

Fulton Hogan
Okato Quarry
Monitoring Programme
Biennial Report
2011-2013
Technical Report 2013–79

ISSN: 0114-8184 (Print)
ISSN: 1178-1467 (Online)
Document: 1353901 (Word)
Document: 1383793 (Pdf)

Taranaki Regional Council
Private Bag 713
STRATFORD

September 2014

Executive summary

Fulton Hogan Limited operates a quarry located on Saunders Road in Okato, in the Kaihihi catchment. 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.

Fulton Hogan Limited holds three resource consents for activities at the Okato quarry. Consent 5556-2 allows the discharge of stormwater and sediment from earthworks into the Mangatete Stream. Consent 7411-1 allows the discharge of clean-fill onto and into land in the vicinity of the Mangatete Stream. Consent 7503-1 allows discharge of stormwater and sediment in association with quarrying activities onto and into land. This third consent relates to the quarry extension across the road from the existing operation, and has not been exercised.

The Council's monitoring programme for the period under review included five inspections.

No water samples were collected for laboratory analyses.

The monitoring showed that the site was generally tidy during compliance monitoring inspections. All stormwater was directed for treatment. There was no visible impact on the receiving waters, and hence no justification for water sampling. Significant reinstatement of the site was carried out.

During the reporting period there were no unauthorised incidents associated with operations at the Fulton Hogan Limited Okato quarry.

Fulton Hogan Limited achieved a high level of environmental performance and compliance with resource consents in the 2011-2013 monitoring period.

This report includes recommendations for the 2013-2015 monitoring period.

Table of contents

	Page
1. Introduction	1
1.1 Structure of this report	1
1.2 The Resource Management Act 1991 and monitoring	1
1.2.1 Evaluation of environmental performance	2
1.3 Process description	3
1.3.1 Background	3
1.3.2 Fulton Hogan Limited Okato quarry, Saunders Road, Okato	4
1.4 Resource consents	6
1.4.1 Discharge permits	6
1.4.2 Air discharges	8
1.5 Monitoring programme	8
1.5.1 Introduction	8
1.5.2 Programme liaison and management	8
1.5.3 Site inspections	9
1.5.4 Chemical sampling	9
2. Results	10
2.1 Water	10
2.1.1 Inspections	10
2.1.2 Sampling	10
2.2 Investigations, interventions, and incidents	10
3. Discussion	12
3.1 Discussion of plant performance	12
3.2 Evaluation of performance	12
3.3 Recommendations from the 2009-2011 biennial report	13
3.4 Alterations to monitoring programme for 2013-2015	14
4. Recommendation	15
Glossary of common terms and abbreviations	16
Bibliography and references	17
Appendix I Resource consents held by Fulton Hogan Limited	

List of tables

Table 1	Summary of performance for Consent 5556-2 to discharge treated washwater and stormwater from a quarry site onto and into land and into the Mangatete Stream	12
Table 2	Summary of performance for Consent 7411-1 to discharge clean-fill onto and into land in the vicinity of an unnamed tributary of the Mangatete Stream	13

List of figures

Figure 1	Approximate location of the Fulton Hogan, Okato quarry, Saunders Road	4
Figure 2	Okato quarry and cleanfill area, Saunders Road site layout	5

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 Fulton Hogan Limited (Fulton Hogan). The Company operates a quarry situated on Saunders Road, near Okato.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by Fulton Hogan primarily the discharge of water in the Kaihihi catchment. This is the eleventh report to be prepared by the Taranaki Regional Council to cover Fulton Hogan's stormwater/washwater discharges and their effects.

1.1 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 consent held by Fulton Hogan in the Kaihihi catchment, the nature of the monitoring programme in place for the period under review, and a description of the activities and operations conducted at the Fulton Hogan 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 2013-2015 monitoring period.

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

1.2 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 (e.g. 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, 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.

1.2.1 Evaluation of environmental 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 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.

1.3 Process description

1.3.1 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-five 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 lahatic 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 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 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.

1.3.2 Fulton Hogan Limited Okato quarry, Saunders Road, Okato

The Fulton Hogan quarrying operation is located on the true left bank of the Mangatete Stream at Saunders Road, Okato. The quarry operates on a full time basis and produces around 70 000 cubic metres of aggregate per year and regular washing is performed at the site. Machinery includes a fixed plant crusher and screener, front end loaders, excavators, bulldozers, and trucks.



Figure 1 Approximate location of the Fulton Hogan, Okato quarry, Saunders Road

Fulton Hogan Limited currently owns and operates this quarry; discharges from this site are covered by the following existing resource consents:

- 5556-2, which authorises the discharge of stormwater; and
- 7411-1, which authorises the discharge of cleanfill material for site rehabilitation; and

- 7503-1, which authorises the discharge of stormwater and sediment (the quarry extension). Consent 7503-1 has not been exercised.

The quarrying area of approximately 2.5 ha is contoured and bunded so that stormwater is directed to a series of settling ponds for treatment before travelling approximately 800 metres in an open drain and discharging into the Mangatete Stream.

The quarry washing plant uses up to 25 litres/second for up to 10 hours per day. Approximately 50% of this is recycled which reduces the volume to be treated to approximately 450 m³/day. Washwater is pumped from one of the larger pits on site which collects stormwater and groundwater.

This quarry is nearing exhaustion and Fulton Hogan is now looking to extend their activities to a property situated directly across Saunders Road and to the north east of the existing quarry site. Resource consent 7503-1 has been granted to authorise discharge of stormwater to land at the quarry extension area.



Figure 2 Fulton Hogan Okato quarry and cleanfill area

Fulton Hogan applied for a consent (7411-1) to retrospectively authorise the discharge of material that had been deposited at the quarry site and to authorise the future discharge of material to reinstate the lower pit of the quarry to farmland as required by their lease agreement and quarrying consent. The site is a non-commercial cleanfill and it is Fulton Hogan's intention to only take moderate to large volumes of fill from construction and earthworks projects to ensure complete control over the source of the cleanfill material and all potential fill material will be assessed against the Ministry for the Environment (MfE) guidelines prior to acceptance from that particular project.

A bulldozer has been used to spread and compact the fill to date and this practice will continue.

Stormwater and sediment management will be undertaken to further reduce the generation of sediment from the clean-fill. The measures to be undertaken include:

- diversion of water to prevent run-off from entering the area of clean-filling;
- compaction of clean-fill material and surfacing with compacted top soil and grassed once the desired surface level has been obtained;
- placement of a silt fence along the base of the clean-fill's working face to contain sediment;
- use of the stormwater settling ponds within the pit to remove the majority of remaining sediment;
- the ponds will have to be modified once the clean-fill begins to progress towards them;
- and establishment of a small wetland at the downstream end of the pit to provide final sediment barrier.

1.4 Resource consents

1.4.1 Discharge permits

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.

Water quality is a primary concern to the Taranaki 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.

Fulton Hogan holds water discharge permit 5556-2 to cover discharge of treated washwater and stormwater from a quarry site onto and into land and into the Mangatete Stream. This permit was issued by the Taranaki Regional Council on 21 October 1999 under Section 87(e) of the RMA. It was transferred to Fulton Hogan on 12 July 2006 and expired on 1 June 2013.

There are 12 special conditions attached.

Condition 1 requires the consent holder to take measures during excavation to control erosion of exposed areas, and therefore minimise levels of sediment in the discharge.

Condition 2 requires that the exercise of the consent be undertaken in accordance with documentation submitted with the application.

Condition 3 stipulates that there be no direct discharge of untreated washing water or stormwater to surface water.

Condition 4 requires the implementation of re-circulatory systems to minimise the volume of washing water discharge.

Condition 5 requires that the settling pond system is maintained.

Condition 6 sets out levels of contaminants which shall not be exceeded in the discharge.

Condition 7 requires that the consent holder adopts the best practicable option to minimise adverse environmental effects of the discharge.

Condition 8 describes effects which the discharge must not have on the stream below the 25 metre mixing zone, while condition 9 sets limits on an increase in turbidity below this mixing zone.

Condition 10 requires that the consent holder submit site, stormwater management and contingency plans prior to the exercise of the consent.

Condition 11 deals with reinstatement of the site.

Condition 12 describes provision for review of consent.

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

Fulton Hogan holds water discharge permit **7411-1** to cover discharge of clean-fill onto and into land in the vicinity of an unnamed tributary of the Mangatete Stream in the Kaihihi catchment. This permit was issued by the Taranaki Regional Council on 21 January 2011 under Section 87(e) of the RMA, and is due to expire on 1 June 2025.

Consent **7411** has 9 special conditions attached.

Condition 1 requires cleanfill only be discharged to the area indicated on the plan attached to the consent.

Condition 2 requires that contaminants discharged are limited to clean-fill and/or inert materials (these materials are described further in the consent).

Condition 3 stipulates materials that are not permitted for discharge in the clean-fill.

Condition 4 stipulates if the consent holder is uncertain of the acceptability of any material, written approval from the Council must be obtained.

Condition 5 requires that silt retention structures are installed and maintained at the toe of the clean-fill discharge area to minimise silt and sediment discharge.

Condition 6 requires that the consent holder adopts the best practicable option to minimise adverse environmental effects of the discharge.

Condition 7 stipulates that upon completion of the clean-fill discharge the site shall be stabilised and revegetated.

Condition 8 describes the lapse of the consent if not active before that date.

Condition 9 describes provision for review of consent.

1.4.2 Air discharges

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.

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

The Saunders Road quarry satisfies these conditions and hence no air discharge permit is required for the site.

1.5 Monitoring programme

1.5.1 Introduction

Section 35 of the 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 Fulton Hogan site consisted of three primary components.

1.5.2 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.

1.5.3 Site inspections

The Fulton Hogan site was inspected five times during the monitoring period. The monitoring programme for 2011-2013 required a minimum of two wet weather inspections 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.

1.5.4 Chemical sampling

The monitoring programme includes physicochemical sampling of the treated discharge at the stormwater outfall, if warranted. No water samples were collected during the 2011-2013 monitoring period.

2. Results

2.1 Water

2.1.1 Inspections

During the 2011-2013 monitoring period the Council carried out five routine inspections of the consent holder's quarry site. The inspection notices are summarised below.

16 August 2011

The site was unmanned at the time of inspection. There was new clean fill material dumped onsite. The site had been contoured. The discharge from the site is clear and no visible impact was noted on the receiving waters. The site was tidy.

31 January 2012

The site was unmanned at the time of inspection. There was processing equipment onsite. The hill that had been pushed into the quarry pit for reinstatement had been graded and contoured. There was no dust found beyond the boundary of the property. There was no runoff from the site occurring at the time of inspection. The site was tidy.

14 May 2012

The site was unmanned at the time of inspection. It was raining and windy at the time of inspection. The reinstated area looked good with minimal run off and the grass was beginning to grow. There was no visual impact noted in the receiving waters. The site was tidy.

26 September 2012

The site was unmanned at the time of inspection. The reinstated area looked good. The ring drains were clean and clear. The extension had not started. The receiving waters were flowing clean and clear. The site was tidy.

3 April 2013

The site was unmanned at the time of inspection. The site was not in use and no extension works had been undertaken. The discharge from the site was clean and clear. The site was tidy.

2.1.2 Sampling

No water samples were collected for physicochemical analyses during inspections as this was considered unnecessary as the stormwater discharge from the site was clear on each inspection and there was no visible impact on the receiving water.

2.2 Investigations, interventions, and incidents

The monitoring programme for the period was based on what was considered to be an appropriate level of monitoring, review of data, and liaison with the consent holder. During the period 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 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).

There were no incidents recorded by the Council that were associated with the Fulton Hogan Okato quarry during the 2011-2013 monitoring period.

3. Discussion

3.1 Discussion of plant performance

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

No problems were noted at the site during any of the compliance monitoring inspections.

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

3.2 Evaluation of performance

A summary of the consent holder's compliance record for the period under review is set out in Tables 1 and 2. There is no table for consent 7503-1 as this consent has not yet been exercised.

Table 1 Summary of performance for Consent **5556-2** to discharge treated washwater and stormwater from a quarry site onto and into land and into the Mangatete Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Measures undertaken to control erosion and hence minimise sediment	Site inspections	Yes
2. Exercise of consent undertaken in accordance with application	Site inspections	Yes
3. No direct discharge to surface water	Site inspections	Yes
4. Re-circulatory system for washing water discharge	Site inspections	Yes
5. Maintenance of washwater and settling pond system	Site inspections	Yes
6. Contaminant levels in discharge	Sampling (if warranted) and inspections	Yes
7. Best practicable option to minimise adverse effects on environment	Site inspections	Yes
8. Effects below mixing zone	Inspections of stream below discharge	Yes
9. Turbidity below mixing zone	Sampling (if warranted) and visual inspection	Yes
10. Provision of site, stormwater and contingency plans	Site and stormwater plans received. Latest contingency plan submitted in April 2013	Yes
11. Reinstatement of area	Quarry still operational, lower quarry pit reinstated	Partial reinstatement carried out
12. Optional review provision re environmental effects	This consent expired June 2013 and was renewed June 2013	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High

Table 3 Summary of performance for Consent **7411-1** to discharge clean-fill onto and into land in the vicinity of an unnamed tributary of the Mangatete Stream

Condition requirement	Means of monitoring during period under review	Compliance achieved?
1. Clean-fill discharge to occur in designated areas only	Site inspections	Yes
2. Discharged contaminants shall be limited to clean-fill and/or inert materials	Site inspections	Yes
3. Discharge of restricted contaminants shall not occur	Site inspections	Yes
4. Written permission sought for any material that the consent holder is unsure about acceptability	Site inspections	Yes
5. Silt retentions structures shall be installed and maintained	Site inspections	Yes
6. Best practicable option to minimise adverse effects on environment	Sampling and inspections	Yes
7. Reinstatement of area	Cleanfill site reinstated	Yes
8. Lapse of consent if not active before stated date	Site inspections	Yes
9. Optional review provision re environmental effects	Optional review date June 2013 was not exercised	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		High

The Fulton Hogan quarry achieved a high level of environmental performance and compliance with the resource consent in the 2011-2013 monitoring period. There were no unauthorised incidents related to operations at the site.

3.3 Recommendations from the 2009-2011 biennial report

In the 2009-2011 biennial report, it was recommended:

1. THAT monitoring of discharges from the Saunders Road quarry in the 2011-2013 period continue at the same level as in 2009-2011, and that the results of monitoring over this period are combined in a biennial report written after June 2013.
2. THAT the optional review of consent 7411-1 not be undertaken as it is considered that there are no grounds that require a review to be pursued.
3. THAT monitoring of resource consents granted for the quarry extension be carried out in conjunction with the compliance monitoring programme already in place for the consent holder [Spordmon 112].

3.4 Alterations to monitoring programme 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 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 Fulton Hogan Okato Quarry, the programme for 2011-2013 was unchanged from that for 2009-2011. It is recommended that for 2013-2015, the monitoring programme continue at the same level as in 2011-2013.

A recommendation to this effect is made in section 4.

4. Recommendation

1. THAT monitoring of discharges from the Saunders Road quarry in the 2013-2015 period continue at the same level as previous years.

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 g/m ³	Elevated flow in a stream, such as after heavy rainfall. 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 - an event recorded by the Council on the basis that it had potential or actual environmental consequences that may represent a breach of a consent or provision in a Regional Plan.
UIR	Unauthorised Incident Register.

Bibliography and references

- Taranaki Regional Council 1992: Regional Policy Statement Working Paper, Aggregate extraction in Taranaki TRC Report.
- Taranaki Regional Council 1996: Quarries Monitoring Programme Annual Report 1995-1996 Freight and Bulk Transport Holdings Ltd, Okato. Technical Report 96-15M.
- Taranaki Regional Council 1997: Quarries Monitoring Programme Annual Report 1996-1997 Freight and Bulk Transport Holdings Ltd, Okato. Technical Report 97-48.
- Taranaki Regional Council 1998: Quarries Monitoring Programme Annual Report 1997-1998 Freight and Bulk Transport Holdings Ltd, Okato. Technical Report 98-41.
- Taranaki Regional Council 1999: Freight and Bulk Transport Limited Monitoring Programme Annual Report 1998-1999. Technical Report 99-36.
- Taranaki Regional Council 2001: Freight and Bulk Transport Limited Monitoring Programme Report 1999-2001. Technical Report 01-48.
- Taranaki Regional Council 2003: Freight and Bulk Transport Limited Monitoring Programme Report 2001-2003. Technical Report 03-67.
- Taranaki Regional Council 2005: Freight and Bulk Transport Limited Quarry Monitoring Programme Biennial Report 2003-2005. Technical Report 05-85.
- Taranaki Regional Council 2005: Fulton Hogan Quarry Monitoring Programme Biennial Report 2005-2007. Technical Report 07-62.
- Taranaki Regional Council 2009: Fulton Hogan Quarry Monitoring Programme Biennial Report 2007-2009. Technical Report 09-79.
- Taranaki Regional Council 2009: Fulton Hogan Quarry Monitoring Programme Biennial Report 2009-2011. Technical Report 11-66.

Appendix I
Resource consents held by
Fulton Hogan 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: Fulton Hogan
 P O Box 3040
 NEW PLYMOUTH

Change To 20 January 2005 [Granted: 21 October 1999]
Conditions Date:

Conditions of Consent

Consent Granted: To discharge treated washwater and stormwater from a
 quarry site onto and into land and into an unnamed
 tributary of the Kaihihi Stream at or about GR:P19:880-200

Expiry Date: 1 June 2013

Review Date(s): June 2001, June 2007

Site Location: Saunders Road, Okato

Legal Description: Secs 85, 90 & 94 Okato Dist Blk X Cape SD

Catchment: Kaihihi

*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 take measures during excavation to control erosion of exposed areas within the quarry site and to minimise the amounts of sediment which could be contained in the discharge licensed by this consent. Such measures shall be to the satisfaction of the Chief Executive, Taranaki Regional Council.
- 2. The exercise of this consent shall be undertaken generally in accordance with the documentation submitted in support of application 3114. In the case of any contradiction between the documentation submitted in support of application 3114 and the conditions of this consent, the conditions of this consent shall prevail.
- 3. There shall be no direct discharge of untreated washing water and stormwater to surface water as a result of the exercise of this consent.
- 4. The consent holder shall implement appropriate re-circulatory systems, so as to minimise the volume of the washing water discharge.
- 5. The consent holder shall properly and efficiently maintain and operate the washing water settling ponds system in such a manner that any discharge which may occur does not breach the conditions of this consent. The settling ponds system shall be operated, as far as practicable, so as to maximise the treatment of washing water and stormwater, and to minimise any discharge.
- 6. The following concentrations shall not be exceeded in the discharge when measured in the last treatment pond:

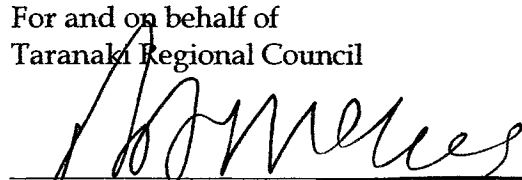
Component	Concentration
pH [range]	6-9
Suspended solids	100 gm ⁻³
Total recoverable hydrocarbons	16 gm ⁻³

- 7. 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 of the discharge on any water body.

8. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point into the unnamed tributary of the Kaihihi Stream at the Saunders Road bridge, the discharge shall not give rise to any of the following effects in the receiving waters of the unnamed tributary of the Kaihihi Stream:
 - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended material;
 - 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.
9. After allowing for reasonable mixing, within a mixing zone extending 25 metres downstream of the discharge point into the unnamed tributary of the Kaihihi Stream at the Saunders Road bridge, the discharge shall not give rise to an increase in turbidity of more than 50 % in the receiving waters of the unnamed tributary of the Kaihihi Stream, as determined using NTU [nephelometric turbidity units].
10. Prior to the exercise of this consent, the consent holder shall provide a site plan, stormwater management plan, and contingency plan for the written approval of the Chief Executive, Taranaki Regional Council. These plans are to outline measures and procedures to be undertaken to prevent the spillage or accidental discharge of contaminants into the stormwater catchment, and measures to avoid, remedy or mitigate environmental effects from the exercise of this consent.
11. On cessation of the quarrying operations or prior to the surrender or lapsing of this consent at the site licensed by this consent, the active quarry area, including the silt control structures and surrounding areas, shall be reinstated to the satisfaction of the Chief Executive, Taranaki Regional Council.
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 2001 and/or June 2007, 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.

Transferred at Stratford on 12 July 2006

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: Fulton Hogan Limited
 P O Box 3040
 NEW PLYMOUTH 4341

Decision Date: 27 June 2013

Commencement Date: 27 June 2013

Conditions of Consent

Consent Granted: To discharge stormwater and sediment from earthworks
 associated with reinstating a quarry into an unnamed
 tributary of the Mangatete Stream

Expiry Date: 1 June 2020

Review Date(s): June 2016

Site Location: Saunders Road, Okato

Legal Description: Lot 3 DP 431790 (Discharge source & site)

Grid Reference (NZTM) 1678508E-5657563N

Catchment: Kaihihi

Tributary: Mangatete

*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 with section 36 of the Resource Management Act 1991.

Special conditions

1. The stormwater discharged shall be from a catchment area not exceeding 3 ha.
2. If any area of soil is exposed, all run off from that 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. 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 actual or likely adverse effect on the environment associated with the discharge of contaminants from the site.
4. The area of the quarry site that is unvegetated shall be contoured and bunded so that all water in this area is directed to the stormwater treatment system prior to discharge.
5. 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:
 - 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. The consent holder shall maintain a stormwater management plan that documents how the site is to be managed to minimise the contaminants that become entrained in the stormwater. This plan shall be followed at all times, shall be certified by the Chief Executive, Taranaki Regional Council, and shall include but not necessarily be limited to:
 - a) the loading and unloading of materials;
 - b) general housekeeping; and
 - c) management of the interceptor system.

Consent 5556-2

7. 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 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 1991. 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 consents@trc.govt.nz.
8. If, as a consequence of the activity authorised by this consent, an event occurs that may have a significant adverse effect on water quality at the registered drinking-water supply abstraction point at location NZTM 1678253E-5658216N the consent holder shall, as soon as reasonably practicable, telephone the Taranaki Regional Council and New Plymouth District Council and notify them of the event.
9. This consent shall lapse on 30 June 2018, 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.
10. 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, 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 27 June 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

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: Fulton Hogan Limited
P O Box 3040
NEW PLYMOUTH

Consent Granted
Date: 21 January 2009

Conditions of Consent

Consent Granted: To discharge clean-fill onto and into land in the vicinity of
an unnamed tributary of the Mangatete Stream in the
Kaihihi catchment at or about (NZTM)
1678347E-5657781N

Expiry Date: 1 June 2025

Review Date(s): June 2013, June 2019

Site Location: Saunders Road, Okato

Legal Description: Lot 1 DP 19227

Catchment: Kaihihi

Tributary: Mangatete

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

Consent 7411-1

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 discharge of clean-fill shall only occur in the area shaded on the plan attached [appendix one].
2. The contaminants to be discharged shall be limited to clean-fill 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, roading seal/bitumen recovered from existing roading pavements (excluding any freshly prepared roading cover material) or any other material (subject to condition 3) 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.

Consent 7411-1

5. Silt retention structures shall be installed and maintained at the toe of the clean-fill discharge area to minimise silt and sediment discharge into the unnamed tributary of the Mangatete Stream. Installing silt retention structures in accordance with *Guidelines for Earthworks in the Taranaki Region [2006]*, by the Taranaki Regional Council, will achieve compliance with this condition.
6. 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.
7. Upon completion of the clean-fill discharge authorised by this consent, the discharge site shall be stabilised and revegetated.
8. This consent shall lapse on 31 March 2014, 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 2013 and/or June 2019, 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 21 January 2009

For and on behalf of
Taranaki Regional Council



Director-Resource Management

