4776-1

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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Transpacific Industrial Solutions P O Box 7076 NEW PLYMOUTH
Review Completed Date:	27 August 2008 [Granted: 5 September 1995]

Conditions of Consent

Consent Granted:	To discharge up to 65 litres/second of stormwater from a truck depot premises into the Waitaha Stream at or about (NZTM) 1701210E-5678852N
Expiry Date:	1 June 2014
Site Location:	Hudson Road, Bell Block
Legal Description:	Lots 36 & 37 DP 12911 Bell Dist Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a. On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b. Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c. The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:
   i. the administration, monitoring and supervision of this consent;
   ii. charges for the carrying out of the Council's functions under section 35 in relation to this consent; and
   iii. charges authorised by regulations.

Special conditions

Condition 1 [changed]

1. Constituents in the discharge shall meet the standards shown in the following table:

Constituent	Standard
pH	Within the range 6.0 to 8.5
Suspended solids	Concentration not greater than 100 gm^{-3}
Oil and grease	Concentration not greater than 15 gm^{-3}

This condition shall apply prior to the entry of the stormwater into the receiving waters at a designated sampling point approved by the Chief Executive, Taranaki Regional Council.

Conditions 2 to 3 [unchanged]

2. That allowing for a mixing zone of 10 metres extending downstream of any direct discharge, the discharge shall not give rise to all or any of the following effects in the receiving water:

   (i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
   (ii) any conspicuous change in the colour or visual clarity;
   (iii) any emission of an objectionable odour;
   (iv) any significant adverse effects on aquatic life, habitats, or ecology;
   (v) any undesirable biological growths.

3. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Condition 4 [new]

4. Before 30 November 2008 the consent holder shall prepare and thereafter maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) on site hazardous substance storage;
   b) general housekeeping; and
   c) management of the interceptor systems.

Signed at Stratford on 27 August 2008

For and on behalf of
Taranaki Regional Council

Chief Executive

Consent 4775-1

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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Weatherford New Zealand Limited P O Box 7162 NEW PLYMOUTH
Review Completed Date:	21 August 2008 [Granted: 5 September 1995]

Conditions of Consent

Consent Granted:	To discharge up to 130 litres/second of treated stormwater and minor treated washdown water from an oilfield engineering services premises onto land and into an unnamed tributary of the Waitaha Stream at or about (NZTM) 1701110E-5678552N
Expiry Date:	1 June 2014
Site Location:	Dakota Place, Bell Block
Legal Description:	Lots 5-7 DP 12035 Lots 2 & 3 DP 11781 Lot 4 DP 12035 Bell Dist Blk II Paritutu SD
Catchment:	Waitaha

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Condition 1 [changed]

1. Constituents in the discharge shall meet the standards shown in the following table:

Constituent	Standard
pH	Within the range 6.0 to 9.0
Suspended solids	Concentration not greater than 100 gm^{-3}
Oil and grease [to water]	Concentration not greater than 15 gm^{-3}
Oil and grease [to land]	Concentration not greater than 25 gm^{-3}

This condition shall apply prior to the entry of the treated stormwater and wastewater into the receiving waters, and prior to the discharge of wastewater on to land at designated sampling points approved by the Chief Executive, Taranaki Regional Council.

Conditions 2 to 4 [unchanged]

2. That the consent holder shall construct bunding around the oil/petroleum storage area to avoid the contamination of stormwater to the satisfaction of the Chief Executive, Taranaki Regional Council.

3. That allowing for a mixing zone of 10 metres extending downstream of any direct discharge or from the nearest boundary of the consent holder's property, the discharge shall not give rise to all or any of the following effects in the receiving water:

i) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
ii) any conspicuous change in the colour or visual clarity;
iii) any emission of an objectionable odour;
iv) any significant adverse effects on aquatic life, habitats, or ecology;
i) any undesirable biological growths.

4. That the Taranaki Regional Council may review any or all of the conditions of this consent by giving notice of review during June 2002 and/or June 2008 for the purpose of ensuring that the conditions are adequate to deal with any adverse effects of the discharge on the receiving environment.

Condition 5 [new]

5. Before 30 November 2008 the consent holder shall prepare and thereafter maintain a stormwater management plan. This plan shall be adhered to at all times and shall, to the satisfaction of the Chief Executive, Taranaki Regional Council, document how the site is to be managed in order to minimise the contaminants that become entrained in the stormwater. The plan shall include but not necessarily be limited to:

   a) on site hazardous substance storage;
   b) general housekeeping; and
   c) management of the interceptor systems.

Signed at Stratford on 21 August 2008

For and on behalf of
Taranaki Regional Council

Director-Resource Management

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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Woodwards 2008 Limited P O Box 9036 NEW PLYMOUTH 4351
Decision Date:	17 August 2011
Commencement Date:	17 August 2011

Conditions of Consent

Consent Granted:	To discharge emissions into air from the combustion of untreated timber wastes at or about (NZTM) 1701037E-5678250N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	124 De Havilland Drive, Bell Block
Legal Description:	Lot 8 DP 11912 [Discharge site]

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General condition

a. The consent holder shall pay to the Taranaki Regional Council all the administration, monitoring and supervision costs of this consent, fixed in accordance to section 36 of the Resource Management Act.

Special conditions

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent including [but not limited to]:

    - having regard to the prevailing and predicted wind speed and direction at the time of burning in order to minimise offsite effects;
    - allowing the waste material to dry before burning;
    - starting a small fire with the driest material and adding further material once it is blazing, as opposed to igniting a large stack and leaving it unattended.

2. The materials for combustion are restricted to untreated wood and wood wastes; and shall be combusted only when placed in a pit no closer than 20 metres to any boundary.

3. There shall be no objectionable or offensive odour to the extent that it causes an adverse effect at or beyond the boundary of the site.

    Note: For the purposes of this condition:

    - The site is defined as Lot 8 DP 11912; and
    - Assessment under this condition shall be in accordance with the *Good Practice Guide for Assessing and Managing Odour in New Zealand, Air Quality Report 36, Ministry for the Environment, 2003.*

4. The consent holder, or an authorised agent, shall supervise burning at all times and the fires shall not be lit later than 12 noon on any day.

5. The dust deposition rate beyond the property boundary arising from the discharge shall be less than 0.13 $g/m^2/day$.

6. Any discharge to air from the site shall not give rise to any offensive, objectionable, noxious or toxic levels of dust at or beyond the boundary of the property, and in any case, suspended particulate matter shall not exceed 3 mg/m^3 [measured under ambient conditions] beyond the boundary of the site.

7. The discharges authorised by this consent shall not give rise to a level of a contaminant or contaminants at or beyond the boundary of the site that is noxious or toxic.

8. This consent shall lapse on 30 September 2016, unless the consent is given effect to before the end of that period or the Taranaki Regional Council fixes a longer period pursuant to section 125(1)(b) of the Resource Management Act 1991.

9. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 17 August 2011

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Consent 4059-5

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Discharge Permit

Pursuant to the Resource Management Act 1991 a resource consent is hereby granted by the Taranaki Regional Council

Name of Consent Holder:	Zelam Limited P O Box 7142 NEW PLYMOUTH 4341
Change To Conditions Date:	1 September 2009 [Granted: 13 February 2008]

Conditions of Consent

Consent Granted:	To discharge emissions into the air from industrial agri-chemical formulation processes and associated processes at or about (NZTM) 1701317E-5678995N
Expiry Date:	1 June 2026
Review Date(s):	June 2014, June 2020
Site Location:	13 Hudson Road, Bell Block
Legal Description:	Lot 1 DP 17241 Blk II Paritutu SD

For General, Standard and Special conditions pertaining to this consent please see reverse side of this document

General conditions

a) On receipt of a requirement from the Chief Executive, Taranaki Regional Council the consent holder shall, within the time specified in the requirement, supply the information required relating to the exercise of this consent.

b) Unless it is otherwise specified in the conditions of this consent, compliance with any monitoring requirement imposed by this consent must be at the consent holder's own expense.

c) The consent holder shall pay to the Council all required administrative charges fixed by the Council pursuant to section 36 in relation to:

i) the administration, monitoring and supervision of this consent; and
ii) charges authorised by regulations.

Special conditions

Conditions 1 to 6 [unchanged]

1. The consent holder shall at all times adopt the best practicable option, as defined in section 2 of the Resource Management Act 1991, to prevent or minimise any adverse effects on the environment from the exercise of this consent.

2. Prior to undertaking any alterations to the plant, processes or operations, which may significantly alter the nature or quantity of contaminants emitted form the site, the consent holder shall consult with the Chief Executive, Taranaki Regional Council, and shall obtain any necessary approvals under the Resource Management Act 1991.

3. The discharges authorised by this consent shall not give rise to any offensive or objectionable odour at or beyond the site boundary in the opinion of an enforcement officer of the Taranaki Regional Council.

4. The concentration of benzyl chloride discharge from any vent shall not exceed 1 part per million [vol/vol].

5. The discharge of particulate matter from any vent or source shall not exceed 125 milligrams per cubic metre corrected to 0 degrees Celsius, 1 atmosphere of pressure and a dry gas basis.

6. In the event of any incident arising from the discharge of contaminants to air having an effect beyond the boundary of the site, the consent holder shall contact the Chief Executive, Taranaki Regional Council as soon as is practicable.

Conditions 7 & 8 [changed]

7. The consent holder shall maintain the scrubber liquor of the forced draft scrubbers at or greater than pH 9.

8. The consent holder shall monitor and record the pH of the forced draft scrubber liquors on a weekly basis. The consent holder shall forward this information in the form of a written report to the Chief Executive, Taranaki Regional Council, upon request.

Conditions 9 & 10 [new]

9. The consent holder shall maintain the excess free amine concentration of the scrubber liquor of the air displacement scrubber at or greater than 0.5%.

10. The consent holder shall monitor and record the excess free amine concentration of the scrubber liquor of the air displacement scrubber prior to each quaternary process run. The consent holder shall forward this information in the form of a written report to the Chief Executive, Taranaki Regional Council, upon request.

Conditions 11 & 12 [unchanged, formerly conditions 9 & 10]

11. The consent holder shall control all emissions to the atmosphere from the site so that the maximum ground level concentration for any particular contaminant arising from the exercise of this consent measured at or beyond the boundary of the site shall not exceed:

    a) 1/30th of the relevant Occupation Threshold Value Time Weighted Average as defined in the Department of Labour Workplace Exposure Standards and Biological Indices for New Zealand; or

    b) by more than the Short Term Exposure Limit as defined in the Department of Labour Workplace Exposure Standards and Biological Indices for New Zealand; or

    c) if no Short Term Exposure Limit is set, more than three times the Time Weighted Average at any time.

12. In accordance with section 128 and section 129 of the Resource Management Act 1991, the Taranaki Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent by giving notice of review during the month of June 2014 and/or June 2020, for the purpose of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time.

Signed at Stratford on 1 September 2009

For and on behalf of
Taranaki Regional Council

Director-Resource Management

Appendix II

Results of chemical monitoring of the Waitaha Stream and industrial drainage system

Table: Results of chemical analyses for the Waitaha Stream and industrial discharges Date: 23 July 2012

Site description	Site	Sample number	Time	B g/m³	BOD g/m³	CONDY mS/m @ 20C	CUAS g/m³	CUD g/m³	DRP g/m³ P	FORM g/m³	MNAS g/m³	NH3 g/m³ N	NH4 g/m³ N	NIAS g/m³	O&G g/m³	PBAS g/m³	PH pH	PHENOL g/m³	SS g/m³	TEMP Deg.C	TURBY NTU	ZNAS g/m³	ZND g/m³
Waitaha ~5m u/s De Havilland Dr	WTH000013	TRC122535	10:01	-	-	12.2	-	-	-	-	-	-	-	-	b	-	6.5	-	-	13.8	22	-	-
Waitaha at De Havilland Dr	WTH000035	TRC122536	10:12	-	-	10.9	-	0.003	0.052	<0.1	-	0.00083	0.377	-	b	<0.05	6.9	<0.02	-	12.6	64	-	0.102
unnamed trib at De Havilland Dr	WTH000037	TRC122537	10:08	-	-	13.0	-	-	-	-	-	-	-	-	b	-	6.6	-	-	13.0	100	-	-
Weatherfords stormwater	STW002025	TRC122538	10:25	-	-	1.2	0.05	-	0.012	-	-	-	-	-	<0.5	0.05	6.9	-	240	10.2	-	0.711	-
Weatherfords ex oil separator to trib	IND002031	TRC122539	10:25	-	-	11.7	0.17	-	0.842	-	0.46	-	-	0.05	<0.5	0.14	6.9	-	49	12.0	-	0.374	-
Weatherfords ex oil separator to land	IND002021	TRC122540	10:35	-	-	8.0	<0.01	-	0.005	-	-	-	-	-	<0.5	<0.05	7.3	-	-	10.3	-	1.51	-
Waitaha 120m d/s De Havilland Dr	WTH000040	TRC122541	10:17	-	-	11.3	-	0.003	0.029	-	-	0.00065	0.378	-	b	-	6.8	-	-	12.4	74	-	0.078
Weatherford unnamed trib u/s confluence	WTH000041	TRC122542	10:28	-	-	8.6	-	0.004	-	-	0.40	-	-	<0.02	<0.5	-	6.5	-	-	11.5	190	-	0.304
Waitaha Stream at old farm access bridge	WTH000050	TRC122543	11:12	0.08	-	11.2	-	0.003	0.022	-	-	-	-	-	b	-	6.8	-	-	12.1	120	-	0.101
Un named tributary d/s Taranaki Sawmills	WTH000051	TRC122549	10:48	0.08	-	8.4	-	-	-	-	-	-	-	-	<0.5	-	6.7	-	160	12.3	190	-	-
Taranaki Sawmill (unnamed) tributary u/s confluence with Waitaha Stream	WTH000059	TRC122550	11:20	0.18	21	12.6	-	-	-	-	-	-	-	-	b	-	6.8	-	160	12.4	260	-	-
Parker Drilling	STW001110	TRC122544	12:00	-	-	1.4	-	-	-	-	-	-	-	-	<0.5	-	6.8	-	2	10.1	-	-	-
NPDC U/s Connett Rd extension	STW001111	TRC122545	11:52	-	-	1.8	-	-	-	-	-	-	-	-	0.8	-	6.9	-	41	10.7	-	-	-
Symons Property Developments Limited	STW002083	TRC122534	11:37	-	-	14.8	-	-	-	-	-	-	-	-	<0.5	-	5.9	-	<2	14.3	0.66		
Pinnacle at Connett Rd bridge	STW001112	TRC122546	11:25	-	-	5.0	-	-	-	-	-	-	-	-	2	-	6.7	-	110	11.6	140		
C&O Concrete	STW001060	TRC122547	11:00	-	-	6.3	-	-	-	-	-	-	-	-	0.5	-	7.6	-	4	10.7	-	-	-
Onyx stormwater	STW001059	TRC122548	10:55	-	-	1.6	-	-	-	-	-	-	-	-	3.8	-	7.4	-	23	10.5	-	-	-
NPDC Connett Rd stormwater	STW001061	TRC122551	11:30	-	-	5.2	-	-	-	-	-	-	-	-	3.4	-	6.8	-	110	11.5	-	-	-
Waitaha Stream 30m d/s of Connett Rd	WTH000095	TRC122552	11:35	0.05	-	10.1	-	-	0.021	-	-	-	0.292	-	0.6	-	6.8	-	-	11.9	190	-	-

Key: B=Boron, g/m³; BOD=Biochemical oxygen demand, g/m³;CONDY = conductivity at 20°C, mS/m; CUD, CUAS = Copper, dissolved and acid soluble, g/m³; DRP = dissolved reactive phosphorus, g/m³P; FORM = formaldehyde, g/m³; , MNAS=Manganese, acid soluble, g/m³; NH_3 = Ammonia, g/m³N; NH_4 = Ammoniacal nitrogen, g/m³N; NIAS=Nickel, acid soluble, g/m³; NNN = Nitrate/Nitrite nitrogen, g/m³N; O&G = oil and grease, g/m³; PBAS = Lead, acid soluble, g/m³; SS = suspended solids, g/m³; TEMP = temperature, °C; TURBY = turbidity, NTU,
ZND, ZNAS = Zinc, dissolved and acid soluble, g/m³

a not discharging at the time of the sampling survey

b parameter not determined, no visible hydrocarbon sheen and no odour

Table: Results of chemical analyses for the Waitaha Stream and industrial discharges Date: 17 May 2013

Site description	Site	Sample number	Time	B g/m³	CONDY mS/m @ 20C	CUD g/m³	DRP g/m³ P	FORM g/m³	MND g/m³	NH3 g/m³ N	NH4 g/m³ N	NID g/m³	O&G g/m³	PBAS g/m³	PBD g/m³	PH pH	PHENOL g/m³	SS g/m³	TEMP Deg.C	TURBY NTU	ZND g/m³
Waitaha ~5m u/s De Havilland Dr	WTH000013	TRC135985	10:15	-	13.2	-	-	<0.1	-	0.00002	0.018	-	b	-	-	6.5	<0.02	-	15.2	8.1	-
Waitaha at De Havilland Dr	WTH000035	TRC135986	10:27	-	1.6	0.002	0.027	-	-	0.00007	0.064	-	b	<0.05	-	6.5	-	-	15.9	5.3	0.038
unnamed trib at De Havilland Dr	WTH000037	TRC135987	10:25	-	16.4	-	-	-	-	-	-	-	b	-	-	6.8	-	-	14.9	4.8	-
Weatherfords stormwater	STW002025	TRC135988	11:45	-	2.1	<0.01	0.007	-	-	-	-	-	2.1	-	<0.05	6.8	-	68	15.2	-	0.278
Weatherfords ex oil separator to trib	IND002031	a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weatherfords ex oil separator to land	IND002021	a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waitaha 120m d/s De Havilland Dr	WTH000040	TRC135991	10:35	-	19.8	<0.001	0.047	-	-	0.00189	0.550	-	-	<0.05	-	7.0	-	-	15.6	21	0.029
Weatherford unnamed trib u/s confluence	WTH000041	TRC135992	10:45	-	23.9	<0.001	-	-	-	-	-	<0.02	b	-	-	6.6	-	-	15.8	27	0.034
Waitaha Stream at old farm access bridge	WTH000050	TRC135993	11:00	0.04	20.2	<0.001	0.014	-	-	-	-	-	b	-	-	6.9	-	-	15.4	8.8	0.020
Un named tributary d/s Taranaki Sawmills	WTH000051	TRC135999	11:30	0.18	14.8	-	-	-	-	-	-	-	b	-	-	6.6	-	290	15.8	210	-
Taranaki Sawmill (unnamed) tributary u/s confluence with Waitaha Stream	WTH000059	TRC136000	11:05	0.25	21.2	-	-	-	1.09	-	-	-	b	-	-	6.7	-	16	15.5	39	-
Parker Drilling	STW001110	TRC135994	12:00	-	22.4	-	-	-	-	-	-	-	b	-	-	6.9	-	7	14.7	-	-
NPDC U/s Connett Rd extension	STW001111	TRC135995	12:05	-	2.2	-	-	-	-	-	-	-	b	-	-	7.0	-	42	15.1	-	-
Symons Property Developments Limited	STW002083	a	-	-		-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
Pinnacle at Connett Rd bridge	STW001112	TRC135996	12:15	-	2.4	-	-	-	-	-	-	-	b	-	-	7.1	-	64	15.2	45	-
C&O Concrete	STW001060	TRC135997	11:15	-	2.6	-	-	-	-	-	-	-	b	-	-	7.3	-	32	15.2	-	-
Onyx stormwater	STW001059	TRC135998	11:20	-	14.8	-	-	-	-	-	-	-	5.6	-	-	7.5	-	13	16.6	-	-
NPDC Connett Rd stormwater	STW001061	TRC136001	12:15	-	4.0	-	-	-	-	-	-	-	6.4	-	-	7.7	-	200	15.1	-	-
Waitaha Stream 30m d/s of Connett Rd	WTH000095	TRC136002	12:15	0.04	7.4	-	0.184	-	-	0.00179	0.535	-	b	-	-	7.0	-	-	15.2	180	-

Key: B=Boron, g/m³; BOD=Biochemical oxygen demand, g/m³;CONDY = conductivity at 20°C, mS/m; CUD, CUAS = Copper, dissolved and acid soluble, g/m³; DRP = dissolved reactive phosphorus, g/m³P; FORM = formaldehyde, g/m³; MND, MNAS=Manganese, dissolved and acid soluble, g/m³; NH_3 = Ammonia, g/m³N; NH_4 = Ammoniacal nitrogen, g/m³N; NID,NIAS=Nickel, dissolved and acid soluble, g/m³; NNN = Nitrate/Nitrite nitrogen, g/m³N; O&G = oil and grease, g/m³; PBAS = Lead, acid soluble, g/m³; SS = suspended solids, g/m³; TEMP = temperature, °C; TURBY = turbidity, NTU, ZND, ZNAS = Zinc, dissolved and acid soluble, g/m³

a not discharging at the time of the sampling survey

b parameter not determined, no visible hydrocarbon sheen and no odour

Appendix III

Rule 23 of the Regional Freshwater Plan (permitted stormwater rule)

Discharge of stormwater

Activity	Rule	Standards/Terms/Conditions	Classification	Notification	Control/Discretion	Policy Reference
Discharge of stormwater into or onto land or into water (excluding those wetlands listed in Appendix II) that is not provided for by Rules 25-27	23	• The discharge shall not originate from any industrial or trade premise where the active area of the site is greater than 0.5 ha, unless there is an interceptor system in place that is designed and managed so that it will keep stormwater from entraining contaminants; • The discharge shall not originate from any industrial or trade premise where hazardous substances are used, stored or potentially spilt unless: (i) there is an interceptor system in place that is designed and managed so that it will keep stormwater from entraining contaminants; or (ii) there is an interceptor system in place that is designed and managed so that it is capable of capturing contaminated stormwater and either diverting it to trade waste or containing it and/or removing or reducing the contaminants such that: - any spills can be recovered; - the discharge shall not contain any persistent or bioaccumulative substances; - the discharge shall not breach any other specified condition of this rule; and a spill contingency and interceptor system maintenance plan is maintained and regularly updated for the site; • The discharge shall not originate from any industrial or trade premises where the movement of rock, earth or other soil material is taking place, unless that movement is being undertaken in connection with site landscaping, or the installation, construction, maintenance or demolition of buildings, structures or equipment; • The discharge shall not be greater than is able to be discharged from a pipe of 900 mm in diameter;	Permitted			

Discharge of stormwater (continued)

Activity	Rule	Standards/Terms/Conditions	Classification	Notification	Control/Discretion	Policy Reference
		• The discharge shall not cause significant erosion, scour or deposition; • Discharge that will, or is liable to enter surface water, shall not exceed the following: pH 6.0-9.0 oil and grease 15 gm^{-3} suspended solids 100 gm^{-3} BOD 5 gm^{-3} unionised ammonia 0.025 gm^{-3} free chlorine 0.2 gm^{-3} • The discharge shall not give rise to any of the following effects in receiving waters after reasonable mixing: (a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; (b) any conspicuous change in the colour or visual clarity; (c) any emission of objectionable odour; (d) the rendering of fresh water unsuitable for consumption by farm animals; (e) any significant adverse effects on aquatic life.	Permitted			

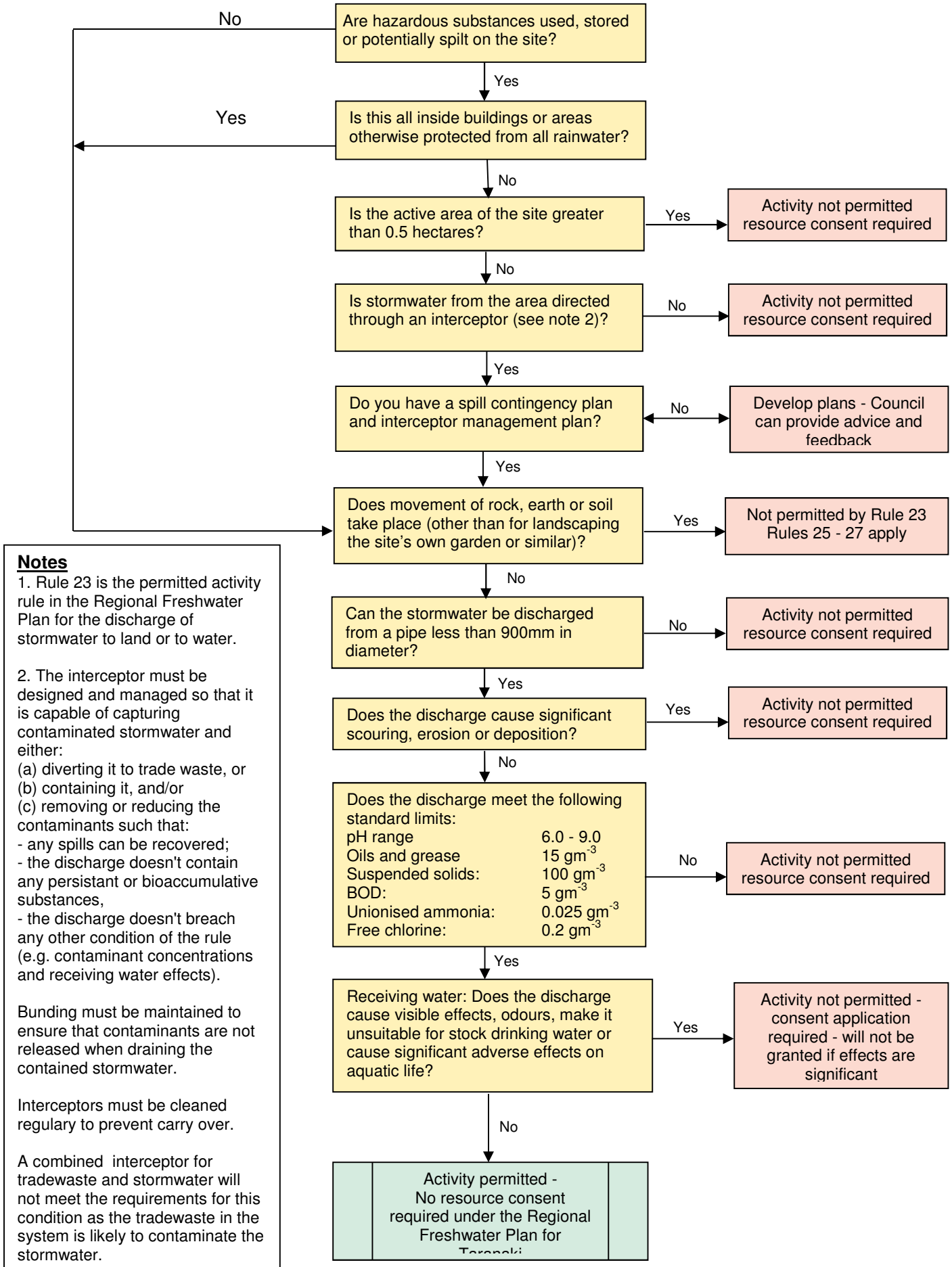
Explanation

Rule 23 provides for the large number of stormwater discharges that have no or only minor adverse effects on the environment. A resource consent is not required for stormwater discharges to either land or water so long as the discharge can comply with the conditions of this rule. The first condition restricts discharges from industrial or trade premises that are over 0.5 hectares in area, unless the site has a means of ensuring that stormwater will not be contaminated [a roofed site is a good example of this]. The reference to the 'active area' of the site refers to that part of the site where industrial and trade activity is taking place, including areas on site where goods, products, hazardous substances or other materials are stored, used or potentially spilt, but does not include areas that are grassed; landscaped; or roofed; or carparks which are used exclusively for non-goods vehicles.

Any sites storing and/or using hazardous substances must either ensure that the stormwater cannot be contaminated [for example if the site is roofed] or that an interceptor system is designed and managed so that contaminated stormwater is diverted to trade waste or captured and contained and/or treated so that the contamination is removed and reduced. In this regard the bunding of hazardous substances and the capture and treatment of stormwater would enable the discharge of stormwater from sites under 0.5 hectares to be a permitted activity. The condition also requires that a contingency Plan be maintained and regularly updated for the site.

The third condition restricts the discharge of stormwater from any industrial or trade premises where the movement of rock and other earth material is taking place, other than the types of minor works outlined in the condition. This is consistent with other rules in the Plan relating to stormwater discharges from soil disturbance activities.

Rule 23 also contains conditions relating to the receiving environment to ensure that adverse effects are avoided, remedied or mitigated. Conditions relate to both water quality [by specifying discharge limits and receiving water effects] and the quantity of water that is being discharged [to avoid erosion, scour or deposition].



Notes

1. Rule 23 is the permitted activity rule in the Regional Freshwater Plan for the discharge of stormwater to land or to water.

2. The interceptor must be designed and managed so that it is capable of capturing contaminated stormwater and either:
(a) diverting it to trade waste, or
(b) containing it, and/or
(c) removing or reducing the contaminants such that:
- any spills can be recovered;
- the discharge doesn't contain any persistant or bioaccumulative substances,
- the discharge doesn't breach any other condition of the rule (e.g. contaminant concentrations and receiving water effects).

Bunding must be maintained to ensure that contaminants are not released when draining the contained stormwater.

Interceptors must be cleaned regulary to prevent carry over.

A combined interceptor for tradewaste and stormwater will not meet the requirements for this condition as the tradewaste in the system is likely to contaminate the stormwater.