



**Three Kings Quarry and Controlled Fill
Permit Numbers 36221, 36222, 37770, R/LUC/2009/743**

**Landuse, Earthworks and Discharges associated with the
Development of a Controlled Fill at Three Kings**

Annual Management Plan

March 2012

Annual Management Plan

Three Kings Quarry and Controlled Fill Permit Number 36221, 36222, 37770 and R/LUC/2009/743

Introduction

The following report is made with regard to Conditions 66 and 76 of the above permits. The conditions of these permits were issued as an amalgamated set of consent conditions.

Condition 66 reads,

All erosion and sediment control measures shall be constructed and maintained in accordance with those described in the application. These measures shall be documented by the Consent Holder in an Annual Management Plan (AMP).

Condition 76

Prior to the commencement of work, and annually thereafter, the AMP shall be submitted to the Council containing the following information:

- (a) Plans for fill and associated earthworks, including the proposed fill contour over the next 12 months.*
- (b) Details of maintenance activities in respect of erosion and sediment control measures undertaken in the previous 12 months, and maintenance activities proposed over the next 12 months.*
- (c) Summary of sampling results for suspended solids and turbidity, carried out during the previous 12 months.*
- (d) Details of any problems in respect of water management on the site during the previous 12 months, and proposals for addressing such problems.*
- (e) Where necessary calculations to confirm compliance (or otherwise) with TP90 over the next 12 months.*
- (f) Information that provides an early indication to the Manager when the height of the fill reaches a level 10m below the final fill levels identified in Harrison Grierson Plan 122314 Fig 002, so as to ensure that the provisions of Conditions 9, 10 and 77 are able to be met.*
- (g) Where site closure is proposed in the following 12 months, the Plan should also address the following matters:*
 - i. Proposals for stabilisation of the site;*
 - ii. Proposals for the ongoing treatment of any discharges from the site;*
 - iii. Provision of the final contour plan following the consultation set out in Condition 77;*
 - iv. A survey of the current fill levels from where the engineered filling is to begin; and*

- v. *Provision of a plan that quantifies the difference between the levels shown on Harrison Grierson plan 122314 FIG 002 and any additional filling sought to meet the considerations expressed in the consultation required by Condition 77.*

This report has been issued prior to commencement of fill activities which is scheduled to commence on 2nd of April 2012.

Each of the items list in Condition 76 have been addressed below maintaining the same order as above.

(a) Plans for Fill and Associated Earthworks

Over the next twelve months quarrying will occur largely in the southern section of the site with fill operations primarily in the northern portion of site. A site plan showing these locations is attached to this report.

The rate of quarrying depends on a number of factors. The state of the market (demand) is a significant variable outside Winstone's control. It dictates the level of sales and production activity. Similarly, the rate of importation of fill is again dictated by the market and factors that drive projects and their productivity.

No areas of quarrying will be quarried lower than RL34m. Areas of fill will progress from RL34m at a rate determined by the market conditions and to no more than the levels detailed in the consent (Harrison Grierson plan 122314 Fig 002 attached).

At this stage the volume of material to be imported over the next 12 months is relatively unknown as there is no relevant data to provide a baseline. However the proposed fill contour of the area shown as the Initial Fill Area on the site plan attached is expected to be to no more than RL50m over the next 12 months.

An update to this Annual Management Plan will be submitted by 30 June 2012. This will provide the opportunity to further define the proposed contours based on the data gathered on rates of fill received over the first few months of operation.

(b) Erosion and Sediment Control Measures and Maintenance

This site is not a typical earthworks operation where sediment laden discharges are directed to devices constructed in accordance with TP90 as all discharges from the earthworks will be to ground.

During the initial stages of fill operation, runoff will be directed to the pit floor.

As the pit floor is filled, infiltration of runoff will change from predominantly pit floor soakage to infiltration at the perimeter of the fill.

Groundwater water quality monitoring has commenced with groundwater that is being pumped from the site being monitored quarterly for suspended solids and turbidity. The results of this sampling are provided in the following section.

Maintenance of erosion and sediment control measures in the previous 12 months has consisted of upgrading the existing wheel wash (located adjacent to the new weighbridge).

It is not anticipated that any maintenance of erosion and sediment control measures will be required in the upcoming 12 months.

A new wheel wash (in addition to the existing wheelwash) is proposed to be installed at the base of the quarry haul road.

(c) Summary of Sampling

As required by condition 75, water samples have been taken quarterly from the site dewatering bore. These samples were analysed for suspended solids and turbidity.

The results from these samples are as follows:

Sample Date	Total Suspended Solids (mg/L)	Turbidity (NTU)
21 Dec 2012	1.5	*
19 Jan 2012	<1.0	<0.1

*No data due to laboratory oversight.

(d) Water Management

Fill operation have yet to commence. There have been no problems with respect of site water management during the previous 12 months.

Groundwater monitoring will continue with any exceedances reported, investigated and addressed.

(e) TP90 Calculations

No TP90 structures are proposed to be constructed in the upcoming 12 months.

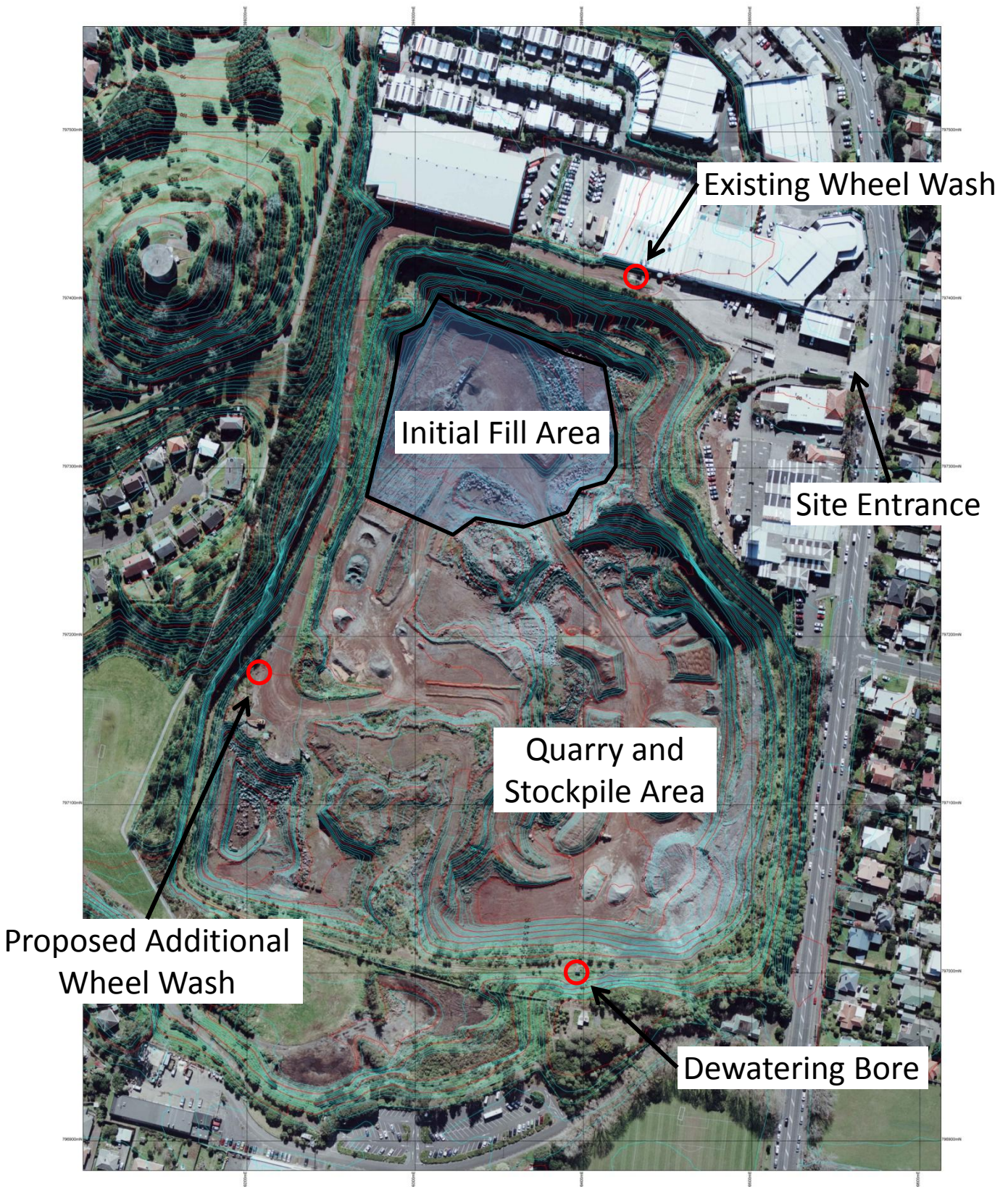
It is not unnecessary to undertake calculations to confirm compliance (or otherwise) with TP90.

(f) Indication of fill levels approaching final levels

Fill levels will not approach a level 10m below the final fill levels (Harrison and Grierson Plan 122314 Fig 002) in the period covered by this Management Plan.

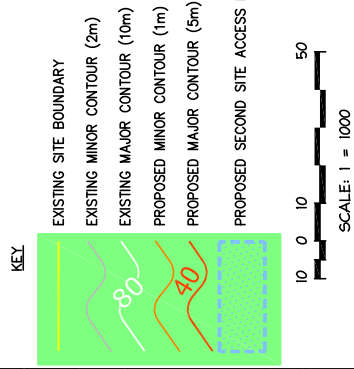
(g) Site Closure

Site closure is not proposed in the upcoming 12 months.



AMP March 2012 – Site Plan

AREAS AND BOUNDARIES SHOWN ARE
SUBJECT TO SURVEY.



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[illegible]

THREE KINGS QUARRY



FIGURE 2
PROPOSED LANDFORM FOR
CLEANFILL CONSENTS

DESIGNED:	DATE:	SIGNATURE:	PLOT DATE: 10.10.08
DRAWN:	DATE:	SIGNATURE:	
DAS	29/08/2008		CAD REF: 12314F60-27114g
CHECKED:	DATE:	SIGNATURE:	CAD REF:
APPROVED:	DATE:	SIGNATURE:	SURVEY DATE:
			SUR REF:

EOD CONSENT

HG REF:	1021-122314-01	SCALES:	1:1000 1:2000 (A3)	A1
DRAWING No:				REV

122314-FIG-002