

Civil Quarries Ltd – Everett Road Quarry  
Monitoring Programme  
Annual Report  
2019-2020

Technical Report 2020-92

Taranaki Regional Council  
Private Bag 713  
Stratford

ISSN: 1178-1467 (Online)  
Document: 2619951 (Word)  
Document: 2677205 (Pdf)  
March 2021



## Executive summary

Civil Quarries Ltd (the Company) operates a quarry located on Everett Road at Everett Park, in the Kurapete catchment. The consented activities include taking groundwater, washing aggregate on a recirculation system, and the onsite treatment and discharge of stormwater. This report for the period July 2019 to June 2020 describes the monitoring programme implemented by the Taranaki Regional Council (the Council) to assess the Company's environmental and consent compliance performance during the period under review. The report also details the results of the monitoring undertaken and assesses the environmental effects of the Company's activities.

The Company holds two resource consents, which include a total of 25 conditions setting out the requirements that the Company must satisfy. The Company holds one consent to allow it to take and use groundwater and one consent to discharge stormwater and treated groundwater into an unnamed tributary of the Kurapete stream.

### **During the monitoring period, Civil Quarries Ltd demonstrated an overall level of environmental performance that required improvement.**

The Council's monitoring programme for the year under review comprised four scheduled inspections and one follow-up inspection, which included stormwater discharge and stream samples collected for physicochemical analysis. A biomonitoring survey of receiving waters was also carried out, as was the annual hydrology inspection in relation to the flow meters and dataloggers.

The monitoring showed that improvements were needed in site management and the management of the stormwater treatment system. By comparison with previous years, the monitoring indicated a decline in the discharge quality from the quarry. A biomonitoring survey carried out in summer showed minor negative impacts of quarry activities on the macroinvertebrate community of the Kurapete Stream. There were two incidents of a non-compliance for exceeding consented turbidity limits in the Kurapete Stream.

During the year under review, the Company demonstrated a level of environmental and administrative performance with the resource consents that required improvement, as defined in Section 1.1.4. In addition to the non-compliances with turbidity limits, there were ongoing issues with the positioning of flowmeters and flow data provision. The Company has made upgrades to the stormwater system and recent sampling has shown compliance with consent conditions. Water take and discharge volumes are now being telemetered to the Council, but a review of the placement of the flowmeters is still required. The groundwater monitoring bores have been installed and monitoring will begin in the following year.

For reference, in the 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.

In terms of overall environmental and compliance performance by the consent holder over the last several years, this report shows that the consent holder's performance remains at a level that requires improvement.

This report includes recommendations for the 2020-2021 year, including a recommendation relating to an optional review of consent 1113-5.1 and consent 10247-1.1.



## Table of contents

	Page	
1	Introduction	1
1.1	Compliance monitoring programme reports and the Resource Management Act 1991	1
1.1.1	Introduction	1
1.1.2	Structure of this report	1
1.1.3	The Resource Management Act 1991 and monitoring	1
1.1.4	Evaluation of environmental and administrative performance	2
1.2	Process description	3
1.3	Resource consents	4
1.4	Monitoring programme	5
1.4.1	Introduction	5
1.4.2	Programme liaison and management	5
1.4.3	Site inspections	5
1.4.4	Chemical sampling	5
1.4.5	Biomonitoring surveys	5
2	Results	6
2.1	Water	6
2.1.1	Inspections	6
2.1.2	Results of abstraction and discharge monitoring	7
2.1.3	Results of receiving environment monitoring	10
2.2	Incidents, investigations, and interventions	11
3	Discussion	13
3.1	Discussion of site performance	13
3.2	Environmental effects of exercise of consents	13
3.3	Evaluation of performance	14
3.4	Recommendations from the 2018-2019 Annual Report	16
3.5	Alterations to monitoring programmes for 2020-2021	17
3.6	Exercise of optional review of consent	17
4	Recommendations	18
	Glossary of common terms and abbreviations	19
	Bibliography and references	21
	Appendix I Map of stormwater and washwater treatment system December 2020	
	Appendix II Resource consents held by Civil Quarries Ltd	

## List of tables

Table 1	Resource consents held by the Company during the 2019-2020 monitoring period	4
Table 2	Locations and details of sampling sites	7
Table 3	Stormwater discharge monitoring results	9
Table 4	Kurapete Stream monitoring results for the upstream site	9
Table 5	Monitoring results for the confluence of the Kurapete Stream and unnamed tributary	9
Table 6	Kurapete Stream monitoring results for the downstream site	10
Table 7	Incidents, investigations, and interventions summary table	12
Table 8	Civil Quarries Ltd summary of performance for consent 1113-5.1	14
Table 9	Civil Quarries Ltd summary of performance for consent 10247-1.1	15
Table 10	Evaluation of environmental performance over time	16

## List of figures

Figure 1	Sampling site locations, Everett Road Quarry	8
----------	--	---

## List of photos

Photo 1	Everett Road Quarry view from upper pond area, looking at washwater treatment ponds and active excavation area, December 2019.	4
Photo 2	Confluence of the unnamed tributary and Kurapete Stream, 13 March 2020.	7

# 1 Introduction

## 1.1 Compliance monitoring programme reports and the Resource Management Act 1991

### 1.1.1 Introduction

This report is for the period July 2019 to June 2020 by Taranaki Regional Council (the Council) describing the monitoring programme associated with resource consents held by Civil Quarries Ltd (the Company). The Company operates a quarry situated on Everett Road at Everett Park.

This report covers the results and findings of the monitoring programme implemented by the Council in respect of the consents held by the Company that relate to abstractions and discharges of water in the Kurapete catchment. This is the 25<sup>th</sup> annual report to be prepared by the Council to cover the quarry's water discharges and their effects; it is the fourth report under the current Company's management.

### 1.1.2 Structure of this report

**Section 1** of this report is a background section. It sets out general information about:

- consent compliance monitoring under the *Resource Management Act 1991* (RMA) and the Council's obligations;
- the Council's approach to monitoring sites through annual programmes;
- the resource consents held by the Company in the Kurapete 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 interpretations, and their significance for the environment.

**Section 4** presents recommendations to be implemented in the 2020-2021 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); and
- 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 Company, this report also assigns them a rating for their environmental and administrative performance during the period under review.

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 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 during investigations of incidents reported to the Council by a third party 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 during investigations of incidents reported to the Council by a third party. 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 during investigations of incidents reported



to the Council by a third party. 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 2019-2020 year, consent holders were found to achieve a high level of environmental performance and compliance for 81% of the consents monitored through the Taranaki tailored monitoring programmes, while for another 17% of the consents, a good level of environmental performance and compliance was achieved.<sup>1</sup>

## 1.2 Process description

The Company's quarrying operation is located adjacent to the true right bank of the Kurapete Stream at Everett Road, near Inglewood. The current site is approximately 10 ha in total area, encompassing active excavation areas, stormwater treatment ponds, stockpiling and processing areas. Processing facilities include machinery for dry crushing and a washing and screening plant. Some aggregate washing is performed at the site, generating washwater that must be managed as part of the site operations. Photo 1 shows the process area, including the washwater treatment ponds, and the current excavation area in the background.

Figure 1 shows the quarry location and discharge points; a more detailed map on stormwater and washwater ponds can be found in Appendix I.

The washwater treatment system is a series of ponds in the quarry basin (Ponds A1-A3), beside the sand wash plant. Washwater is pumped back to the sand wash plant via a pump station from pond A3. The system is closed loop and does not discharge to the tributary.

The site has both a primary and a secondary 'emergency' stormwater system. The quarrying area is contoured and bunded so that stormwater is directed to the first of the settling ponds (Pond A) in the base of the quarry floor. Groundwater from the lowest point of the quarry is pumped to Pond A and water to be used for washing is pumped from here to the sand wash plant. Unused water then continues through the primary treatment system - Ponds B, C, D and E before reaching the final Pond F. In an emergency, water is pumped directly from Pond A to Pond D, and then continues through to Pond F. Discharge from Pond F is via a steel pipe access culvert to the tributary, which flows approximately 600 m before joining the Kurapete

---

<sup>1</sup> The Council has used these compliance grading criteria for 15 years. They align closely with the 4 compliance grades in the MfE Best Practice Guidelines for Compliance, Monitoring and Enforcement, 2018

Stream, upstream of the Everett Road Bridge. Gravel filtered surface runoff from the entrance to the quarry, off Everett Road, and the upstream farm drainage enter the northern boundary drain, which also discharges into the unnamed tributary.



Photo 1 Everett Road Quarry view from upper pond area, looking at washwater treatment ponds and active excavation area, December 2019.

### 1.3 Resource consents

The Company holds two resource consents, the details of which are summarised in the table below. Summaries of the conditions attached to each permit are set out in Section 3 of this report.

A summary of the various consent types issued by the Council is included in Appendix II, as are copies of all permits held by the Company during the period under review.

Table 1 Resource consents held by the Company during the 2019-2020 monitoring period

Consent number	Purpose	Granted	Review	Expires
<i>Water abstraction permits</i>				
<b>10247-1.1</b>	To take groundwater incidental to quarry operations and for aggregate washing purposes	11 Jun 2019	Jun 2021	1 Jun 2033
<i>Water discharge permits</i>				
<b>1113-5.1</b>	To discharge treated stormwater and treated groundwater into an unnamed tributary of the Kurapete Stream	11 Jun 2019	Jun 2021	1 Jun 2033

## 1.4 Monitoring programme

### 1.4.1 Introduction

Section 35 of the RMA sets obligations upon the Council to gather information, monitor and conduct research on the exercise of resource consents within the Taranaki region. The Council is also required to assess the effects arising from the exercising of these consents and report upon them.

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 the Everett Road Quarry site consisted of four 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;
- discussion over monitoring requirements;
- preparation for any consent reviews, renewals or new consent applications;
- advice on the Council's environmental management strategies and content of regional plans; and
- consultation on associated matters.

### 1.4.3 Site inspections

The Everett Road site was visited six times during the monitoring period. With regard to consents for the abstraction of 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. Flowmeters measuring the amount of groundwater abstracted and the rate at which water is discharged from the quarry were also inspected. Sources of data being collected by the Company were identified and accessed, so that performance in respect of operation, internal monitoring, and supervision could be reviewed by the Council. The neighbourhood was surveyed for environmental effects.

### 1.4.4 Chemical sampling

The Council undertook sampling of both the discharges from the site and the water quality upstream and downstream of the discharge point and mixing zone.

The stormwater discharge was sampled on five occasions, and the samples analysed for electrical conductivity, pH, total hydrocarbons and total suspended solids. The Kurapete Stream was sampled on five occasions, and the samples analysed for electrical conductivity, pH, total hydrocarbons, total suspended solids and turbidity.

### 1.4.5 Biomonitoring surveys

A biological survey was performed on the Kurapete Stream to determine whether or not the discharge of treated stormwater and groundwater has had a detrimental effect upon the communities of the stream.

## 2 Results

### 2.1 Water

#### 2.1.1 Inspections

##### 03 September 2019

Scheduled inspection undertaken by an investigating officer, in overcast conditions, following recent rainfall. There had been a large amount of earthworks undertaken to tidy up the site. The washwater was operating on a recirculating system. The stormwater ponds were full and discharging at a high rate and the discharge was slightly discoloured. The unnamed tributary was also discoloured where it met the Kurapete Stream, however this dissipated within the mixing zone. No discolouration was noted downstream. Scheduled samples were taken and compliance was given based on the sample results.

##### 09 December 2019

Scheduled inspection undertaken by an investigating officer. The stormwater ponds were discharging at a rate of 23 L/s (3 L/s over the consented limit). This was reduced to 19 L/s immediately by quarry staff. The discharge from the unnamed tributary was highly discoloured from silt. Inspection of the receiving waters found that the Kurapete Stream was silty and discoloured beyond the mixing zone. The discharge was immediately assessed as non-compliant as the discolouration of the receiving waters was in breach of Abatement Notice EAC-21694 (issued in October 2017). Scheduled samples were taken and the results were non-compliant with turbidity limits. An Infringement Notice EAC-23189 was issued.

##### 13 March 2020

Scheduled inspection undertaken by an investigating officer, during fine weather and following several days of fine conditions. The stormwater discharge was again running above the consented limit at 28 L/s. The unnamed tributary was very grey and turbid and the confluence of the tributary and Kurapete Stream was also turbid (Photo 2). Downstream of the discharge was slightly discoloured. The discharge was immediately assessed as significantly non-compliant. Scheduled samples were taken and the results were non-compliant with turbidity limits. An Infringement Notice EA-23310 was issued.

##### 11 May 2020

Reinspection undertaken by an investigating officer following significant non-compliance. The stormwater system had been reconfigured to allow more settling time in a larger pond before the final smaller pond, which the site discharges from. The Company was looking at installing a riser. The discharge appeared only slightly discoloured. Routine samples were taken and assess as compliant based on the results.

##### 29 June 2020

Scheduled inspection undertaken by an investigating officer, during moderate rainfall with rainfall having occurred since the previous night. The Kurapete Stream was running discoloured (brown) due to the weather and the unnamed tributary was a slight, turbid grey due to quarry activities. The site inspection as unable to be undertaken due to earthworks and electrical works being carried out. The stream and outfall of the tributary were sampled, but the discharge was not, due to health and safety concerns. The discharge was assessed as compliant based on the sample results.



Photo 2 Confluence of the unnamed tributary and Kurapete Stream, 13 March 2020.

22 July 2020 and 03 November 2020

A scheduled hydrology inspection was undertaken by a hydrology officer in July 2020. This was followed up by a site visit and more detailed inspection with the job manager, hydrology officer, quarry manager and consultant in November 2020. Discussions were held regarding issues with receiving data from the flowmeters and the requirement for telemetered data, and the new quarry stormwater system layout. The new groundwater monitoring bores were also visited. Since the reconfiguring of the stormwater ponds, it was determined that the flowmeters need to be moved to more suitable positions to satisfy the conditions of the consents.

### 2.1.2 Results of abstraction and discharge monitoring

Due to issues with the service provider for the site flowmeters, no recorded flowmeter data was able to be provided for the 2019-2020 monitoring period. Flowmeters were set up for telemetry in November 2020. The groundwater monitoring bores were installed by November 2020. The groundwater component of the monitoring programme will commence in the forthcoming monitoring period.

Sampling locations are described in Table 2 and indicated on the map in Figure 1.

Table 2 Locations and details of sampling sites

Site	Location	GPS coordinates	Site code
Quarry stormwater	At discharge outlet (stormwater included after Feb 1998)	1710431E 5668301N	IND002022
Kurapete Stream	100 m upstream of Everett Road bridge (upstream of quarry tributary)	1710640E 5668709N	KRP000960

Site	Location	GPS coordinates	Site code
Unnamed tributary	5 m upstream of the Kurapete Stream confluence (600 m downstream of discharges at quarry)	1710658E 5668713N	KRP000975
Kurapete Stream	At the Everett Road bridge (approximately 100 m downstream of quarry tributary)	1710695E 5668758N	KRP000980

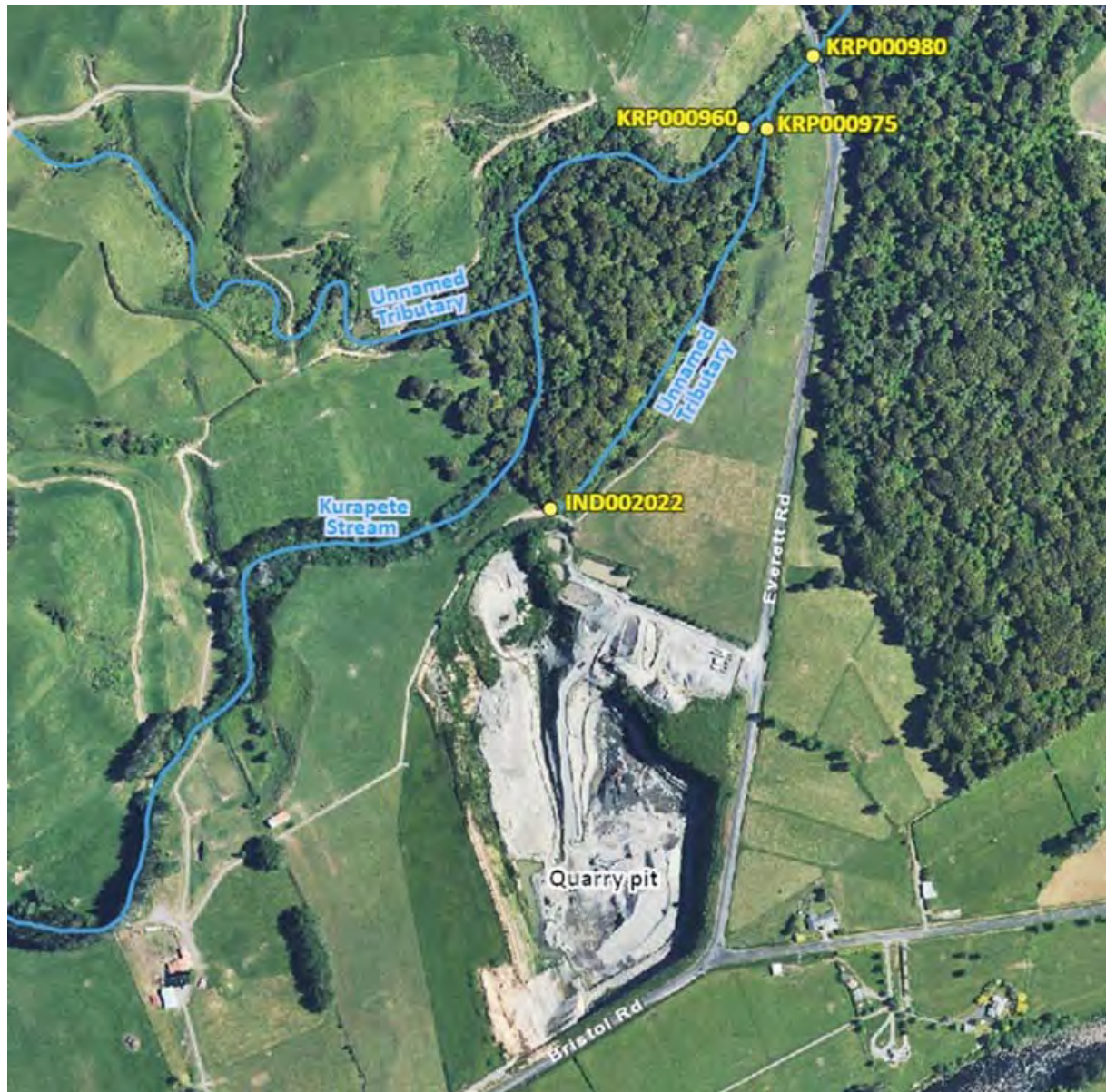


Figure 1 Sampling site locations, Everett Road Quarry

Discharge and surface water results from 2019-2020 monitoring period are presented in Tables 3-6 against the range of results at each site over the period July 2000 to June 2019.

During the monitoring period, the stormwater discharge from the quarry was compliant with the constituent limits for discharge prior to entering the receiving water (Table 3). Note: The discharge sample was not able to be taken in June 2020 due to health and safety concerns.

Table 3 Stormwater discharge monitoring results

Discharge (IND002002)								
Parameter	Unit	Consent limits	Minimum	Maximum	TRC193133	TRC194420	TRC200871	TRC201261
			July 2000 to June 2019		03-Sep-19	09-Dec-19	13-Mar-20	11-May-20
			-	-	11:21	14:04	13:03	0.59
Electrical conductivity	mS/m	-	8.8	60.2	49.6	40.0	41.5	53.0
pH	pH	<b>6-9</b>	6.3	7.9	7.5	7.6	7.6	7.2
Suspended solids	g/m <sup>3</sup>	<b>100</b>	6.0	650	14	38	33	12
Total hydrocarbons	g/m <sup>3</sup>	<b>15</b>	-	-	< 4	< 4	< 4	<0.7

Monitoring results from the Kurapete Stream showed the samples taken from all sampling points on the 3 September 2019, 11 May 2020 and 29 June 2020 were compliant with consent conditions at the time of sampling. The samples taken on 09 December 2019 and 13 March 2020 were non-compliant in respect of their turbidity results. The downstream sample (KRP000980, Table 6) must be less than 50% FNU higher than the upstream sample (KRP000960, Table 4). The downstream result in December 2019 was 3 FNU over the 50% threshold, and in March 2020 the result was 4.5 FNU over. These results are discussed further in section 2.2 and 3.

Table 4 Kurapete Stream monitoring results for the upstream site

Kurapete Stream Upstream (KRP000960)								
Parameter	Unit	Minimum	Maximum	TRC193134	TRC194421	TRC200872	TRC201260	TRC202064
		July 2000- June 2019		03-Sep-19	09-Dec-19	13-Mar-20	11-May-20	29-Jun-20
		-	-	10:56	13:29	12:37	0.57	13:26
Electrical conductivity	mS/m	7.3	31.2	12.6	11.6	15.8	13.4	12
pH	pH	7.1	7.9	7.7	7.5	7.7	7.3	7
Suspended solids	g/m <sup>3</sup>	2	650	< 3	< 3	< 3	<3	27
Turbidity	FNU	1	710	3.7	2	1	1	15
Total hydrocarbons	g/m <sup>3</sup>	-	-	< 0.7	< 0.7	< 0.7	<0.7	< 0.7

Table 5 Monitoring results for the confluence of the Kurapete Stream and unnamed tributary

Downstream - tributary confluence (KRP000975)								
Parameter	Unit	Minimum	Maximum	TRC193135	TRC194422	TRC200873	TRC201259	TRC202065
		July 2000- June 2019		03-Sep-19	09-Dec-19	13-Mar-20	11-May-20	29-Jun-20
		-	-	10:51	13:10	12:32	0.56	13:24
Electrical conductivity	mS/m	11.1	48.8	45	39	39.8	43.8	41.2
pH	pH	6.8	7.8	7.5	7.4	7.7	7.2	7.1
Suspended solids	g/m <sup>3</sup>	3	79	12	36	24	7	25
Turbidity	FNU	2	65	14.9	27	14	6	20

Downstream - tributary confluence (KRP000975)								
Parameter	Unit	Minimum	Maximum	TRC193135	TRC194422	TRC200873	TRC201259	TRC202065
		July 2000- June 2019		03-Sep-19	09-Dec-19	13-Mar-20	11-May-20	29-Jun-20
		-	-	10:51	13:10	12:32	0.56	13:24
Total hydrocarbons	g/m <sup>3</sup>	-	-	< 0.7	< 0.7	< 0.7	<0.7	< 0.7

Table 6 Kurapete Stream monitoring results for the downstream site

Downstream - bridge (KRP000980)								
Parameter	Unit	Minimum	Maximum	TRC193136	TRC194423	TRC200874	TRC201258	TRC202066
		July 2000- June 2019		03-Sep-19	09-Dec-19	13-Mar-20	11-May-20	29-Jun-20
		-	-	11:06	13:22	12:27	0.56	13:17
Electrical conductivity	mS/m	7.9	31.7	19.1	21.1	28.1	14.6	14.6
pH	pH	7	7.8	7.6	7.5	7.7	7.4	7
Suspended solids	g/m <sup>3</sup>	2	170	< 3	12	7	<3	27
Turbidity	FNU	1	150	3.7 (5.5)*	6 (3)*	6 (1.5)*	1 (1.5)*	15 (22.5)*
Total hydrocarbons	g/m <sup>3</sup>	-	-	< 0.7	< 0.7	< 0.7	<0.7	< 0.7

\*Turbidity limit based on upstream result (Table 4)

### 2.1.3 Results of receiving environment monitoring

The Council's standard 'kick-sampling' technique was used at three established sites to collect streambed macroinvertebrates from the Kurapete Stream. Samples were processed to provide number of taxa (richness), MCI and SQMCI<sub>s</sub> scores, and EPT taxa for each site.

The MCI is a measure of the overall sensitivity of the macroinvertebrate community to the effects of organic pollution in stony streams. It is based on the presence/absence of taxa with varying degrees of sensitivity to environmental conditions. The SQMCI<sub>s</sub> takes into account taxa abundance as well as sensitivity to pollution, and may reveal more subtle changes in communities. It may be the more appropriate index if non-organic impacts are occurring.

Significant differences in either the MCI or the SQMCI<sub>s</sub> between sites indicate the degree of adverse effects (if any) of the discharges being monitored.

All three sites had moderate taxa richness. There was only minor variation among sites with the two 'impact' sites having taxa richness slightly higher than the 'control' site. Taxa richness was lower than historic medians for all three sites (including the control site), and has been lower than the historic median for at least the last three surveys at all three sites.

All three sites were in 'fair' health with MCI scores not significantly different to each other, to their historic medians or to their previous scores though the 'control' site was in 'good' health in the previous survey. The SQMCI score for site 1 and site 3 indicated that they were in 'fair' health and site 2 was in 'poor' health. There was a significant decrease in SQMCI scores between site 1 and 2 indicative of a decline in stream health between the two sites. The cause in the decline in the SQMCI scores between the two sites appears to be due to an increase in pollution tolerant oligochaete worms and mud snails (*Potamopygus*), both of which can thrive in soft sediment substrate.

There was a very minor decrease in % EPT taxa between sites 1 and 2 for the current survey but there was a decline between sites 1 and 3 of 12%, though this decrease was not correlated with a decline in other



indices. Overall, the survey indicated that quarry discharges entering the stream from a small tributary draining the quarry area were having a minor negative effect on macroinvertebrate communities in the Kurapete Stream.

Copies of biomonitoring reports for this site are available from the Council upon request.

## 2.2 Incidents, investigations, and interventions

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

For all significant compliance issues, as well as complaints from the public, the Council maintains a database record. The record includes events where the individual/organisation concerned has itself notified the Council. Details of any investigation and corrective action taken are recorded for non-compliant events.

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 individual/organisation is indeed the source of the incident (or that the allegation cannot be proven).

Table 7 below sets out details of any incidents recorded, additional investigations, or interventions required by the Council in relation to the Company's activities during the 2019-2020 period. This table presents details of all events that required further investigation or intervention regardless of whether these were found to be compliant or not.

During a routine inspection on 9 December 2019, it was found that the discharge of stormwater from the unnamed tributary was highly discoloured and silty, causing a decrease in clarity of the Kurapete Stream, beyond the 25 m mixing zone. This was in breach of special condition 13 of resource consent 1113-5.1. The stormwater was also discharging at a rate higher than 20 L/s, in breach of special condition 1 of resource consent 1113-5.1. Routine samples were taken and showed a breach of special condition 14 of resource consent 1113-5.1, which limits the turbidity of the Kurapete Stream, downstream of the mixing zone. An infringement notice EAC-23189 was issued as the Company was in contravention of abatement notice EAC-21694.

During a routine inspection on 13 March 2020, the Company was again found to be in breach of the aforementioned special conditions due to turbid stormwater discharge causing a reduction in visual clarity and increased turbidity in the Kurapete Stream. An infringement notice EAC-23310 was issued and the Company was advised that further enforcement action would be taken if compliance with consent was not achieved.

Following a routine hydrology inspection, it was found that the installed flowmeters had not been correctly set up for measuring flow, so there was no data available for the monitoring period. They were also not set up for telemetry to the Council. This was in breach of special condition 8 and 9 of resource consent 1113-5.1 and special conditions 2 and 3 of resource consent 10247-1.1. However, as the fault was with the service provider of the flowmeters, the Council opted to work with the Company and service provider to rectify the issue. It was also noted during a follow up site visit that because of the reconfiguring of the stormwater ponds, the flowmeters are no longer positioned to accurately measure the flow of all water being taken from the quarry floor, nor directly measure the discharge to the unnamed tributary. The flowmeters are positioned within the stormwater system (see Appendix I), which gives some indication of the flow of water through the system, but does not meet the requirements of the consent conditions.

Table 7 Incidents, investigations, and interventions summary table

Date	Details	Compliant (Y/N)	Enforcement Action Taken?	Outcome
19/12/2019	Turbidity limits exceeded in the downstream sample	N	Yes – Infringement Notice	The Company was issued an infringement notice as this was a repeat offence in contravention of an abatement notice.
13/03/2020	Turbidity limits exceeded in the downstream sample	N	Yes – Infringement Notice	After the second infringement notice, the Company began reconfiguring the stormwater ponds to increase settlement time. A follow up inspection and sampling showed improvements to the site and compliant sample results.
22/07/2020	Flowmeters not recording data or set up for telemetry	N	No	The Council worked directly with the flowmeter service providers to fix the issues. Data is now (December 2020) being telemetered to the Council but no data is available for the 2019-2020 period.

## 3 Discussion

### 3.1 Discussion of site performance

During the previous monitoring period it was noted that the Company had been working on upgrades to the stormwater treatment system, however there were still instances of non-compliant sampling results. The Company stated they were committed to continuous improvement of the stormwater system. Given the repeat non-compliance during the current monitoring period, the Company took action to again reconfigure the stormwater system to rectify the issue. The current stormwater system layout now has a minimum retention time of 99 hours, an increase of 36 hours from the previous system. The total pond volume has also increased by approximately 800 m<sup>3</sup>. Two programmed sampling rounds following re-configuration of the pond system returned results that were compliant with consent conditions. The Company has plans to make further changes to where the dewatering of the quarry floor is occurring so that contaminated water will be banded off and not directly pumped into the stormwater pond system, which will reduce overloading of sediment.

It is worth noting however that the two instances of sediment laden stormwater entering the Kurapete stream occurred while the site was discharging at a rate higher than the consented limit. By increasing the flow into the unnamed tributary, additional accumulated silt is likely to be mobilised, potentially exacerbating the concentration of suspended solids within the discharge. A higher flow rate also means the water is moving through the stormwater system faster and not allowing enough time to settle out suspended solids. It is important to have as large a storage volume as possible to allow water to move slowly through the system.

The site Stormwater Management Plan Map has been updated and provided to Council. An updated Stormwater Management Plan and an updated Contingency Plan will need to be provided before 30 June 2021.

The groundwater monitoring bores were installed within the agreed timeframes (before December 2020) and discussions are underway to begin the agreed monitoring programme, which includes installing groundwater level loggers and carrying out water quality sampling. Surface water flow monitoring is also planned to be undertaken to monitor the effects of dewatering on summer low-flows.

As mentioned in section 2.2, the position of the flowmeters needs to be re-evaluated as the reconfiguring of the stormwater ponds has meant there is no longer a direct measuring of the flow at the point of take or discharge from the site. This issue will be resolved through discussion with the Company and the Council's Hydrology Officers.

### 3.2 Environmental effects of exercise of consents

The main potential environmental effect of quarrying activities on waterways is associated with discharges of stormwater containing fine silt particles and high suspended solids concentrations. These discharges can result in discolouration of the receiving waters, smother benthic life forms and form a barrier to fish movement and affect fish spawning habitats. This has been shown to be particularly relevant in the lower reaches of the Kurapete Stream, near its confluence with the Manganui River (Sutherland, 2019). The Civil Quarries site is particularly important as it is immediately upstream of the DoC Everett Park Scenic Reserve, which is a popular location for swimming and fishing. The current biomonitoring report (Sutherland, 2020), shows a slight increase of 5% silt and sand downstream of the quarry and observed the water was significantly cloudier downstream.

Previous biomonitoring reports showed discharge from the quarry had not had any adverse negative effects on the macroinvertebrate community of the Kurapete Stream. However, during the 2019-2020 monitoring period, the MCI and SQMCIs scores have reduced and there was also a decline in EPT taxa between the

control site and downstream site. EPT taxa are generally more sensitive to fine suspended sediment so may indicate the sediment laden discharges have been harmful to macroinvertebrates (Sutherland, 2020). The results indicated discharges from the site during the 2019-2020 year had a minor adverse effect on the biological communities of the Kurapete Stream. The water quality upstream of the quarry has generally improved over the years, necessitating continued improvement in the discharge quality from the quarry site.

Over the 2019-2020 monitoring period there were two instances of discharge causing adverse effects on the receiving environment, observed by a reduction in visual clarity and measured turbidity. One of these instances occurred a few months before the biomonitoring survey was carried out, which may explain the decline in stream health, identified by the survey.

Due to the extensive nature of the quarry operation, there is potential that groundwater levels in the surrounding area are being effected by the dewatering operation onsite. This effect will begin to be monitored and reported on in the coming monitoring period.

### 3.3 Evaluation of performance

A tabular summary of the consent holder's compliance record for the year under review is set out in Tables 8-9.

Table 8 Civil Quarries Ltd summary of performance for consent 1113-5.1

<b>Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
1. Maximum discharge rate to not exceed 20 L/s	Inspections and supply of water meter data - Exceeded during inspections and no data provided	No
2. Exception of exceedance of condition 1 due to 'heavy rain'	Inspections and supply of water meter data	No
3. Provision of stormwater management plan by 1 August 2019	Plan accepted by Council. Requires updating.	Yes
4. No washwater to enter stormwater unless due to 'heavy rain'	Inspections of stormwater and washwater treatment systems	Yes
5. Location of discharge point	Inspections of treatment system and discharge point	Yes
6. Company to adopt best practicable option	Inspections of treatment system and discharge point, liaison with Council, sampling of discharge and receiving waters – adverse effects on receiving environment	No
7. Limits quarry catchment area	Inspections of site	Yes
8. Company to install and maintain water meter and datalogger on discharge	Inspections, meter verification and supply of water meter data - No data provided, flowmeters require moving.	No
9. Specifications on discharge records	Auditing of discharge records	No

<b>Purpose: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
10. Measuring and recording equipment to be accessible for data retrieval	Inspection	Yes
11. Active quarry site to be contoured and bunded to direct water into treatment system	Inspections of treatment system and site	Yes
12. Discharge concentration limits	Physicochemical sampling	Yes
13. Discharge to not adversely affect receiving waters	Inspection and physicochemical sampling of receiving waters, biological sampling - Change in colour and visual clarity	No
14. Turbidity limit for receiving waters relative to discharge	Physicochemical sampling – Exceedance of turbidity limits	No
15. Contingency plan maintained	Plan received – Requires updating	Yes
16. Optional review of consent	Optional annual review for 5 years, 2-yearly intervals afterwards. Next review June 2021	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent		<b>Improvement required</b>
Overall assessment of administrative performance in respect of this consent		<b>Improvement required</b>

N/A = not applicable

Table 9 Civil Quarries Ltd summary of performance for consent 10247-1.1

<b>Purpose: To take groundwater incidental to quarry operations and for aggregate washing purposes</b>		
<b>Condition requirement</b>	<b>Means of monitoring during period under review</b>	<b>Compliance achieved?</b>
1. Abstraction rate shall not exceed 20 L/s	Inspections and data review	No
2. Installation and maintenance of water meter and datalogger at water take	Inspections and data review – Flowmeter requires moving and no data provided.	No
3. Abstraction data formatting and supply requirements	Abstraction data review	No
4. Flow meter to be verified	Inspection and certification to be supplied at least once every 5 years	Yes
5. Company to notify if recording equipment repairs are required	Notification if and when required – flowmeters were not working	No
6. Company to undertake groundwater monitoring programme	Monitoring programme has been supplied but no monitoring undertaken yet	No
7. Water meters to be accessible for data retrieval	Inspections	Yes

Purpose: <i>To take groundwater incidental to quarry operations and for aggregate washing purposes</i>		
Condition requirement	Means of monitoring during period under review	Compliance achieved?
8. Company to adopt best practicable option to minimise adverse effects on groundwater	Inspections, data review, groundwater level monitoring – monitoring programme yet to be undertaken	No
9. Optional review of consent	Optional annual review for 5 years, 2-yearly intervals afterwards. Next review June 2021.	N/A
Overall assessment of consent compliance and environmental performance in respect of this consent Overall assessment of administrative performance in respect of this consent		<b>Improvement required</b> <b>Improvement required</b>

Table 10 Evaluation of environmental performance over time

Year	Consent no	High	Good	Improvement req	Poor
2017	1113-5	-	-	1	-
	10247-1	-	-	1	-
2018	1113-5	-	-	1	-
	10247-1	-	-	1	-
2019	1113-5.1	-	-	1	-
	10247-1.1	-	-	1	-
Totals	-	0	0	6	0

During the year, the Company demonstrated a level of environmental and administrative performance with the resource consents that required improvement, as defined in Section 1.1.4. During the year under review there were two occasions where discharge was found to be having adverse effects on the receiving water and there were ongoing issues with the flowmeters and data provision. The Company has made upgrades to the stormwater system and installed groundwater monitoring bores, which will be monitored in the following year.

### 3.4 Recommendations from the 2018-2019 Annual Report

In the 2018-2019 Annual Report, it was recommended:

1. THAT in the first instance, the agreed timeline of works for implementing the EMP, including drilling of groundwater monitoring bores be carried out without delays.
2. THAT monitoring of consented activities at Civil Quarries in the 2019-2020 year continue at the same level as in 2018-2019.
3. THAT should there be issues with environmental or administrative performance in 2019-2020, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
4. THAT the option for a review of resource consent(s) in June 2020, as set out in condition 16 of consent 1113-5.1 and condition 9 or consent 10247-1 not be exercised, on the grounds that aspects

of the monitoring programme still need to be implemented and effects have not yet been determined.

All recommendations have been implemented. The Company has installed the groundwater monitoring bores and the groundwater monitoring component of the programme will begin in the following year. Additional investigations were carried out following repeat non-compliant sampling results and the Company improved the stormwater treatment system as a result.

### 3.5 Alterations to monitoring programmes for 2020-2021

In designing and implementing the monitoring programmes for air/water discharges in the region, the Council has taken into account:

- the extent of information already made available through monitoring or other means to date;
- its relevance under the RMA;
- the Council's obligations to monitor consented activities and their effects under the RMA;
- the record of administrative and environmental performances of the consent holder; and
- 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 exercising resource consents.

It is proposed that for 2020-2021 the monitoring programme shall be undertaken as per 2019-2020.

It should be noted that the proposed programme represents a reasonable and risk-based level of monitoring for the site(s) in question. The Council reserves the right to subsequently adjust the programme from that initially prepared, should the need arise if potential or actual non-compliance is determined at any time during 2020-2021.

### 3.6 Exercise of optional review of consent

Resource consent 1113-5.1 provides for an optional review of the consent in June 2021. Condition 16 allows the Council to review the consent for the purposes of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the 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, specifically including the turbidity limits set in condition 14.

Resource consent 10247-1.1 provides for an optional review of the consent in June 2021. Condition 9 allows the Council to review the consent for the purposes of ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of the resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or requiring continuous measuring and recording of the flow immediately downstream of the take site.

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

## 4 Recommendations

1. THAT in the first instance, the position of the flowmeters be relocated to fit the requirements of the resource consent, in agreement with the Council.
2. THAT the submitted Environmental Monitoring Programme is carried out as agreed.
3. THAT monitoring of consented activities at Everett Road quarry in the 2020-2021 year continue at the same level as in 2019-2020.
4. THAT should there be issues with environmental or administrative performance in 2020-2021, monitoring may be adjusted to reflect any additional investigation or intervention as found necessary.
5. THAT the option for a review of resource consent(s) in June 2021, as set out in condition 16 of consent 1113-5.1 and condition 9 of consent 10247-1.1 not be exercised, on the grounds that aspects of the monitoring programme still need to be implemented and effects have not yet been determined.



## Glossary of common terms and abbreviations

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

Biomonitoring	Assessing the health of the environment using aquatic organisms.
Conductivity	Conductivity, an indication of the level of dissolved salts in a sample, usually measured at 25°C and expressed in mS/m.
EMP	Environmental Monitoring Programme
EPT (taxa)	Ephemeroptera, Plecoptera, Tricoptera Index (mayflies, stoneflies and caddisflies).
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.
Incident Register	The 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.
m <sup>2</sup>	Square Metres.
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.
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.
MPN	Most Probable Number. A method used to estimate the concentration of viable microorganisms in a sample.
mS/m	Millisiemens per metre.
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).
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	<i>Resource Management Act 1991</i> and including all subsequent amendments.

SMP	Stormwater Management Plan.
SS	Suspended solids.
SQMCI	Semi quantitative macroinvertebrate community index.
Temp	Temperature, measured in °C (degrees Celsius).
Turb	Turbidity, expressed in NTU.

For further information on analytical methods, contact a Science Services Manager.

## Bibliography and references

- Fowles, CR (2015): *Biomonitoring of the Kurapete Stream in relation to the New Plymouth District Council's Inglewood oxidation ponds system, February 2015*. TRC Internal Report CF635.
- Fowles, CR (2014): *Biomonitoring of the lower reaches of the Kurapete Stream in relation to Inglewood Metal Ltd quarry discharges, February 2014*. TRC Internal Report CF601.
- Fowles, CR (2013): *Biomonitoring of the lower reaches of the Kurapete Stream in relation to Inglewood Metal Ltd quarry discharges, February 2013*. TRC Internal Report CF568.
- Fowles, CR (2012): *Biomonitoring of the lower reaches of the Kurapete Stream in relation to Inglewood Metal Ltd quarry discharges, March 2012*. TRC Internal Report CF552.
- Fowles, CR (2011): *Biomonitoring of the lower reaches of the Kurapete Stream in relation to Inglewood Metal Ltd quarry discharges, February 2011*. TRC Internal Report CF525.
- Fowles, CR (2010): *Biomonitoring of the lower reaches of the Kurapete Stream in relation to Inglewood Metal Ltd quarry discharges, February 2010*. TRC Internal Report CF500.
- Fowles, CR (2009): *Biomonitoring of the lower reaches of the Kurapete Stream in relation to Inglewood Metal Ltd quarry discharges, February 2009*. TRC Internal Report CF481.
- Sutherland, DL (2019): *Biomonitoring of the Kurapete Stream in relation to Civil Quarries Limited Everett Road Quarry discharges, February 2019*. TRC Internal Report DS122.
- Taranaki Regional Council (2019): *Civil Quarries Limited-Everett Road Quarry Monitoring Programme Annual Report 2018-2019*. Technical Report 2019-92.
- Sutherland, DL (2018): *Biomonitoring of the Kurapete Stream in relation to Civil Quarries Limited Everett Road Quarry discharges, March 2018*. TRC Internal Report DS094.
- Taranaki Regional Council (2018): *Civil Quarries Limited-Everett Road Quarry Monitoring Programme Annual Report 2017-2018*. Technical Report 2018-98.
- Sutherland, DL (2017): *Biomonitoring of the Kurapete Stream in relation to Civil Quarries Limited Everett Road Quarry discharges, February 2017*. TRC Internal Report DS068.
- Taranaki Regional Council (2017): *Civil Quarries Limited-Everett Road Quarry Monitoring Programme Annual Report 2016-2017*. Technical Report 2017-73.
- Sutherland, DL (2016): *Biomonitoring of the Kurapete Stream in relation to Civil Quarries Limited Everett Road Quarry discharges, March 2016*. TRC Internal Report DS051.
- Taranaki Regional Council (2016): *Inglewood Metal Ltd Quarry Monitoring Programme Annual Report 2015-2016*. Technical Report 2016-119.
- Taranaki Regional Council (2015): *Inglewood Metal Ltd Monitoring Programme Annual Report 2014-2015*. Technical Report 2015-08.
- Taranaki Regional Council (2014): *Inglewood Metal Ltd Monitoring Programme Annual Report 2013-2014*. Technical Report 2014-15.
- Taranaki Regional Council (2013): *Inglewood Metal Ltd Monitoring Programme Annual Report 2012-2013*. Technical Report 2013-28.
- Taranaki Regional Council (2012): *Inglewood Metal Ltd Monitoring Programme Annual Report 2011-2012*. Technical Report 2012-10.

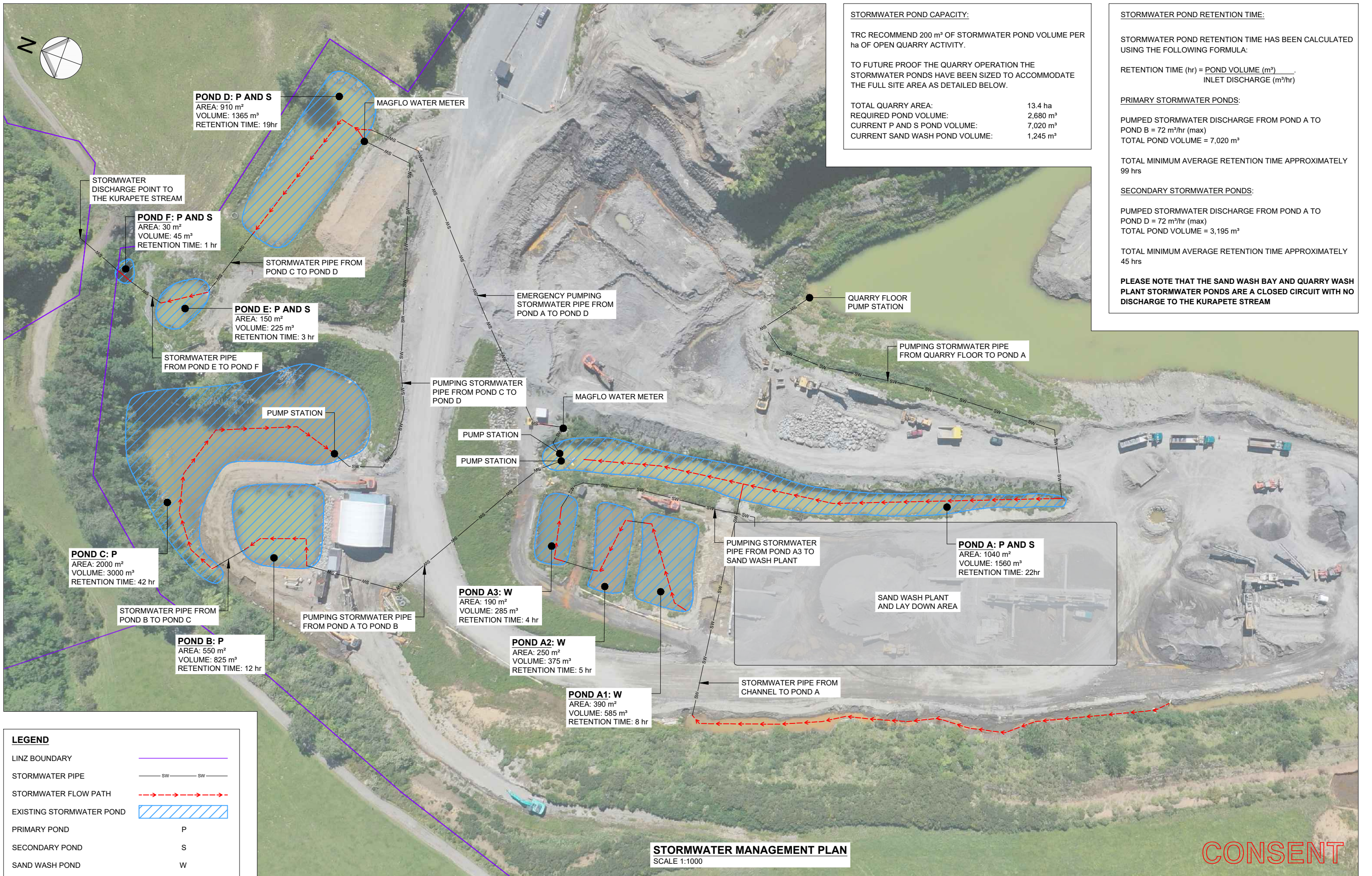
- Taranaki Regional Council (2011): *Inglewood Metal Ltd Monitoring Programme Annual Report 2010-2011*. Technical Report 2011-12.
- Taranaki Regional Council (2010): *Inglewood Metal Ltd Monitoring Programme Annual Report 2009-2010*. Technical Report 2010-17.
- Taranaki Regional Council (2009): *Inglewood Metal Ltd Monitoring Programme Annual Report 2008-2009*. Technical Report 2009-15.
- Taranaki Regional Council (2008): *Inglewood Metal Ltd Monitoring Programme Annual Report 2007-2008*. Technical Report 2008-54.
- Taranaki Regional Council (2007): *Inglewood Metal Ltd Monitoring Programme Annual Report 2006-2007*. Technical Report 2007-49.
- Taranaki Regional Council (2006): *Inglewood Metal Ltd Monitoring Programme Annual Report 2005-2006*. Technical Report 2006-46.
- Taranaki Regional Council (2005): *Inglewood Metal Ltd Monitoring Programme Annual Report 2004-2005*. Technical Report 2005-34.
- Taranaki Regional Council (2004): *Inglewood Metal Ltd Monitoring Programme Annual Report 2003-2004*. Technical Report 2004-47.
- Taranaki Regional Council (2003): *Inglewood Metal Ltd Monitoring Programme Annual Report 2002-2003*. Technical Report 2003-58.
- Taranaki Regional Council (2002): *Inglewood Metal Ltd Monitoring Programme Annual Report 2001-2002*. Technical Report 2002-11.
- Taranaki Regional Council (2001): *Inglewood Metal Ltd Monitoring Programme Annual Report 2000-2001*. Technical Report 2001-39.
- Taranaki Regional Council (2000): *Inglewood Metal Ltd Monitoring Programme Annual Report 1999-2000*. Technical Report 2000-65.
- Taranaki Regional Council (1999): *Quarries Monitoring Programme Annual Report 1998-99 Inglewood Metal Ltd*. Technical Report 99-86.
- Taranaki Regional Council (1998): *Quarries Monitoring Programme Annual Report 1997-98. Inglewood Metal Ltd*. Technical Report 98-63.
- Taranaki Regional Council (1997): *Quarries Monitoring Programme Annual Report 1996-97. Inglewood Metal Ltd*. Technical Report 97-46.
- Taranaki Regional Council (1996): *Quarries Monitoring Programme Annual Report 1995-96. Inglewood Metal Ltd*. Technical Report 96-15c.
- Taranaki Regional Council (1992): *Regional Policy Statement Working Paper. Aggregate extraction in Taranaki*. TRC Report.

## Appendix I

Map of stormwater and washwater  
treatment system December 2020



File Name: \\192.168.1.253\Red Jacket Data\JOBSh-4001-4500\4101-4150\4147 Everett Road Quarry - Stormwater Report\Drawing\100-441.dwg - C1-1 Plot Date: 21/12/2020 Plot Time: 15:59



**STORMWATER POND CAPACITY:**  
 TRC RECOMMEND 200 m<sup>3</sup> OF STORMWATER POND VOLUME PER ha OF OPEN QUARRY ACTIVITY.  
 TO FUTURE PROOF THE QUARRY OPERATION THE STORMWATER PONDS HAVE BEEN SIZED TO ACCOMMODATE THE FULL SITE AREA AS DETAILED BELOW.

TOTAL QUARRY AREA:	13.4 ha
REQUIRED POND VOLUME:	2,680 m <sup>3</sup>
CURRENT P AND S POND VOLUME:	7,020 m <sup>3</sup>
CURRENT SAND WASH POND VOLUME:	1,245 m <sup>3</sup>

**STORMWATER POND RETENTION TIME:**  
 STORMWATER POND RETENTION TIME HAS BEEN CALCULATED USING THE FOLLOWING FORMULA:  

$$\text{RETENTION TIME (hr)} = \frac{\text{POND VOLUME (m}^3\text{)}}{\text{INLET DISCHARGE (m}^3\text{/hr)}}$$

**PRIMARY STORMWATER PONDS:**  
 PUMPED STORMWATER DISCHARGE FROM POND A TO POND B = 72 m<sup>3</sup>/hr (max)  
 TOTAL POND VOLUME = 7,020 m<sup>3</sup>

TOTAL MINIMUM AVERAGE RETENTION TIME APPROXIMATELY 99 hrs

**SECONDARY STORMWATER PONDS:**  
 PUMPED STORMWATER DISCHARGE FROM POND A TO POND D = 72 m<sup>3</sup>/hr (max)  
 TOTAL POND VOLUME = 3,195 m<sup>3</sup>

TOTAL MINIMUM AVERAGE RETENTION TIME APPROXIMATELY 45 hrs

**PLEASE NOTE THAT THE SAND WASH BAY AND QUARRY WASH PLANT STORMWATER PONDS ARE A CLOSED CIRCUIT WITH NO DISCHARGE TO THE KURAPETE STREAM**

**LEGEND**

LINZ BOUNDARY	
STORMWATER PIPE	
STORMWATER FLOW PATH	
EXISTING STORMWATER POND	
PRIMARY POND	P
SECONDARY POND	S
SAND WASH POND	W

3 DAVIDSON STREET  
 NEW PLYMOUTH 4310  
 Ph. 06 759 0999  
 © COPYRIGHT RED JACKET LTD

21.12.20	A	ISSUED FOR CONSENT	MM	LB	-	CM
DATE	REV	REV RECORD	BY	CHD	VER	APP

Client  
**TARANAKI CIVIL CONSTRUCTION LIMITED**

Project  
**STORMWATER MANAGEMENT EVERETT ROAD QUARRY INGLEWOOD**

Sheet Title  
**STORMWATER MANAGEMENT PLAN**

Drawing No.	<b>100-441</b>	A3
Job No.	<b>4147</b>	
Sheet No.	<b>C1-1</b>	REV.
		<b>A</b>

**CONSENT**

**STORMWATER MANAGEMENT PLAN**  
 SCALE 1:1000





## Appendix II

### Resource consents held by Civil Quarries Ltd

(For a copy of the signed resource consent  
please contact the TRC Consents department)

### Water abstraction permits

Section 14 of the RMA stipulates that no person may take, use, dam or divert any water, unless the activity is expressly allowed for by a resource consent or a rule in a regional plan, or it falls within some particular categories set out in Section 14. Permits authorising the abstraction of water are issued by the Council under Section 87(d) of the RMA.

### Water 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. Permits authorising discharges to water are issued by the Council under Section 87(e) of the RMA.

### Air discharge permits

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. Permits authorising discharges to air are issued by the Council under Section 87(e) of the RMA.

### 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. Permits authorising the discharge of wastes to land are issued by the Council under Section 87(e) of the RMA.

### Land use permits

Section 13(1)(a) of the RMA stipulates that no person may in relation to the bed of any lake or river use, erect, reconstruct, place, alter, extend, remove, or demolish any structure or part of any structure in, on, under, or over the bed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Land use permits are issued by the Council under Section 87(a) of the RMA.

### Coastal permits

Section 12(1)(b) of the RMA stipulates that no person may erect, reconstruct, place, alter, extend, remove, or demolish any structure that is fixed in, on, under, or over any foreshore or seabed, unless the activity is expressly allowed for by a resource consent, a rule in a regional plan, or by national regulations. Coastal permits are issued by the Council under Section 87(c) of the RMA.

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

Name of  
Consent Holder: Civil Quarries Limited  
PO Box 108  
Inglewood 4347

Decision Date  
(Change): 11 June 2019

Commencement Date  
(Change): 11 June 2019 (Granted Date: 1 December 2016)

**Conditions of Consent**

Consent Granted: To take groundwater incidental to quarry operations and for aggregate washing purposes

Expiry Date: 1 June 2033

Review Date(s): June 2020, June 2021, June 2022, June 2023, June 2024,  
June 2026, June 2028, June 2030, June 2032

Site Location: Everett Road, Inglewood

Grid Reference (NZTM) 1710429E-5668228N

Catchment: Waitara

Tributary: Manganui  
Kurapete

*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 rate of taking shall not exceed 20 litres per second.
2. Before 31 July 2019 the consent holder shall install, and thereafter maintain a water meter and a datalogger at the site of taking (or a nearby site in accordance with Regulation 10 of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010). The water meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of water taken to an accuracy of  $\pm 5$ , at intervals not exceeding 15 minutes. Records of the date, the time and the rate and volume of water taken shall be made available to the Chief Executive, Taranaki Regional Council at all reasonable times.

*Note: Water meters must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters have a limited lifespan.*

3. The records of water taken shall:
  - a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing;
  - b) specifically record the water taken as 'zero' when no water is taken; and
  - c) be transmitted to the Taranaki Regional Council's computer system within 2 hours of being recorded.
4. The consent holder shall provide the Chief Executive, Taranaki Regional Council with a document from a suitably qualified person certifying that water measuring equipment required by the conditions of this consent ('the equipment'):
  - a) has been installed and/or maintained in accordance with the manufacturer's specifications; and/or
  - b) has been tested and shown to be operating to an accuracy of  $\pm 5\%$ .

The documentation shall be provided:

- i) within 30 days of the installation of a water meter;
- ii) at other times when reasonable notice is given and the Chief Executive, Taranaki Regional Council has reasonable evidence that the equipment may not be functioning as required by this consent; and
- iii) no less frequently than once every five years.

## Consent 10247-1.1

5. If any measuring or recording equipment breaks down, or for any reason is not operational, the consent holder shall advise the Chief Executive, Taranaki Regional Council immediately. Any repairs or maintenance to this equipment must be undertaken by a suitably qualified person.
6. The consent holder shall undertake a monitoring programme that monitors the effects of this consent on the surrounding aquifer. The monitoring programme shall be submitted to the Chief Executive, Taranaki Regional Council for certification before 31 July 2019 and shall include the drilling and monitoring of a minimum of three bores at locations determined after consultation with the Chief Executive, Taranaki Regional Council.
7. All measuring and recording equipment required by this consent shall be accessible to Taranaki Regional Council Officers at all reasonable times for inspection and/or data retrieval.
8. At all times, the consent holder shall adopt the best practical option to prevent or minimise any actual or likely adverse effect on the environment associated with the abstraction of groundwater.
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 annually for the first 5 years and at 2-yearly intervals thereafter for the purposes of:
  - a) ensuring that the conditions are adequate to deal with any adverse effects on the environment arising from the exercise of this resource consent, which were either not foreseen at the time the application was considered or which it was not appropriate to deal with at the time; and/or
  - b) requiring continuous measuring and recording of the flow immediately downstream of the take site.

Signed at Stratford on 11 June 2019

For and on behalf of  
Taranaki Regional Council

---

A D McLay  
**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: Civil Quarries Limited  
PO Box 108  
Inglewood 4347

Decision Date  
(Change): 11 June 2019

Commencement Date  
(Change): 11 June 2019 (Granted Date: 1 December 2016)

**Conditions of Consent**

Consent Granted: To discharge treated stormwater and treated groundwater from quarry activities into an unnamed tributary of the Kurapete Stream

Expiry Date: 1 June 2033

Review Date(s): June 2020, June 2021, June 2022, June 2023, June 2024, June 2026, June 2028, June 2030, June 2032

Site Location: Everett Road, Inglewood

Grid Reference (NZTM) 1710454E-5668324N

Catchment: Waitara

Tributary: Manganui  
Kurapete

*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. Subject to condition 2 the discharge rate shall not exceed 20 litres per second
- 2. The rate of discharge may exceed 20 litres per second if:
  - a) it is initiated no more than 15 hours after 'heavy rain', as defined in condition 4 below; and
  - b) it reduces to no more than 20 litres per second within 36 hours of the most recent 'heavy rain' event; and
  - c) it is reasonably necessary to return the quarry to an operational state.
- 3. From 1 August 2019, the site shall be operated in accordance with a 'Stormwater Management Plan' (SMP) approved by the Chief Executive, Taranaki Regional Council, acting in a certification capacity. The SMP shall detail how the site is managed to achieve compliance with the conditions of this consent and shall include, as a minimum, details of:
  - a) the treatment of stormwater, washwater and groundwater, including the pond configuration;
  - b) management/ recycling of washwater on site;
  - c) disposal of recycled washwater;
  - d) management of the pond treatment systems; and
  - e) maintenance programme for the treatment system;
- 4. No washwater shall enter the stormwater treatment system, unless it is due to heavy rain within the previous 24 hours. For the purposes of this consent 'heavy rain' refers to rainfall recorded at the 'Manganui at Everett Park' rain gauge that exceeds any of the rainfall intensities listed below:

Rainfall Intensity
10.7 mm in 10 minutes
15.7 mm in 20 minutes
19.2 mm in 30 minutes
25.8 mm in 1 hour
41.5 mm in 3 hours
88.0 mm in 12 hours
109 mm in 24 hours
146 mm in 72 hours

- 5. The discharge into the unnamed tributary of the Kurapete Stream shall be located at (NZTM) 1710454E-5668324N.



## Consent 1113-5.1

6. At all times, the consent holder shall adopt the best practicable option (as defined in Part 2 of the Resource Management Act 1991) to prevent or minimise any actual or likely adverse effect on the environment associated with the discharge, including by preventing the flow of uncontaminated water into the quarry.
7. The active quarry stormwater catchment shall be no more than 13.5 hectares.
8. Before 31 July 2019 the consent holder shall install, and thereafter maintain, a meter and a datalogger at the site of discharge into the unnamed tributary of the Kurapete Stream. The meter and datalogger shall be tamper-proof and shall measure and record the rate and volume of the discharge to an accuracy of  $\pm 5\%$ , at intervals not exceeding 15 minutes. Records of the date, the time and the rate and volume the discharge, shall be made available to the Chief Executive, Taranaki Regional Council on request.

*Note: Meters must be installed, and regularly maintained, in accordance with manufacturer's specifications in order to ensure that they meet the required accuracy. Even with proper maintenance water meters have a limited lifespan.*

9. The discharge records required by condition 8 shall:
  - a) be in a format that, in the opinion of the Chief Executive, Taranaki Regional Council, is suitable for auditing;
  - b) specifically record the discharge as 'zero' when no discharge is occurring; and
  - c) be transmitted to the Taranaki Regional Council's computer system within 2 hours of being recorded.
10. All measuring and recording equipment required by this consent shall be accessible to Taranaki Regional Council Officers at all reasonable times for inspection and/or data retrieval.
11. The site shall be contoured and bunded so that all water is directed to the pond system for treatment prior to discharge. No water shall be discharged unless it has passed through the treatment pond system as detailed in the 'Stormwater Management Plan' required by condition 3 above.
12. Constituents of the discharge shall meet the standards shown in the following table.

<b>Constituent</b>	<b>Standard</b>
pH	Within the range 6.0 to 9.0
suspended solids	Concentration not greater than 100 gm <sup>-3</sup>
total recoverable hydrocarbons	Concentration not greater than 15 gm <sup>-3</sup>

These standards shall apply prior to the entry of any discharge into the receiving waters of the unnamed tributary of the Kurapete Stream, at a designated sampling point approved by the Chief Executive.

## Consent 1113-5.1

13. Beyond 25 metres downstream of the confluence of the unnamed tributary with the Kurapete Stream, the discharge shall not give rise to any of the following effects in the receiving waters of the Kurapete Stream:
  - a) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; and/or
  - b) any conspicuous change in the colour or visual clarity; and/or
  - c) any emission of objectionable odour; and/or
  - d) the rendering of fresh water unsuitable for consumption by farm animals; and/or
  - e) any significant adverse effects on aquatic life.
14. Beyond 25 metres downstream of the confluence of the unnamed tributary with the Kurapete Stream, the discharge shall not give rise to an increase in turbidity of the Kurapete Stream of more than 50%, as determined using NTU (nephelometric turbidity units).
15. The consent holder shall maintain and regularly update a 'Contingency Plan' that details measures and procedures to be undertaken to prevent, and to avoid environmental effects from a spillage or any discharge of contaminants not authorised by this consent. The plan and any amended versions shall be provided to the Chief Executive of the Taranaki Regional Council.
16. 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 annually for the first 5 years and at 2-yearly intervals thereafter for the purposes 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, specifically including the turbidity limits set in condition 14.

Signed at Stratford on 11 June 2019

For and on behalf of  
Taranaki Regional Council

---

A D McLay  
**Director - Resource Management**