

Burgess and Crowley Ltd  
Toko Quarry Monitoring Programme  
Biennial Report  
2011-2013  
Technical Report 2013–78

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## **Executive summary**

Burgess & Crowley operates a quarry located on East Road in Toko, in the Patea catchment. The consent holder holds a resource consent to allow the discharge of stormwater and groundwater seepage from quarrying into an unnamed tributary of the Patea River and to discharge cleanfill into and onto land. This report for the period July 2011-June 2013 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.

The Company holds a total of 2 resource consents, which include a total of 19 conditions setting out the requirements that the Company must satisfy.

The Council's monitoring programme for the period under review included 4 monitoring inspections. Stormwater discharge samples were collected on one occasion.

The monitoring showed that the site was processing and storing a lot of product on site at times during the monitoring period. Stormwater was directed to the ponds. During the inspections the silt control was in place and the stormwater discharge from the site was having no visual impact on the receiving water. The cleanfill area generally looked good.

During the period under review, the Company demonstrated a high level of environmental performance and compliance with the resource consents.

This report includes recommendations for the 2013-2015 period.



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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 2011-June 2013 by the Taranaki Regional Council describing the monitoring programme associated with resource consents held by Burgess & Crowley Limited. The Company operates a quarry situated on East Road in Toko.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by Burgess & Crowley that relate to abstractions and discharges of water in the Patea catchment. This is the tenth report to be prepared by the Taranaki Regional Council to cover the Company's discharges and their effects. This report covers the last two monitoring years.

### **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 1991* (RMA)

and the Council's obligations and general approach to monitoring sites through annual programmes, the resource consents held by Burgess & Crowley 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 in the Company's site/ catchment.

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 2013-2015 monitoring period.

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 the performance of resource users and consent holders. Compliance monitoring, including both activity and impact monitoring, 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 Evaluation of environmental and consent performance

Besides discussing the various details of the performance and extent of compliance by the consent holder/s 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.

For reference, in the 2012-2013 year, 35% of consent holders in Taranaki monitored through tailored compliance monitoring programmes achieved a high level of environmental performance and compliance with their consents, while another 59% demonstrated a good level of environmental performance and compliance with their consents.

## 1.2 Process description

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).

Thirty-one 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.

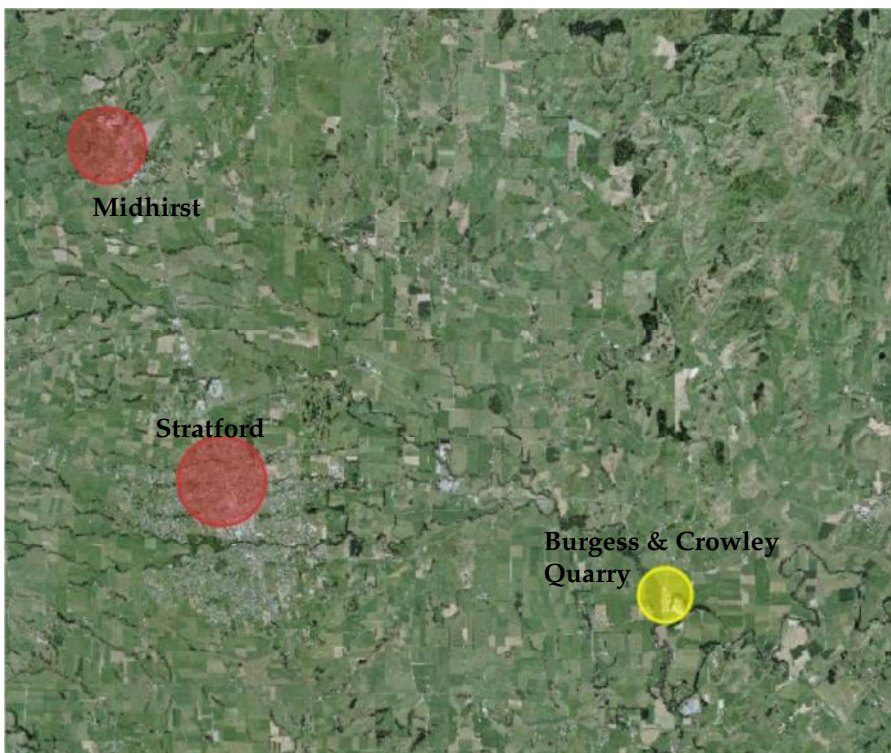
Provision of aggregate to meet longer term demand will continue to be dominated by several large quarry operations. Extra demand on alluvial terraces and laharcic deposits has occurred due to the controlled river bed extraction. These resources are of good quality and are relatively plentiful. Importation 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 the 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* (RMA) 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.

The Burgess & Crowley quarrying operation is located east of Stratford next to a wetland tributary of the Patea River at East Road, Toko. At the upstream end flow from the wetland enters the site and is directed via a drain along the southern side of the quarry, where it then flows (piped) under the entrance access to the wetland, which surrounds the active quarry site. The wetland extends some 85 metres before entering the Patea River.



**Figure 1** Location of Burgess & Crowley Quarry and proximity to Stratford

No aggregate washing is performed at this site. Machinery includes an excavator, an articulated dump truck, a loader, and a mobile crushing unit.

The quarrying area is contoured and bunded so that stormwater is directed to a settling pond adjacent to the quarry face. Stormwater and groundwater are pumped from the quarry pit when necessary through two settling ponds before the treated stormwater is discharged to the wetland.

Along a third of the perimeter of the exposed area is a 20 to 30 metre wide strip of grassed slope, situated between the stockpiled overburden and the wetland. This provides a good buffer zone for any silt-contaminated run-off. The western end of the quarry beside the wetland is now protected by bunding, and untreated stormwater can no longer discharge directly into the wetland.



**Figure 2** Burgess & Crowley quarry site

The Company also holds a consent to discharge cleanfill at the quarry site. The principle source of cleanfill material to be discharged is that from the quarrying activity on the site.

## **1.3 Resource consents**

### **1.3.1 Water discharge permit**

Section 15(1)(a) of the *Resource Management Act 1991* (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.

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.

Burgess & Crowley hold water discharge permit 3916-3 to cover the discharge of stormwater and groundwater seepage from quarrying activities into an unnamed tributary of the Patea River. This permit was issued by the Taranaki Regional Council on 23 June 2010 under Section 87(e) of the RMA. The consent will expire on 1 June 2028. This permit has eight special conditions.

Condition 1 requires that there be no direct discharge of untreated stormwater or groundwater into the unnamed tributary.

Condition 2 stipulates runoff from unvegetated areas is to pass through settling ponds or sediment traps.

Condition 3 states there is to be no aggregate washing.

Condition 4 requires site to be contoured and bunded.

Condition 5 states the concentration of suspended solids which must not be exceeded.

Condition 6 relates to the mixing zone in the receiving waters.

Condition 7 relates to site reinstatement.

Condition 8 relates to consent review.

A copy of the consent is attached in Appendix I.

### **1.3.2 Discharges of wastes to land**

Sections 15(1)(b) and (d) of the Resource Management Act 1991 (*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.

Burgess & Crowley holds discharge permit 6505-1 to cover the discharge of cleanfill onto and into land for quarry reinstatement purposes.

This permit was issued by the Taranaki Regional Council on 15 December 2004 under Section 87(e) of the RMA. It is due to expire on 1 June 2022. The permit contains eleven conditions.

In June 2010 a review of consent conditions was carried out and as a result some minor changes were made to consent conditions to make the intention of the consent clearer.

Condition 1 requires that the consent is exercised in accordance with the information submitted.

Condition 2 stipulates that contaminants discharged consist of cleanfill and/or inert materials; a list of suitable materials is specified.

Condition 3 stipulates items which may not be discharged.

Condition 4 requires written approval for items of which the consent holder is unsure.

Condition 5 stipulates that the discharge to land is not to result in any contaminant entering surface water or groundwater.

Condition 6 requires silt retention structures be installed and maintained.

Condition 7 requires that stormwater diversion drains are installed and maintained.

Condition 8 requires a management plan be prepared within three months of the consent being granted.

Condition 9 requires that the best practicable option be adopted in order to prevent or minimise adverse effects on the environment.

Condition 10 stipulates that upon completion of works the site is stabilised and revegetated.

Condition 11 deals with review provisions.

A copy of the consent is attached in Appendix I.

## **1.4 Monitoring programme**

### **1.4.1 Introduction**

Section 35 of the Resource Management Act 1991 (*RMA*) 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 Burgess & Crowley 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 Burgess & Crowley site was visited four times during the monitoring period 2011-2013. With regard to consents for the discharge to water, the main points of interest were plant processes with potential or actual discharges to receiving watercourses, including contaminated stormwater and process wastewaters. The neighbourhood was surveyed for environmental effects.

#### **1.4.4 Chemical sampling**

The Taranaki Regional Council undertook sampling of the treated discharge from the site at the stormwater outfall on one occasion. The sample was analysed for suspended solids, hydrocarbons and turbidity.

## 2. Results

### 2.1 Water

#### 2.1.1 Inspections

During the 2011-2013 monitoring period the Council carried out four inspections of the consent holder's Toko Rod quarry site. The results of these inspections were as follows:

##### 31 October 2012

At the time of inspection the cleanfill area looked tidy and little had been added to it since the last inspection. Extraction and processing were taking place and there was some product stockpiled on site and some product being trucked out during the inspection. The discharge from the site was having no visual impact on the receiving water. There were no dust or ponding issues. The site was tidy and complying with the consent.

##### 22 January 2013

At the time of inspection there was a lot of product and machinery on site. The excavated area looked good. It was noted that the site had changed a lot since the last visit. The wetland looked good and a discharge sample was taken. Not a lot of recent material dumped in the cleanfill area. A lot of broom around site which would need to be sprayed.

##### 18 March 2013

The Council was called to the quarry by the operator for advice on material suitability for use as cleanfill. The waste had been separated, was inspected and deemed to be unauthorised and subsequently taken away. During the visit the silt fencing that had recently been installed around the investigation area and the reinstated land west of the wetland pond was inspected.

##### 25 May 2013

At the time of inspection a lot of product was on site. Discussed with the operator the existing silt controls. Cleanfill looks good, with materials consisting of clay and dirt. All satisfactory at time of inspection.

#### 2.1.2 Results of discharge monitoring

One sample of the discharge at the wetland was taken during the monitoring period.

**Table 1** Results from Burgess & Crowley stormwater discharge sampled 22 January 2013

Parameters	units	22 Jan 2013
Hydrocarbons	g/m <sup>3</sup>	<0.5
Suspended solids	g/m <sup>3</sup>	2
Temp	°C	19.5
Turbidity	NTU	2.0

These results indicate that the sample collected in January 2013 complied with special condition 5 of the resource consent 3916-3, with regard to suspended solids levels (limit of 100g/m<sup>3</sup>). No impact was visible in the receiving waters, as such the sample complied with special condition 6 of resource consent 3916-3.

## **2.2 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 holder. During the year matters may arise which require additional activity by the Council, for example 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 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).

In the 2013-2014 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with Burgess & Crowley conditions in resource consents or provisions in Regional Plans.



### 3. Discussion

#### 3.1 Discussion of plant performance

During the 2011-2013 monitoring period four inspections of the consent holder's East Road quarry site were carried out.

The site was processing and storing a lot of product on site at times during the monitoring period. Stormwater was directed to the ponds. During the inspections the silt control was in place and the stormwater discharge from the site was having no visual impact on the receiving water. The cleanfill area generally looked good.

#### 3.2 Evaluation of performance

A tabular summary of the Company's compliance record for the period under review is set out in Tables 2 and 3.

**Table 2** Summary of performance for Consent **3916-3** to discharge stormwater and groundwater to an unnamed tributary of the Patea River

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. No direct discharge of untreated stormwater or groundwater	Inspections of the site	Yes
2. All runoff from unvegetated areas to pass through settling ponds	Inspections of the site	Yes
3. No aggregate washing to occur	Inspections of the site	Yes
4. Contour and bund site so all water is directed to silt control structures	Inspections of the site	Yes
5. Suspended solids not to exceed 100gm <sup>3</sup> in the discharge	Inspections and sampling	Yes
6. Mixing zone	Inspections of the receiving water	Yes
7. Progressive reinstatement of the site	Inspections of the site	Yes
8. Review condition	Next review date June 2016	Yes
Overall assessment of consent compliance and environmental performance in respect of this consent		High

N/A = not applicable

**Table 3** Summary of performance for Consent **6505-1** to discharge cleanfill onto land

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Operations in accordance with information submitted on application	Site inspections	Yes
2. Specified cleanfill materials discharged only	Cleanfill inspections, site manager to monitor external material contributed to cleanfill	Yes
3. Contaminants prohibited to enter/ be combined with cleanfill	Cleanfill inspections	Yes
4. Consent holder to check with Council if unsure material is authorised	Discussion with consent holder/ site manager	Yes

Condition requirement	Means of monitoring during period under review	Compliance achieved?
5. Discharge shall not contaminate surface water or groundwater	Site inspections	Yes
6. Maintain silt structures	Site inspections and discuss with manager	Yes
7. Maintain drains to minimise stormwater and ponding	Site inspections and discuss with manager	Yes
8. Maintain and adhere to a cleanfill management plan	Received	Yes
9. Adopt best practicable option to prevent/minimize effect on environment	Site inspection and discussion with site manager	Yes
10. Discharge site to be stabilised and revegetated on cessation of operations		N/A
11. Provision to review conditions June 2016		N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High

N/A = not applicable

During the years under review, the Company demonstrated a high level of environmental performance and compliance with the resource consents.

### 3.3 Recommendations from the 2009-2011 Biennial Report

In the 2009-2014 Biennial Report, it was recommended:

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

This recommendation was implemented during the period under review.

### 3.4 Alterations to monitoring programmes for 2013-2015

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 1991 (*RMA*), 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 Burgess & Crowley Limited, it is proposed that the monitoring programme for 2013-2015 remain unaltered from that for 2011-2013, on the grounds that the desired level of environmental performance and compliance was observed.

A recommendation to this effect is attached to this report.

## **4. Recommendation**

1. THAT monitoring of discharges from the Burgess & Crowley quarry site in 2013-2015 continue at the same level as in 2011-2013.

## Glossary of common terms and abbreviations

The following abbreviations and terms may be used within this report:

Al*	Aluminum.
As*	Arsenic.
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.
cfu	Colony forming units. A measure of the concentration of bacteria usually expressed as per 100 millilitre sample.
COD	Chemical oxygen demand. A measure of the oxygen required to oxidise all matter in a sample by chemical reaction.
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.
Cumec	A volumetric measure of flow- 1 cubic metre per second (1 m <sup>3</sup> s <sup>-1</sup> ).
DO	Dissolved oxygen.
DRP	Dissolved reactive phosphorus.
E.coli	Escherichia coli, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Ent	Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre of sample.
F	Fluoride.
FC	Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as colony forming units per 100 millilitre sample.
Fresh	Elevated flow in a stream, such as after heavy rainfall.
g/m <sup>3</sup>	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.
Incident	An event that is alleged or is found to have occurred that may have actual or potential environmental consequences or may involve non-compliance with a consent or rule in a regional plan. Registration of an incident by the Council does not automatically mean such an outcome had actually occurred.
Intervention	Action/s taken by Council to instruct or direct actions be taken to avoid or reduce the likelihood of an incident occurring.

Investigation	Action taken by Council to establish what were the circumstances/events surrounding an incident including any allegations of an incident.
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 <sub>4</sub>	ammonium, normally expressed in terms of the mass of nitrogen (N).
NH <sub>3</sub>	unionised ammonia, normally expressed in terms of the mass of nitrogen (N).
NO <sub>3</sub>	nitrate, 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 <sub>10</sub>	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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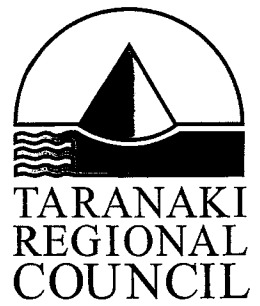




## **Appendix I**

### **Resource consents held by Burgess & Crowley Limited**





CHIEF EXECUTIVE  
PRIVATE BAG 713  
47 CLOTEN ROAD  
STRATFORD  
NEW ZEALAND  
PHONE: 06-765 7127  
FAX: 06-765 5097  
[www.trc.govt.nz](http://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: OW Burgess & TH Crowley Partnership  
[Owen Wayne Burgess & Thomas Harold Crowley]  
P O Box 150  
INGLEWOOD 4347



Decision Date: 30 July 2010  
Review Completed Date: 30 July 2010 [Granted: 15 December 2004]

**Conditions of Consent**

Consent Granted: To discharge cleanfill onto and into land for quarry  
reinstatement purposes at or about (NZTM)  
1717122E-5643560N

Expiry Date: 1 June 2022

Review Date(s): June 2010, June 2016

Site Location: East Road, Toko, Stratford

Legal Description: Pt Lots 9 & 14 DP 141 Blk III Ngaere SD

Catchment: Patea

*For General, Standard and Special conditions  
pertaining to this consent please see reverse side of this document*

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Doc# 786429-v1

## Consent 6505-1

### 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

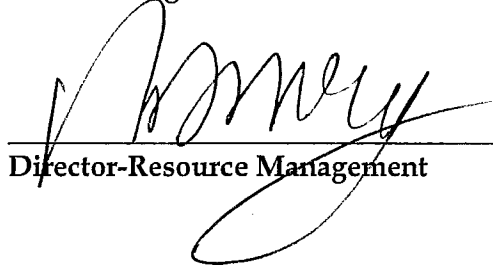
1. The exercise of this consent shall be undertaken in accordance with the documentation submitted in support of application 3439, but subject to the conditions of this consent. In the case of any contradiction between the documentation submitted in support of application 3439 and the conditions of this consent, the conditions of this consent shall prevail.
2. The contaminants to be discharged shall be limited to cleanfill and/or inert materials. For the purposes of this condition, "clean fill and inert materials" are defined as materials consisting of any concrete, cement or cement wastes, bricks, mortar, tiles [clay, ceramic or concrete], non-tanalised timber, porcelain, glass, gravels, boulders, shingles, fibreglass, plastics, sand, soils and clays, and/or tree stumps and roots, whether singly or in combination or mixture, or any other material [subject to conditions 3 & 5] that when placed onto and into land will not render that land or any vegetation grown on that land toxic to vegetation or animals consuming vegetation.
3. The discharge of the following contaminants shall not occur: food wastes, paper and cardboard, grass clippings, garden wastes including but not limited to wastes containing foliage or other vegetation [other than tree stumps and roots as permitted under condition 2], textiles, steel, galvanised metals, construction materials containing paint or fillers or sealers or their containers, oils or greases or any liquids or sludges or their containers, any industrial process by-products other than as permitted under condition 2, any poisons or solvents or their containers, batteries, general domestic refuse not otherwise described, or any wastes with the potential to render land or any vegetation grown on the land toxic to vegetation or to animals consuming such vegetation.
4. If the consent holder is uncertain as to the acceptability or not of a certain material the consent holder shall obtain written approval from the Consents Manager, Taranaki Regional Council, prior to its discharge.
5. The discharge to land shall not result in any contaminant entering surface water or groundwater.

Consent 6505-1

6. Silt retention structures shall be installed and maintained to the satisfaction of the Chief Executive, Taranaki Regional Council.
7. The consent holder shall install and maintain stormwater diversion drains to minimise stormwater movement across, or ponding on the site, to the satisfaction of the Chief Executive, Taranaki Regional Council.
8. Within three months of granting of this consent the consent holder shall prepare and maintain a cleanfill management plan to the satisfaction of the Chief Executive, Taranaki Regional Council, and shall adhere to such plan in so far as it concerns the exercise of this consent at all times.
9. Notwithstanding any conditions within this consent, the consent holder shall at all times adopt the best practicable option or options [as defined in section 2 of the Resource Management Act 1991] to prevent or minimise any actual or potential effect on the environment arising from any discharge at the site.
10. Upon completion of the works associated with the exercise of this consent, the discharge site covered by this consent shall be stabilised and revegetated to the satisfaction of the Chief Executive, Taranaki Regional Council.
11. 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 2010 and/or June 2016, 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 30 July 2010

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**

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Please quote our file number  
on all correspondence

Name of  
Consent Holder: OW Burgess & TH Crowley Partnership  
[Owen Wayne Burgess & Thomas Harold Crowley]  
P O Box 150  
INGLEWOOD 4347

Consent Granted  
Date: 23 June 2010

**Conditions of Consent**

Consent Granted: To discharge stormwater and groundwater seepage from  
quarrying activities into an unnamed tributary of the Patea  
River at or about (NZTM) 1717123E-5643515N

Expiry Date: 1 June 2028

Review Date(s): June 2016, June 2022

Site Location: East Road, Toko, Stratford

Legal Description: Pt Lots 9 & 14 DP 141 Blk III Ngaere SD

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**

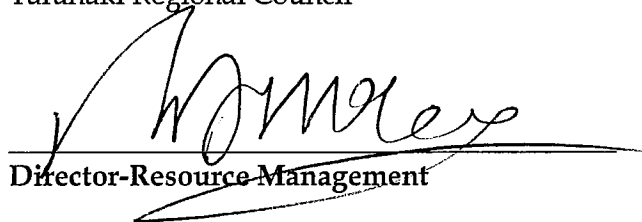
1. That there shall be no direct discharge of untreated stormwater or groundwater from the quarry site into the unnamed tributary as a result of the exercise of this consent.
2. All runoff from any unvegetated area shall pass through settlement ponds or sediment traps with a minimum total capacity of;
  - 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. This consent does not authorise discharge from any aggregate-washing.
4. That the active quarry site shall be contoured/bunded so that: all water generated in this area is directed to the silt control structures for treatment prior to discharge; and the flow of uncontaminated stormwater into this area is prevented, as far as is practicable.
5. The concentration of Suspended Solids shall not exceed 100 gm<sup>-3</sup> in any discharge. This condition shall apply prior to the entry of any discharge into the receiving waters of the unnamed tributary of the Patea River, at the Council's designated sampling point STW002029.
6. After allowing for reasonable mixing within a mixing zone extending 10 metres downstream of the discharge point, the discharge shall not give rise to any of the following effects in the receiving waters of the unnamed tributary of the Patea River:
  - 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. On cessation of quarrying operations the consent holder shall progressively reinstate the quarry site in a manner which ensures that the area of exposed, unvegetated earth, within the active quarry site is kept to a minimum at all times. This shall be undertaken to the satisfaction of the Chief Executive, Taranaki Regional Council.



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 23 June 2010

For and on behalf of  
Taranaki Regional Council



Director-Resource Management

