

Your Ref:

1051/1431

Our Ref:

CONSULTANTS IN GEOTECHNICAL ENGINEERING, GEOLOGY & ENGINEERING GEOLOGY

Level 1 18 St Martins Lane Auckland City  
PO Box 47-822 Ponsonby Auckland 1144 New Zealand  
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30<sup>th</sup> June 2009

The General Manager  
ARC Environment  
Private Bag 92-012  
AUCKLAND



Attention Barry McDonell

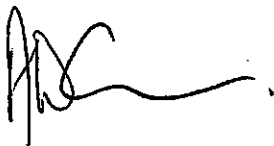
**RE: LAWSON & ZAMBUCKA COATESVILLE QUARRY, COATESVILLE.  
2009 QUARRY MANAGEMENT PLAN  
PERMIT 27703**

Please find attached the updated Coatesville Quarry Management Plan as required by  
ARC Consent 27703.

We trust this is sufficient for your requirements however should you have any queries we  
will be pleased to assist..

Yours faithfully

ORMISTON ASSOCIATES LTD.



A W. Ormiston

Director

cc Barry McDonnell

22 Helvetia Drive

Browns Bay

cc. Chris Zambucka

222 Blockhouse Bay Road

AVONDALE

**Directors**

A.W. (Sandy) Ormiston BSc (Geol.) MSc (Eng Geol.) M.Aus.I.M.M.  
L.G. Dooley M.Eng.St, BE (Hons.) (Civil), NZCE, MIPENZ (Geotechnical), C.P.Eng, IPER

**Associates**

B.X. Hill BSc, MSc(Hons) (Geol.)  
G.R. Gill NZCE (Civil), DipEng



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**COATESVILLE QUARRY  
MANAGEMENT PLAN  
2009 2011**

**For: Lawson & Zambucka Limited  
222 Blockhouse Bay Road  
AUCKLAND**

**By: Ormiston Associates Ltd  
P.O. Box 47-822  
Ponsonby**

**Date: June 2009.**

*Directors*

A.W. (Sandy) Ormiston BSc (Geol.) MSc (Eng Geol.) M.Aus.I.M.M.  
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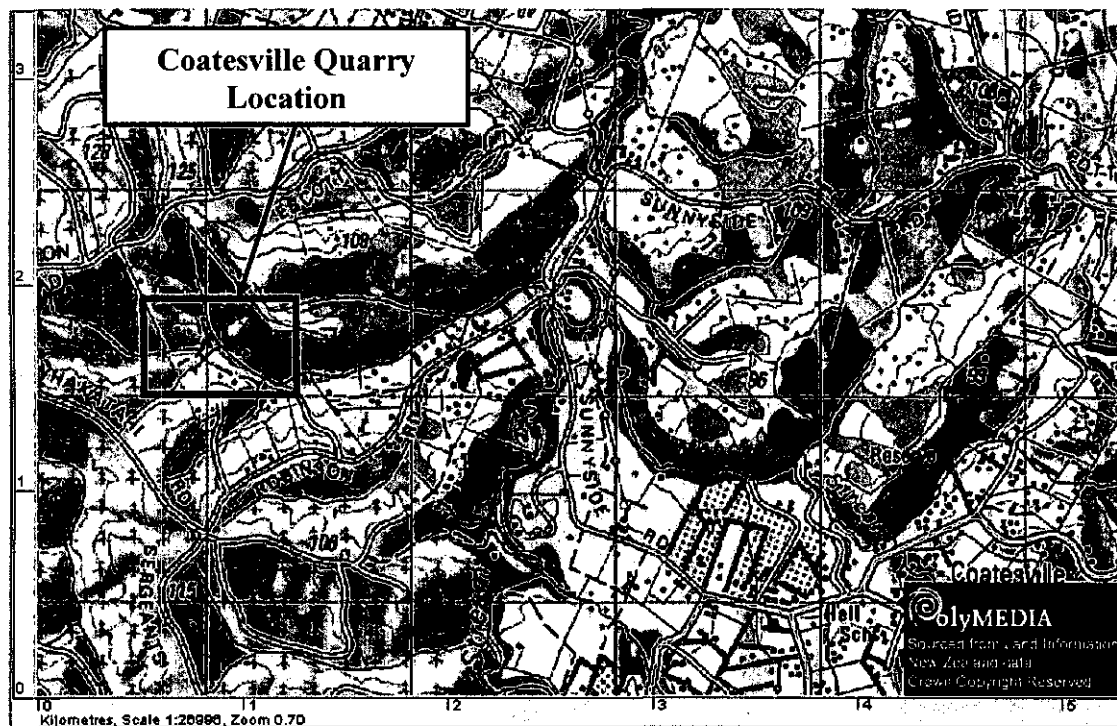
## 1. Introduction

The 2009 Coatesville Quarry Management Plan is an update on the original plan prepared for the quarry and dated June 2002 and as required by Land Use and Sediment Control Permit 27703 condition 20. The quarry comprises two separate operational pits. Conglomerate is extracted from the larger eastern pit and quartz sand/silt from the smaller western pit.

The only operation over the previous 12 months has been some minor extraction of sand/silt from the Quartz Pit.

## 2. Location

Coatesville Quarry is located in a valley between Robertson Road and the formed and clay surfaced southern end of Escott Road. The quarry entrance is located on Robertson Road approximately 1km from the intersection with Sunnyside Road, Coatesville.



**FIGURE 1**  
**COATESVILLE QUARRY LOCATION**

### **3. Management Plan**

#### **3.1 Introduction**

The quarry has been owned and operated by Lawson & Zambucka Ltd since 2001. Over the past three years the Quarry has only been worked on a very intermittent and limited basis with production being small. Over burden stripping originally planned for 2004/2005 has not been undertaken to date. However the consent holder may undertake overburden stripping in the north-western corner over the next 12 months to expose conglomerate for extraction.

Extraction of a limited volume of quartz sand has been undertaken over the previous 12 months.

#### **3.2 Site Description**

The long and narrow property runs between Robertson Road and Escott Road and comprises two lots being Pt103 SO11171 comprising 37.54 ha and Lot 1 DP120864 comprising 9.1511 ha. An all weather access road has been constructed running down from Robertson Road to the Main Conglomerate Quarry and to the smaller Quartz Rock Quarry located further to the northwest. The Main Conglomerate Quarry is located in the valley floor within Pt 103. A second smaller quarry for the extraction of a weak sandstone termed the 'Quartz Rock Quarry' is located to the north west of the main pit. The main conglomerate pit has been excavated into a ridge and the floor level lowered below the surrounding ground level and the adjacent Walsh Creek. A minor stream has been diverted around the northern end of the conglomerate pit workings and discharges into Walsh Creek. Settled water is pumped from the pit into Walsh Creek. The Conglomerate Quarry has been opened up beyond the stream diversion and comprises excavation into a ridge rising to the north west. Stormwater from this area is discharged into the Main Conglomerate Pit.

The Quartz Rock Quarry is located a short distance to the northwest of the main pit at a higher elevation and is excavated into the side of the main ridge.

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Walsh Creek flows through the property from west to east and runs in an incised channel located on the northern side of both pits.

#### **4. LAND STATUS DETAILS.**

The legal description is:

	Part Section 103
	SO 11171
<b>Area:</b>	37.5408 ha
<b>And</b>	Lot 1
	DP 120864
	Parish Of Paremoremo
<b>Area:</b>	9.1511 ha
<b>Property Owner:</b>	Lawson & Zambucka Limited
<b>District Council:</b>	Rodney District Council
<b>Regional Council:</b>	Auckland Regional Council
<b>Quarry Operator:</b>	Lawson & Zambucka Limited
<b>Minerals Ownership:</b>	Private
<b>Rodney District Council Consents</b>	Land Use (current) TP/211/76
<b>Auckland Regional Council Consents</b>	10293 land use consent and Sediment Control (expires 31 May 2011)
	12532 to divert groundwater and to take groundwater from a quarry sump 100m <sup>3</sup> /day (expires 31 May 2011)

#### **5. GEOLOGY**

Geological Map Sheet R11 Whangaparaoa (Schofield 1989) indicates that area is underlain by Albany Conglomerate belonging to the Paremoremo Formation of Miocene Age comprising a boulder conglomerate.

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## **6. QUARRY OPERATION**

### **6.1 Conglomerate Quarry**

The Conglomerate Quarry is operated as a series of batters individually up to about 15 metres in height and up to a maximum combined height of approximately 30 metres. The Conglomerate Quarry is worked by excavators digging the material and loading trucks for transport to the screening plant.

### **6.2 Quartz Quarry**

The Quartz Rock Quarry is also worked by excavators winning the material and loading trucks for transport off-site. No further processing of this material is currently undertaken on-site.

## **7. WORK PLAN / MANAGEMENT PLAN**

The management plan for short and long term development covers extraction requirements for the two quarry pits.

### **7.1 Conglomerate Quarry Development.**

The consent holder proposes to expand the Conglomerate Quarry into the ridge to the northwest as indicated on the appended Drawing No 1051/1431-1 dated June 2005. This work was planned for 2004/2005 but has not been undertaken as the Conglomerate Pit was not worked. Overburden is to be stripped and either sold and taken off-site or placed in one of two locations on-site. The two options for on-site overburden disposal are discussed below.

#### **7.1.1 Option 1.**

Placement of overburden within the shaded area adjacent to the workings. This would be within the limits of the existing workings and sediment control measures. This will result in a larger area of exposed soils however runoff is discharged into the main pit from which settled water is only discharged intermittently by pumping. The increased exposed area will not result in any change in settled water discharge quality.

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### **7.1.2 Option 2.**

Placement of overburden in the Old Quarry Pit adjacent to the access road. Stormwater and sediment control measures are already in place except for minor works comprising deepening of the sediment control pond and preparation of an as-built plan prior to placement of overburden. These works will not be undertaken until spring 2004. Overburden placement in the old quarry will not be initiated until ARC approval for the sediment control measures has been granted.

The appended development plan (refer site plan 1051/1431-1 dated June 2005) indicates the location of existing working faces, stockpile areas and the area proposed for stripping mining during the duration of the next 24 months.

### **7.1.3 Access Road Sediment Control**

Ongoing works are proposed to better control stormwater and sediment runoff back into the main pit from the access road between the old pit and main pit. This is to comprise regrading the access road to shed water back to the pit.

### **7.1.4 Quartz Pit**

Operation of the Quartz Pit is to continue as for the previous management plan. The pit is only intermittently worked on an as required basis and therefore extraction volumes are very low. This Quartz Quarry was the only area of quarry operation over the 2004 / 2005 management plan period.

### **7.1.5 Hours Of Operation.**

The quarry is operated 7.00am to 5.00pm during weekdays and 7.00am to 12.00pm on Saturday. No operation is carried out on Sunday.

### **7.2 Resource Consent Compliance.**

ARC consent file 10293 (Permit 27703) covers sediment control within the quarry. There are sampling and monitoring conditions of compliance detailed below.

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## 7.2.1 Water Quality Sampling Requirements

### Water Sampling Programme A

1. Measure and record rainfall on all working days or when the pit is operating.
2. Main Pit Discharge.
  - Total daily pump discharge volume and duration and rate of water discharge (volume calculation)
3. Water Sampling

Minimum of 3 water samples every 6 months shall be collected from the pump discharge at the following locations.

  - (i) Main quarry pit discharge below the pump outlet prior to discharge into Walsh Creek (1 sample).
  - (ii) Walsh Creek 10 metres **upstream** of discharge point (1 sample).
  - (iii) Walsh Creek 30metres **downstream** of the discharge point (1 sample).

Samples to comprise 1 litre grab samples.

- (iv) Samples to be analysed for suspended solids and turbidity.

### Water Sampling Programme B

When more than 15mm falls within the previous 24 hours 1 litre grab samples are to be collected from the following points and analysed for turbidity and suspended solids.

- (i) Walsh Creek 10 metres upstream of the Quartz pit sediment pond outlet.
- (ii) Discharge from Quartz Pit at the sediment pond outlet.
- (iii) Walsh Creek 30 metres downstream of the Quartz Pit sediment pond outlet.



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Samples should be collected in plastic sampling bottles of at least 1000ml and carefully labelled with the sample site number and date of sampling and samples to be analysed within 1 week of collection. Water samples should be delivered to the nominated laboratory and analysed for suspended solids and turbidity. Results are to be reported to the ARC

### **7.3 Assessment of Results**

As discussed above the Coatesville Quarry has only been operated intermittently since Lawson & Zambucka have taken over operation. The Conglomerate Pit is excavated below the level of Walsh Creek and consequently there is no discharge unless the discharge pump is operated. The pit has a very large storage capacity and excluding any losses via seepage and evaporation it has been only pumped once over the previous 12 months.

#### **7.3.1 2009 Water Sampling Results**

To date no settled water has been discharged from the main pit. The pit is gradually filling with runoff water from the surrounding slopes.

### **7.4 Quartz Pit**

Sampling Programme B requires collection of water samples associated with discharge of settled water from the Quartz Pit sediment pond. As discussed above the site has only been worked intermittently over the previous 12 months and has not been manned when there is rainfall. As a consequence no water sampling has been undertaken.

#### **7.4.1 Reporting**

Rainfall records and sampling results are to be forwarded to the ARC at six monthly intervals.

#### **7.4.2 Compliance With Conditions Of Consent**

The above is in compliance with the conditions of the consent as the consent requires the above sampling programmes only each working day (Condition 16) or when the Main Conglomerate Pit settled water is discharged. As discussed above discharge water and stream water were sampled during pump discharge from the Main Conglomerate Pit. The site has not been manned during wet weather. Site occupancy

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and operation can be expected to increase over time however we are not able to provide a time scale at this stage.

### **7.5 Hazardous Chemicals.**

No hazardous chemicals other than fuel and oil are stored on site. No explosives are stored on site.

#### **7.5.1 Dust.**

Dust is primarily generated by the screening plant and trucks on the access road. Dust emissions from the plant can be controlled by misting the plant if it is generated. Road dust is controlled by damping down the roads using a water cart. The area around the plant can also produce dust but this is wetted down as necessary for control.

#### **7.5.2 Site Security**

Access off Robinson Road is restricted by steel gates, which are locked outside the normal hours of operation.

#### **PREPARED BY**

A W Ormiston  
BSc, MSc (Engineering Geology)  
Director

**COATESVILLE QUARRY WATER QUALITY MONITORING REQUIREMENTS**

**WALSH CREEK WATER SAMPLING**

**MINIMUM OF 3 SAMPLES EVERY 6 MONTHS WHEN WATER DISCHARGED AND QUARRY OPERATED**

	January	February	March	April	May	June	July	August	September	October	November	December
<b>MAIN QUARRY OUT FALL.</b>												
(i). AT PUMP OUT FALL												
(II) 10 metres UPSTREAM												
(III). 30mstres DOWNSTREAM												

**QUARTZ QUARRY WHEN RAINFALL >15mm OVER PREVIOUS 24 HOURS.**

(i). AT OUTFALL												
(II) 10 metres UPSTREAM												
III). 30 metres DOWNSTREAM												

**SAMPLE WHEN PUMP DISCHARGING**

<b>MAIN PIT PUMP</b>	<b>DURING DISCHARGE</b>											
<b>(i). DISCHARGE VOLUME</b>	<b>RECORD VOLUME</b>											

**RAINFALL MONITORING**

<b>MEASURE RAINFALL</b>	<b>DAILY WHEN SITE IS MANNED</b>											
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**RAINFALL RECORD - COATESVILLE QUARRY**

<b>DATE</b>	<b>TIME</b>	<b>RAINFALL (mm)</b>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
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30		
31		

<b>MAIN PIT DISCHARGE PUMP RECORD – COATESVILLE QUARRY</b>		
<b>DATE</b>	<b>TIME</b>	<b>RAINFALL (Cubic Metres)</b>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
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NOTE: All diversion streams to be fenced off to prevent stock entering stream bed. Where required, silt fences should be installed to prevent silt contamination

Install Diversion Bund Along Outside Edge Of Road To Prevent Runoff Entering Walsh Creek

Crushing & Stockpiling Area To Be Regraded To Flow To Main Pit

Road to be Raised for Safety

Existing Silt Detention Pond

Old Quarry Pit

Proposed Stockpile Area

Dish Drain to Convey Water to Main Pit and Treatment Pond. Water to Bypass Existing Watercourse

Culvert or Trench to Convey Water Through High Point in Road

Existing Treatment Pond To Be Cleaned Out And Have A Minimum Volume Of 245m<sup>3</sup>.

Proposed Stream Diversion

Pump Or Gravity Feed Runoff From Central Pit To Main Pit. Pipe To Be Installed Over Diversion Stream

Proposed Stripping Area (Approximate)

**Proposed Main Treatment Pond**  
 - Minimum Volume 1,328m<sup>3</sup>  
 - Intake to pump to be on float decanting from upper 300mm  
 - Minimum detention time 12 hrs following rainfall event greater than 15mm/day

NOTE: Aerial Photo Provided By Precision Aerial Survey Ltd

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 P O Box 47-822 Ponsonby, Auckland New Zealand  
 Ph (00649) 378 1081 Fax (00649) 378 9834

**CLIENT:** Lawson & Zambucka Ltd  
**LOCATION:** Coatesville Quarry, Robinson Road, Coatesville  
**TITLE:** 2004 Stripping Plan

**SCALE:** 1:2500  
**DRAWN:** BXH  
**DATE:** 29-06-09  
**CHECKED:** LGD

**DRAWING NO**  
**1051/1431-1**  
**SHEET 1 OF 1**