Executive summary

Cudby Contracting Limited (the Company) operates a quarry located on Waiteika Road, Opunake, in the Waiteika catchment. Here, quarrying activity involves extracting rock and gravels from lahar mounds from various locations across the site. This report for the period July 2013–June 2015 describes the monitoring programme implemented by the Taranaki Regional Council (the 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 one resource consent (7519-1), authorising the discharge of treated stormwater and wastewater onto and into land from quarry activities. The consent includes a total of six conditions setting out the requirements that the Company must satisfy.

**During the monitoring period, Cudby Contracting Limited demonstrated an overall high level of environmental performance.**

The Council’s monitoring programme for the period under review included four site inspections. No adverse environmental impacts were noted during any of the inspections undertaken. All discharges of stormwater and washwater from the site were being contained to land, with no indication of runoff entering any surface watercourse. The results of the visual inspections of the site and lack of any observable effects on the local environment meant no additional sampling was necessary during the period under review. There were no Unauthorised Incidents (UIs) recording non-compliance in respect of this consent holder during the period under review.

The Company has demonstrated a high level of environmental and administrative performance and compliance with its consent over the period being reported.

For reference, in the 2013-2014 year, 60% 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 29% demonstrated a good level of environmental performance and compliance with their consents. In the 2014-2015 year, 75% 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 22% demonstrated a good level of environmental performance and compliance with their consents.

This report includes a recommendation for the 2015-2017 period.
# Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1</td>
<td>Compliance monitoring programme reports and the Resource Management Act 1991</td>
<td>1</td>
</tr>
<tr>
<td>1.1.1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Structure of this report</td>
<td>1</td>
</tr>
<tr>
<td>1.1.3</td>
<td>The Resource Management Act 1991 and monitoring</td>
<td>1</td>
</tr>
<tr>
<td>1.1.4</td>
<td>Evaluation of environmental and administrative performance</td>
<td>2</td>
</tr>
<tr>
<td>1.2</td>
<td>Process description</td>
<td>4</td>
</tr>
<tr>
<td>1.2.1</td>
<td>Background</td>
<td>4</td>
</tr>
<tr>
<td>1.2.2</td>
<td>Cudby Contracting Limited – Waiteika Road</td>
<td>5</td>
</tr>
<tr>
<td>1.3</td>
<td>Resource consents</td>
<td>6</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Discharges of wastes to land</td>
<td>6</td>
</tr>
<tr>
<td>1.4</td>
<td>Monitoring programme</td>
<td>6</td>
</tr>
<tr>
<td>1.4.1</td>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td>1.4.2</td>
<td>Programme liaison and management</td>
<td>6</td>
</tr>
<tr>
<td>1.4.3</td>
<td>Site inspections</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>Results</td>
<td>8</td>
</tr>
<tr>
<td>2.1</td>
<td>Inspections</td>
<td>8</td>
</tr>
<tr>
<td>2.2</td>
<td>Results of receiving environment monitoring</td>
<td>8</td>
</tr>
<tr>
<td>2.3</td>
<td>Investigations, interventions, and incidents</td>
<td>8</td>
</tr>
<tr>
<td>3.</td>
<td>Discussion</td>
<td>10</td>
</tr>
<tr>
<td>3.1</td>
<td>Discussion of site performance</td>
<td>10</td>
</tr>
<tr>
<td>3.2</td>
<td>Environmental effects of exercise of consents</td>
<td>10</td>
</tr>
<tr>
<td>3.3</td>
<td>Evaluation of performance</td>
<td>10</td>
</tr>
<tr>
<td>3.4</td>
<td>Recommendations from the 2011-2013 Biennial Report</td>
<td>11</td>
</tr>
<tr>
<td>3.5</td>
<td>Alterations to monitoring programmes for 2015-2017</td>
<td>11</td>
</tr>
<tr>
<td>3.6</td>
<td>Exercise of optional review of consent</td>
<td>11</td>
</tr>
<tr>
<td>4.</td>
<td>Recommendation</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Glossary of common terms and abbreviations</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Bibliography and references</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Appendix I Resource consent held by Cudby Contracting Limited</td>
<td></td>
</tr>
</tbody>
</table>
List of tables

Table 1  Summary of performance for Consent 7519-1  10

List of figures

Figure 1  Location of Sybrandy Contracting quarry site  5

List of photos

Photo 1  Waiteika Road quarry site 2009  7
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 1 June 2011 to 30 July 2013 by the Taranaki Regional Council (the Council) describing the monitoring programme associated with the resource consent held by Cudby Contracting Limited (Cudby Contracting). The Company operates a quarry situated on Waiteika Road, Opunake.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consent held by Cudby Contracting that relates to discharges of treated stormwater and wastewater onto and into land from quarry activities. This is the second biennial report to be prepared by the Council to cover the Company's treated stormwater and wastewater discharges and their effects.

1.1.2 Structure of this report

Section 1 of this report is a background section. It sets out general information about compliance monitoring under the Resource Management Act 1991 (RMA) and the Council’s obligations and general approach to monitoring sites through annual programmes, the resource consent held by Cudby Contracting in the Waiteika 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 Cudby Contracting, Waiteika Road site.

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

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

Section 4 presents recommendations to be implemented in the 2015-2017 monitoring year.

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

1.1.3 The Resource Management Act 1991 and monitoring

The 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 an activity, and may include cultural and social-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 (for example 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 Council is recognising the comprehensive meaning of ‘effects’ inasmuch as is appropriate for each activity. 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 administrative 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 a rating as to each Company’s environmental and administrative performance.

**Environmental performance** is concerned with actual or likely effects on the receiving environment from the activities during the monitoring year. **Administrative performance** is concerned with the Company’s approach to demonstrating consent compliance in site operations and management including the timely provision of information to Council (such as contingency plans and water take data) in accordance with consent conditions.

Events that were beyond the control of the consent holder and unforeseeable (that is a defence under the provisions of the RMA can be established) may be excluded with regard to the performance rating applied. For example loss of data due to a flood destroying deployed field equipment.

The categories used by the Council for this monitoring period, and their interpretation, are as follows:

**Environmental Performance**

- **High** No or inconsequential (short-term duration, less than minor in severity) breaches of consent or regional plan parameters resulting from the activity; no adverse effects of significance noted or likely in the receiving environment. 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 in relation to such impacts.

- **Good** Likely or actual adverse effects of activities on the receiving environment were negligible or minor at most. There were some such issues noted during monitoring, from self reports, or in response to unauthorised incident reports, but these items were not critical, and follow-up inspections showed they have been
dealt with. These minor issues were resolved positively, co-operatively, and quickly. The Council was not obliged to issue any abatement notices or infringement notices in relation to the minor non-compliant effects; however abatement notices may have been issued to mitigate an identified potential for an environmental effect to occur.

For example:

- High suspended solid values recorded in discharge samples, however the discharge was to land or to receiving waters that were in high flow at the time;
- Strong odour beyond boundary but no residential properties or other recipient nearby.

- **Improvement required** Likely or actual adverse effects of activities on the receiving environment were more than minor, but not substantial. There were some issues noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent minor non-compliant activity could elevate a minor issue to this level. Abatement notices and infringement notices may have been issued in respect of effects.

- **Poor** Likely or actual adverse effects of activities on the receiving environment were significant. There were some items noted during monitoring, from self reports, or in response to unauthorised incident reports. Cumulative adverse effects of a persistent moderate non-compliant activity could elevate an ‘improvement required’ issue to this level. Typically there were grounds for either a prosecution or an infringement notice in respect of effects.

**Administrative performance**

- **High** The administrative requirements of the resource consents were met, or any failure to do this had trivial consequences and were addressed promptly and co-operatively.

- **Good** Perhaps some administrative requirements of the resource consents were not met at a particular time, however this was addressed without repeated interventions from the Council staff. Alternatively adequate reason was provided for matters such as the no or late provision of information, interpretation of ‘best practical option’ for avoiding potential effects, etc.

- **Improvement required** Repeated interventions to meet the administrative requirements of the resource consents were made by Council staff. These matters took some time to resolve, or remained unresolved at the end of the period under review. The Council may have issued an abatement notice to attain compliance.

- **Poor** Material failings to meet the administrative requirements of the resource consents. Significant intervention by the Council was required. Typically there were grounds for an infringement notice.

For reference, in the 2013-2014 year, 60% 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 29% demonstrated a good level of environmental performance and compliance with their consents. In the 2014-2015 year, 75% 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 22% demonstrated a good level of environmental performance and compliance with their consents.

1.2 Process description

1.2.1 Background

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

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

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

Provision of aggregate to meet longer term demand will continue to be dominated by several large quarry operations. Extra demand on alluvial terraces and laharic 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 New Zealand is regulated by two statutory processes. Allocation and protection of priority rights to extract gravel is obtained under the Crown Minerals Act from New Zealand 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.

1.2.2 Cudby Contracting – Waiteika Road

Cudby Contracting became the operator of the Waiteika Road quarry site during the 2013-2015 period after taking over from previous operators AB and DM Sybrandy Contracting Limited. Cudby Contracting became the holder of the associated resource consent (7519-1) following its transferral on 16 June 2014. The quarry activities at the Cudby Contracting site involve the extraction of rock and gravels from the lahar mounds from various locations across the site. Initially, vegetation and topsoil is removed and stockpiled until the gravel surface is laid bare. Only 1.5 ha of the site is excavated at any one time. Once removed, the material is crushed and/or screened. A small wash plant operates onsite to wash the specialised products using water extracted from the onsite settling ponds. The quarry excavates up to 20,000 cubic metres of metal per year.

Figure 1
Location of the Cudby Contracting Waiteika Road quarry site
1.3 Resource consents

1.3.1 Discharges of wastes to land

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

Cudby Contracting Limited holds discharge permit 7519-1 to cover the discharge of treated stormwater and waste water onto and into land from quarry activities. This permit was issued by the Council on 10 August 2011 under Section 87(e) of the RMA. It is due to expire on 1 June 2024.

There are six special conditions associated with consent 7519-1.

Special condition 1 limits the size of the quarrying operation.

Special condition 2 relates to settlement pond and sediment trap specifications.

Special condition 3 relates to notification to the Council.

Special condition 4 relates to stabilisation of earthwork areas.

Special conditions 5 and 6 relate to consent lapse and review.

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

1.4 Monitoring programme

1.4.1 Introduction

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

The 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 Cudby Contracting’s Waiteika Road quarry consisted of two primary components.

1.4.2 Programme liaison and management

There is generally a significant investment of time and resources by the 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;
new consents;
- advice on the Council's environmental management strategies and content of regional plans and;
- consultation on associated matters.

### 1.4.3 Site inspections

Cudby Contracting’s Waiteika Road site was visited four times during the monitoring period. With regard to consents for the abstraction or 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. Air inspections focused on plant processes with associated actual and potential emission sources and characteristics, including potential odour, dust, noxious or offensive emissions. Sources of data being collected by the consent holder were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

![Waiteika Road quarry site 2009](Photo 1)
2. Results

2.1 Inspections

Inspection notes from the four inspection visits carried out during the period being reported are summarised below.

14 November 2013
There was a large amount of product stockpiled onsite. Aggregate was being processed at the time of the inspection. The extraction area was in a satisfactory condition. The silt and sediment ponds appeared to be working well. The site was complying with consent conditions at the time of the inspection.

1 May 2014
The gate to the quarry was open and machinery was onsite, however no aggregate was being processed as no staff were present. There was a lot of product stockpiled. The extraction area and silt ponds were in a satisfactory condition. The site appeared to have been recently tidied. The site was complying with consent conditions at the time of the inspection.

1 September 2014
There was a small amount of product stockpiled onsite. Possible future development of the existing silt and sediment ponds was discussed upon meeting the new site owner. A plan to develop the operation was also discussed. Development involved opening up additional strips of land to excavation whilst reinstating old sections of the quarry back into pasture. Possible future development of the existing silt and sediment ponds was discussed. The site was complying with consent conditions at the time of the inspection.

18 November 2014
The gate was open and staff were present, however no aggregate was being processed at the time of the inspection. There was a small amount of product stockpiled onsite. Reinstatement had begun near the extraction zone. Staff informed the inspecting officer that further reinstatement would occur in the area surrounding the current works. Following this, the plan for the extraction zone was for it to be extended to the west of the crusher. Silt and sediment controls appeared to be working well. The site was complying with consent conditions at the time of the inspection.

2.2 Results of receiving environment monitoring

No discharge or receiving environment sampling was warranted during the period being reported as no adverse effects were identified during any visual inspections of the site.

2.3 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 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 (IR) 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 2013-2015 period, the Council was not required to undertake significant additional investigations and interventions, or record incidents, in association with the Company’s conditions in resource consents or provisions in Regional Plans.
3. Discussion

3.1 Discussion of site performance

The Cudby Contracting site was visited on four occasions during the 2013-2015 monitoring period. During all inspections the site was noted as being generally well maintained and tidy and being operated in compliance with consent conditions.

3.2 Environmental effects of exercise of consents

The main potential environment effect on waterways that quarries have is the discharges of stormwater and/or wastewater containing high sediment concentrations into surface watercourses. Such discharges can result in discoloration of the waterways and may result in smothering of benthic life forms, form a barrier to fish movement and may affect fish spawning habitats.

The discharge of storm water and waste water runoff was to land and no adverse effects associated with the discharge was noted during inspection visits. Consequently, no additional sampling was warranted.

There were no incidents register in relation to activities at the site over the period being reported and the Company demonstrated a high level of environmental performance and compliance with its consent.

3.3 Evaluation of performance

A summary of the Company’s compliance record for the period under review is set out in Table 1.

<table>
<thead>
<tr>
<th>Purpose: To discharge stormwater and wastewater from quarry activities</th>
<th>Means of monitoring during period under review</th>
<th>Compliance achieved?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Condition requirement</strong></td>
<td><strong>Inspections of site</strong></td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>1. Limits on size of quarry</td>
<td>Inspections of site</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Treatment pond specifications</td>
<td>Inspection of ponds</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Advise TRC in writing at least 7 days prior to works commencing</td>
<td>Notification received</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Earthwork areas to be stabilised vegetatively or otherwise as soon as possible</td>
<td>Inspections of site</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Consent lapse</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>6. Review, amend, delete, or add to conditions of consent.</td>
<td>Next optional review date June 2018</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Overall assessment of consent compliance and environmental performance in respect of this consent: High

Overall assessment of administrative performance in respect of this consent: High

N/A = not applicable
The Company has demonstrated a high level of environmental and administrative performance and compliance with its consent during the period under review. Inspections found the site was well maintained and tidy. Discharges from the site were confined to land and there were no adverse effects associated with quarry operations observed in any surface waterbody.

### 3.4 Recommendations from the 2011-2013 Biennial Report

In the 2011-2013 Biennial Report, it was recommended:

1. THAT monitoring associated with quarrying activities at the Cudby Contracting Limited site in the forthcoming 2013-2015 monitoring period continue at the same level as in the 2011-2013 period.

These recommendations were implemented.

### 3.5 Alterations to monitoring programmes for 2015-2017

In designing and implementing the monitoring programmes for air/water discharges in the region, the 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 Council also takes into account 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.

It is proposed that for the 2015-2017 period, monitoring continues at the same level as during the period being reported. A recommendation to this effect is presented in section 4 of this report.

### 3.6 Exercise of optional review of consent

Resource consent 7519-1 does not provide for an optional review of the consent in June 2015. The next date on which the consent may be subjected to a review is June 2018.
4. **Recommendation**

1. THAT monitoring associated with quarrying activities at the Cudby Contracting Limited site in the forthcoming 2015-2017 monitoring period continues at the same level as in the 2013-2015 period.
Glossary of common terms and abbreviations

The following abbreviations and terms are used within this report:

**AI**  aluminium
**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
**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
**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 the number of colonies per 100 ml
**Ent**  Enterococci, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as the number of colonies per 100 ml
**F**  Fluoride
**FC**  Faecal coliforms, an indicator of the possible presence of faecal material and pathological micro-organisms. Usually expressed as the number of colonies per 100 ml
**fresh**  elevated flow in a stream, such as after heavy rainfall
**g/m³**  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
**IR**  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
**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.
NH₄ ammoniacal nitrogen, normally expressed in terms of the mass of nitrogen (N)
NH₃ unionised ammonia nitrogen, normally expressed in terms of the mass of nitrogen (N)
NO₃ 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 measurements of both physical properties (e.g. temperature, clarity, density) and chemical determinants (e.g. metals and nutrients) to characterise the state of an environment
PM₁₀ 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 RMA1991 and subsequent amendments
SS suspended solids
Temp temperature, measured in °C
Turb turbidity, expressed in NTU
UI Unauthorised Incident
Zn* zinc

*an abbreviation for a metal or other analyte may be followed by the letter '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.
Bibliography and references


Appendix I

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

Name of Consent Holder: Grant Cudby Contracting Limited
12 Beech Place
Hawera 4610

Decision Date: 10 August 2009
Commencement Date: 10 August 2009

Conditions of Consent

Consent Granted: To discharge treated stormwater and wastewater onto and into land from quarry activities

Expiry Date: 01 June 2024
Review Date(s): June 2012, June 2018
Site Location: Waiteika Road, Opunake
Legal Description: Pt Sec 44 & Sec 45 Blk X Opunake SD
Grid Reference (NZTM) 1680465E-5634766N
Catchment: Waiteika

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 active area of the quarry shall not exceed 1.5 hectares at any one time.

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. At least 7 working days prior to the commencement of works the consent holder shall notify the Taranaki Regional Council of the proposed start date for the work. Notification shall include the consent number and a brief description of the activity consented and shall be emailed to worknotification@trc.govt.nz. Notification by fax or post is acceptable only if the consent holder does not have access to email.

4. All earthwork areas shall be stabilised vegetatively or otherwise as soon as is practicable immediately following completion of soil disturbance activities.

5. This consent shall lapse on 30 September 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.
6. 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 2012 and/or June 2018, 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 16 June 2014

For and on behalf of
Taranaki Regional Council

__________________________________________
A D McLay
Director - Resource Management