

Taunt Contracting Limited
Quarry Monitoring Programme
Biennial Report
2009-2011
Technical Report 2011–55

ISSN: 0114-8184 (Print)
ISSN: 1178-1467 (Online)
Document: 944629

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STRATFORD

January 2012

Executive summary

Taunt Contracting Limited operates a quarry located on Bird Road in Stratford, in the Patea catchment. The consent holder holds a resource consent to allow the discharge of treated stormwater and washwater into land and into an unnamed tributary of the Patea River. This report for the period July 2009-June 2011 describes the monitoring programme implemented by the Taranaki Regional Council to assess the Company's environmental performance during the period under review, and the results and environmental effects of the Company's activities.

Taunt Contracting Limited holds one resource consent, which includes a total of eight conditions setting out the requirements that the Company must satisfy.

The Council's monitoring programme for the two year period under review included two inspections. No water samples were collected for laboratory analyses.

The monitoring showed that the site was tidy and well operated. No evidence was found of adverse effects in the receiving waters from the quarry activities during either of the inspections.

During the two-year reporting period there were no unauthorised incidents associated with the consent holder.

Taunt Contracting Limited quarry achieved a high level of environmental performance and compliance with the resource consent in the 2009-2011 monitoring period.

This report includes recommendations for the 2011-2013 monitoring period.

Table of contents

	Page
1. Introduction	1
1.1 Compliance monitoring programme reports and the Resource Management Act 1991	1
1.1.1 Introduction	1
1.1.2 Structure of this report	1
1.1.3 The Resource Management Act (1991) and monitoring	1
1.1.4 Evaluation of environmental performance	2
1.2 Process description	3
1.2.1 Background	3
1.2.2 Taunt Contracting Limited quarry, Bird Road, Stratford.	4
1.3 Resource consent	4
1.3.1 Water discharge permit	4
1.4 Monitoring programme	6
1.4.1 Introduction	6
1.4.2 Programme liaison and management	6
1.4.3 Site inspections	6
1.4.4 Chemical sampling	6
2. Results	7
2.1 Water	7
2.1.1 Inspections	7
2.1.2 Sampling	7
2.2 Register of incidents	7
3. Discussion	8
3.1 Discussion of plant performance	8
3.2 Evaluation of performance	8
3.3 Recommendations from the 2007-2009 Annual Report	8
3.4 Alterations to monitoring programme for 2011-2013	9
4. Recommendation	10
Glossary of common terms and abbreviations	
Bibliography and references	
Appendix I Resource consent held by Taunt Contracting Limited	

List of tables

Table 1	Summary of performance for Consent 5002 – stormwater and washwater discharge into land and into water	8
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List of figures

Figure 1	Taunt Contracting Limited Bird Road quarry - site layout and discharge sampling site	4
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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 Biennial Report for the period July 2009-June 2011 by the Taranaki Regional Council describing the monitoring programme associated with resource consents held by Taunt Contracting Limited (Taunt). The Company operates a quarry situated on Bird Road in Stratford.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consent held by Taunt Contracting Limited primarily the discharge of water in the Patea catchment. This is the ninth report to be prepared by the Taranaki Regional Council to cover Taunt Contracting Limited's stormwater/washwater discharges and their effects.

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 Resource Management Act and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consent held by Taunt Contracting Limited in the Patea catchment, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted at Taunt Contracting Limited's site.

Section 2 presents the results of monitoring during the period under review, including scientific and technical data.

Section 3 discusses the results, their interpretation, and their significance for the environment.

Section 4 presents recommendations to be implemented in the 2011-2013 monitoring year.

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 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 Resource Management Act to assess the effects of the exercise of consents. In accordance with section 35 of the Resource Management Act 1991, 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, including 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, to move closer to achieving sustainable development of the region's resources.

1.1.4 Evaluation of environmental performance

Besides discussing the various details of the performance and extent of compliance by Taunt Contracting Limited 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 trivial (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 year were negligible or minor at most, items of concern were resolved positively, co-operatively, and quickly, the Council did not record any verified unauthorised incidents involving significant environmental impacts and was not obliged to issue any abatement notices, 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.
- **improvement desirable** indicates that the Council may have been obliged to record a verified unauthorised incident involving significant environmental impacts against the company, and/or abatement notices may have been issued; there were adverse 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 end of the period under review.
- **poor** performance is used when there were grounds for prosecution or infringement notice

1.2 Process description

1.2.1 Background

In the past, a large percentage of aggregate production came from river-based sites within Taranaki. The Waiwhakaiho River supplied much of New Plymouth's requirements as far back as the 1950s with the Waitara River, Waiongana River, Kapuni Stream and Waingongoro River also providing a valuable source of aggregate. The aggregate source within these rivers was often over-exploited. The protective armouring of the boulders and gravel was removed in places, exposing the underlying erodible ash beds and creating deep narrow channels, which moved progressively upstream with no noticeable recovery. This brought about the need for the Shingle Extraction Bylaw introduced in 1974. Aggregate extraction from rivers was then controlled through the issue of permits accompanied by a set of conditions, with the removal of river-based aggregate being restricted to that for river control purposes only.

Historically, land-based sites required steady markets to compete with the easily won river-based extraction operations. However, in the early 1980s, due to the restriction placed on river-based aggregate extraction (and the completion of various major river control programmes and 'Think Big' projects) land-based sites became more widespread (Taranaki Regional Council, 1992).

Twenty-eight operating quarries presently supply aggregate in Taranaki. These quarries are generally located in a reasonable proximity to urban areas, from which the greatest demand for aggregate stems.

Provision of aggregate to meet longer term demand will continue to be dominated by several large quarry operations. Extra demand on alluvial terraces and laharcic deposits has occurred due to the controlled river bed extraction. These resources are of good quality and are relatively plentiful. Importation of various aggregates may need to continue to meet the requirement for aggregate types not available in Taranaki.

Quarrying and extraction of gravel in NZ is regulated by two statutory processes. Allocation and protection of priority rights to extract gravel is obtained under the Crown Minerals Act from NZ Petroleum and Minerals, a division of the Ministry of Economic Development.

Regulatory responsibility for control of environmental effects of quarrying and extraction is under the RMA 1991 as applied by respective regional councils. In some cases these controls may act as a constraint or limitation on allocation decisions.

Sections 15 and 30 of the Resource Management Act 1991 give regional councils responsibility for the discharge of contaminants into the environment. Discharges of water into water, contaminants onto or into land that may result in water contamination, and contaminants from industrial premises into air or onto/into land, may not take place unless expressly allowed by a rule in a regional plan, a resource consent, or regulations. Aggregate extraction usually involves washing aggregates, and therefore requires the discharge of wastes. Other discharges, such as emissions to air from crushing and processing plants, disposal of spoil and solid wastes, and discharges of stormwater are also the responsibility of regional councils.

1.2.2 Taunt Contracting Limited quarry, Bird Road, Stratford.

The consent holder's quarry is located off Bird Road, Stratford, on the true right bank of the Patea River (Figure 1). The site was operated as a farm quarry from the 1950's until 1998, when it began producing commercial quantities of aggregate for the local market.

The site is approximately 5.4 ha, with about 2 ha of that active. Aggregate is extracted from the southern face of the quarry and trucked to the processing area where it is crushed, screened, and stockpiled. The site has been contoured and bunded to control and direct stormwater to a series of treatment ponds, prior to being discharged into the unnamed tributary of the Patea River at designated site STW002045 (Figure 1).

Site reinstatement is carried out with hard fill materials sourced from the quarry.



Figure 1 Taunt Contracting Limited Bird Road quarry - site layout and discharge sampling site

1.3 Resource consent

1.3.1 Water discharge permit

Section 15(1)(a) of the Resource Management Act 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.

Water quality is a primary concern to the Regional Council with regard to aggregate extraction. A quarry can operate as either a 'dry' quarry discharging only stormwater or a 'washing' quarry where aggregate washing facilities are in place. Many of the

quarries in Taranaki have some form of washing facility and also operate in the vicinity of a water body or have some form of discharge into a water body.

Waste water from aggregate washing has a high silt concentration. Discharge of this water into a waterbody, particularly to a river during low flow, results in a smothering of instream life and deterioration in aesthetic conditions and can affect downstream abstractions of water, local fisheries and recreational activity.

Stormwater is generally less contaminated (in terms of silt concentration) and run-off tends to occur when rivers are in higher flow. This means that the effect of silt contamination is reduced due to lower quantities, dilution and carrying capacity. The installation of appropriate stormwater diversion structures, together with construction and maintenance of contaminated stormwater and aggregate washing discharge treatment facilities are most important in maintaining water quality.

Taunt Contracting Limited holds consent 5002-2 to discharge treated stormwater and washwater from a quarry and shingle washing operation onto and into land and into an unnamed tributary of the Patea River. This permit was issued by the Taranaki Regional Council on 25 August 2010 under Section 87(e) of the Resource Management Act, and is due to expire on 1 June 2028.

Condition 1 requires the consent holder to adopt the best practicable option to prevent or minimise adverse environmental effects.

Condition 2 deals with settlement ponds, while condition 3 requires that all water discharged is directed through these.

Condition 4 stipulates that the active quarry site is contoured and bunded.

Conditions 5 sets limits on constituents in the discharge, while condition 6 deals with effects in the receiving water.

Condition 7 requires the consent holder to maintain a contingency plan.

Condition 8 is a review provision.

A copy of the consent certificate is attached to Appendix I of this report.

1.3.2 Air discharge permit

Section 15(1)(c) of the Resource Management Act 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.

Rule 16 of the Council's Regional Air Quality Plan for Taranaki (July 2011) allows the discharge of emissions from quarrying operations as a permitted activity, subject to compliance with various environmental performance conditions.

1.4 Monitoring programme

1.4.1 Introduction

Section 35 of the Resource Management Act sets out an obligation for 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.

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 Taunt site consisted of three primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the Taranaki Regional Council in ongoing 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.

1.4.3 Site inspections

The Taunt site was visited twice during the two year monitoring period. The monitoring programme for 2009-2011 required a minimum of one wet weather inspection per year. The main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. The neighbourhood and particularly the receiving waters were surveyed for environmental effects.

1.4.4 Chemical sampling

The monitoring programme includes physicochemical sampling of the treated discharge at the stormwater outfall, if warranted. Samples were to be analysed for pH and suspended solids.

2. Results

2.1 Water

2.1.1 Inspections

During the 2009-2011 monitoring period the Council carried out two routine inspections of the consent holder's Bird Road quarry site, these were conducted on 28 June 2010 and 11 April 2011.

There was activity on the site during both inspections – extraction or processing. Product was stockpiled on both occasions.

The ponds were found to be satisfactory during both visits, with a clear discharge that was not having a visual impact on the receiving waters.

2.1.2 Sampling

No water samples were collected for physicochemical analyses during either inspection as this was considered unnecessary (the discharge was clear and there was no hydrocarbon odour).

2.2 Register of incidents

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.

Incidents may be alleged to be associated with a particular site. If there is 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).

There were no incidents recorded by the Council that were associated with the Taunt Contracting Limited quarry during the 2009-2011 monitoring period.

3. Discussion

3.1 Discussion of plant performance

During the 2009-2011 monitoring period two compliance monitoring inspections of the consent holder's Bird Road quarry site were carried out.

No problems were noted at the site during either inspection.

In terms of the discharges, stormwater control was found to be satisfactory and in compliance with consent conditions.

3.2 Evaluation of performance

A tabular summary of the consent holder's compliance record for the period under review is set out in Table 1.

Table 1 Summary of performance for Consent 5002 – stormwater and washwater discharge into land and into water

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Best practicable option to minimise adverse effects	Site inspections	Yes
2. Stormwater control & treatment	Site inspections	Yes
3. No direct discharge of stormwater or washwater to surface water	Site inspections	Yes
4. Quarry to be contoured and bunded	Site inspections	Yes
5. Quality of treated discharge	Not sampled during period under review	N/A
6. Effects of discharge on receiving waters	Site inspections	Yes
7. Consent holder to maintain a contingency plan	Received June 2011	Yes
8. Optional review of consent conditions	Next scheduled in June 2016, if required	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High

N/A= Not applicable

Taunt Contracting Limited quarry achieved a high level of environmental performance and compliance with the resource consent in the 2009-2011 monitoring period. There were no unauthorised incidents at the site.

3.3 Recommendations from the 2007-2009 Annual Report

In the 2007-2009 Annual Report, it was recommended:

1. THAT monitoring of discharges from the Bird Road quarry site in 2009-2011 continue at the same level as in 2007-2009.

This recommendation was implemented.

3.4 Alterations to monitoring programme for 2011-2013

In designing and implementing the monitoring programmes for air/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 Resource Management Act, the obligations of the Act in terms of monitoring emissions/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/discharging to the environment.

In the case of Taunt Contracting Limited, it is proposed that the monitoring programmes for 2011-2013 remain unaltered from that of 2009-2011. A recommendation to this effect is made in section 4.

4. Recommendation

1. THAT monitoring of discharges from the Bird Road quarry site in 2011-2013 continue at the same level as in 2009-2011.

Glossary of common terms and abbreviations

The following abbreviations and terms are used within this report:

Biomonitoring	assessing the health of the environment using aquatic organisms
bund	a wall around a tank to contain its contents in the case of a leak
Condy	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 20°C and expressed in mS/m
fresh	elevated flow in a stream, such as after heavy rainfall
g/m ³	grammes per cubic metre, and equivalent to milligrammes per litre (mg/L). In water, this is also equivalent to parts per million (ppm), but the same does not apply to gaseous mixtures
l/s	litres per second
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.
NTU	Nephelometric Turbidity Unit, a measure of the turbidity of water
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
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 subsequent amendments
SS	suspended solids,
Temp	temperature, measured in °C
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

Bibliography and references

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Appendix I

**Resource consent held by
Taunt Contracting Limited**



Discharge Permit
Pursuant to the Resource Management Act 1991
a resource consent is hereby granted by the
Taranaki Regional Council

CHIEF EXECUTIVE
PRIVATE BAG 713
47 CLOTEN ROAD
STRATFORD
NEW ZEALAND
PHONE: 06-765 7127
FAX: 06-765 5097
www.trc.govt.nz

Please quote our file number
on all correspondence

Name of
Consent Holder: Taunt Contracting Limited
775 Bird Road
R D 23
STRATFORD 4393

Decision Date: 25 August 2010

Commencement
Date: 25 August 2010

Conditions of Consent

Consent Granted: To discharge treated stormwater and washwater from a quarry and shingle washing operation onto and into land and into an unnamed tributary of the Patea River at or about (NZTM) 1718948E-5643337N

Expiry Date: 1 June 2028

Review Date(s): June 2016, June 2022

Site Location: Bird Road, Stratford

Legal Description: Lot 4 DP 349679 [Discharge source & discharge site]

Catchment: Patea

*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 [the 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. All runoff from any unvegetated area shall pass through settlement ponds or sediment traps with a minimum total capacity of:
 - a) 100 cubic metres for every hectare of exposed soil between 1 November to 30 April; and
 - b) 200 cubic metres for every hectare of exposed soil between 1 May to 31 October;unless other sediment control measures that achieve an equivalent standard are agreed to by the Chief Executive of the Taranaki Regional Council.
- 3. There shall be no direct discharge of untreated stormwater or washwater into surface water as a result of the exercise of this consent.
- 4. The active quarry site shall be contoured/bunded to:
 - ensure that all water generated in this area is directed to the stormwater treatment system prior to discharge; and
 - prevent the flow of uncontaminated stormwater into this area.
- 5. Constituents of the discharge shall meet the standards shown in the following table.

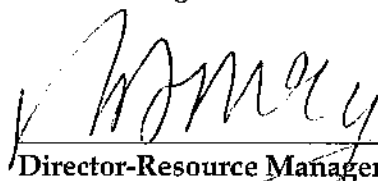
<u>Constituent</u>	<u>Standard</u>
suspended solids	Concentration not greater than 200 gm ⁻³
oil and grease	Concentration not greater than 15 gm ⁻³

This condition shall apply before entry of the treated stormwater/washwater 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 75 metres downstream of the confluence with the unnamed tributary with the Patea River, the discharge shall not give rise to any or all of the following effects in the receiving water of the Patea River:
 - a) an increase of pH by more than 0.5 pH units;
 - b) a decrease in river clarity of more than 50%;
 - c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;
 - d) any conspicuous change in colour or visual clarity;
 - e) any emission of objectionable odour;
 - f) the rendering of fresh water unsuitable for consumption by farm animals;
 - g) 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. 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 2016 and/or June 2022 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 25 August 2010

For and on behalf of
Taranaki Regional Council



Director-Resource Management

