

CALGA SAND QUARRY

ANNUAL ENVIRONMENTAL MANAGEMENT

REPORT

2007



1.0 Introduction

2.0 activities during 27007

2.1 Meteorological weather station up date

2.2 site entrance

2.3 Acoustic bund wall maintenance and progressive planting

2.4 Sand extraction and overburden stripping

2.5 Sand processing

2.6 Silt management

2.7 Silt cell capping

2.8 Water management and erosion control

2.9 internal road network

2.10 rehabilitation

2.13 Waste management

3.0 Activities planned for 2008

3.1 Introduction

3.2 Sand extraction

3.3 sand processing

3.4 silt management

3.5 silt capping

3.6 water management

3.7 internal road network

3.8 rehabilitation

4 Complaints received for 2007

5 monitoring results

5.1 Noise monitoring

5.2 ground water and surface water monitoring

5.3 Surface Water Monitoring

5.4 Meteorological Station

5.5 dust monitoring

1.0 Introduction

This review has been prepared in accordance with schedule 5.4 of the conditions of consent issued for the operation of the Calga sand quarry. The review presents the second period of reporting for the period 7th December 2006 to the 6th December 2007. This review presents environmental monitoring data collected during the last 12 months together. With an outline of various activities proposed for 2008.

2.0 Activities during 2007

During 2007, the various activities carried out on site were undertaken generally in accordance with the environmental impact statement and subsequent management plans submitted to the minister of Planning in May 2004. **Figure A** displays the major activities undertaken during the 12 month reporting period.

2.1 Meteorological Weather Station

The weather station continues to record wind direction, wind velocity changes, wind patterns, duration of wind on a continuous basis, updating every 15 minutes. The weather station records rain fall and evaporation every 15 minutes. The Data recorded is collected by Carbon Based environmental for analysis and presented in a monthly report, these reports can be accessed on the Rocla Web site www.rocla.com.au under the section headed Calga management plans.

2.2 Site Entrance.

The site entrance has continued to function as designed. Some improvements were made to the acoustic bund each side of the entrance, drainage improvements were made to reduce ponding of water from Peats Ridge Road.

2.3 Bund Wall Improvement at the Entrance

Maintenance on the bund wall has continued with some areas covered with mulch and replanted due to high rainfall events washing soil away before the vegetation was fully established.



Photo mulched bund

2.4 Sand extraction

Sandstone continued ripped and broken up by the Bulldozer then stockpiled for loading onto the dump truck for delivery to the feed hopper at the wash plant or the dry screen plant .

Photo - Ripping



Photo – Dry Screening Plant



The Power Dry Screening continued to produce yellow and white mortar sand for bricklaying, mainly for residential markets.

Production and sales are low due to the reduced number of housing applications and generally depressed construction industry.

2.5 Sand processing.

Washed sand continued to be processed with production running at half rate due to depressed market and lack of sales.

Sales are expected to improve as we move into 2008 – 09.



2007 Production

| | Brickies | Double Wash Sand |
|--------------------|-----------------|-------------------------|
| | Tonnes | Tonnes |
| December 06 | 2769 | 4645 |
| 2007 | | |
| January | 2963 | 2814 |
| February | 3748 | 6935 |
| March | 6168 | 5561 |
| April | 3745 | 11872 |
| May | 5329 | 16018 |
| June | 3426 | 11649 |
| July | 5931 | 11093 |
| August | 5522 | 9386 |
| September | 5429 | 10253 |
| October | 6137 | 10777 |
| November | 5351 | 11511 |
| TOTAL | 56518 | 112514 |

2.6 Silt Management.

During the reporting period clay/silt fines were placed into cell c2bc where the clay is dewatered and the water recycled into dam 7a for processing again.

Cell c2bc will continue to be filled with silt well into the 2008 reporting period until cell 3.1 becomes available for silt storage.



Photo cell c2bc

2.7 Silt Cell Capping.

Capping continued as water was slowly forced out of the clay silt and drained to dam 7b for recycling in the wash plant.

Capping of cell 4 was completed using clay from Cell 3.1 and sandstone rejected from the sand wash plant, Cells c3a and c3b were capped with clay overburden and reject from the wash plant in preparation for the future wash plant to be located in this area.

The majority of the Quarry stages 1 & 2 have been capped in preparation for the wash plant relocation.



Photo Cell c3a and c3b

2.8 Water Management and erosion control.

The area experienced some very high rain events that caused the sediment dams to fill with sand washed down from the catchments area above them, the sediment dams collected the solids and allowed clean water to return to dam 7bc before overflowing to dam 1 and into Popran Creek. The sediment dams were cleaned out with the excavator and dump truck in preparation for future collection of sediments.

The water sharing facility was directed to Rocla for the full period as discharges were experienced from the all water storage dams in the area.



Photo sediment dam water sharing weir



Photo dam 7bc

2.9 Internal road network.

The haul road continued to be developed to allow access to the bottom of the pit and capped cell area the spine road has been designed to allow for future quarry development.

The road into cell 3.1 was completed and the cell is in the final stages of extraction. A temporary road has been developed for transportation of overburden from cell 3.2 to storage areas on cell 5 and 6.

2.10 Rehabilitation

Rehabilitation has continued on the bund wall with mulching and continued maintenance after high rainfall caused some damage to the bund.

Drainage work was done at the entrance where ponding of water has caused damage to the trees along the front boundary of the Quarry.

Work is planned for 2008 for remediation of a second area where ponding has caused damage to the natural vegetation outside the bund wall this is a large area and will need a separate management plan to ensure compliance with the consent conditions .

2.11 Waste Management

During the reporting period low sulphur diesel was used for mobile equipment and quarry vehicles. The use of petrol was discontinued with replacement of all petrol driven equipment.

Overburden - The overburden removed to expose sandstone was used for capping of silt cells and some clay stored for future rehabilitation work.

Oversize - Oversize removed from the processing plants has been used for capping or recycled back into the wash plant.

Non production wastes - These are generally worn parts from fixed or mobile plant these have been recycled to appropriate recycling centres such as scrap metal and Oil recyclers.

Domestic waste - Small amounts if domestic waste is generated by staff and visitors to site these are disposed of in a bin supplied and collected by licensed contractors.

3 Activities planned for 2008

3.1 Introduction

During 2007 the various activities were undertaken in accordance with the management plans developed to ensure compliance with the approval for the quarry (DA 94-4-2004)

3.2 Sand Extraction

Quarrying is planned to move to Cell 3.2 in 2008 where sandstone will be extracted and transported for processing in the wash plant and the dry screening plant.

3.3 Sand Processing

Sand production is expected to increase during mid 2008 to meet market demands for both washed sand for concrete and the manufacture of blocks and concrete products. Dry screened sand for use in brick- laying mortar is expected to increase in 2008.

3.4 Silt management

Silt is continuing to be placed into cell c2bc this cell will reach capacity later in 2008 ready for capping.

Clay overburden from cell 3.2 is being stockpiled ready for capping of cell c2bc this will be completed early in 2009 the capping will complete the capping of all cells in stages 1 and 2, leaving a land form for future wash plant and stockpiling areas .

3.5 Silt Capping

Silt is continuing to be capped with all of the cells capped up to c2bc. Capping of c2bc will commence later in 2008.



Photo capped cell 4 and 5

3.6 Water Management

Dam 7a and 7bc are the storage dams to collect run off, these dams store water for processing .The water is pumped to dam 12 for transfer to the wash plant.

All run off and water from the pit reports to dam 7b/c for storage or transfer for processing.

Silt cell C2BC will be dewatered ready for capping as the cell is dewatered the water will report to dam 7b for reuse.

Clean water from the drain around the perimeter of the bund wall will continue to report to dam 7bc any overflow will flow to dam 13 and into Popran Creek.

3.7 Internal road network.

The internal road network for sales trucks to travel to and from sand stockpiles will remain unchanged will remain unchanged for 2008.

3.8 Site rehabilitation.

Continuing bund wall maintenance will involve works to stabilise batters damaged during high rainfall periods.

Work will be done to rehabilitate areas outside the bund wall where low lying areas have become ponds causing the trees to become waterlogged and die ,these areas will have the level filled to allow water to drain away with the filled area to be covered with top soil and revegetated and tree planting.



4.0 Complaints Received for year ending 2007

There were no complaints reported to the quarry for year ending 6th December 2007.

5. Monitoring Results.

5.1 Noise Monitoring.

Attended Noise monitoring was conducted at the site on the following dates:

30th March 2007 Quarterly attended monitoring.

13th July Quarterly attended monitoring

25th September Quarterly attended monitoring

16th January 2008 Quarterly monitoring (Late due to recreational leave in 2007)

Unattended noise monitoring was carried out on the 25th September to 10th October 2007.

Noise monitoring concluded that the Quarry is having minimal impact with regard to noise. The traffic on Peats Ridge Road was the most significant noise source.

The Quarry was barely audible from the monitoring points.

A summary of noise monitoring reports are attached in Appendix B

5.2 Ground Water Monitoring.

During the reporting period ground water was monitored on a monthly basis and recorded in reports produced by Carbon Based Environmental Consultants.

During the reporting period the TOC (m) has moved towards the surface as a result of increased rain fall during the period. A summary of the levels is attached in table 4.

Currently no trend can be ascertained from the monitoring long term monitoring is required to evaluate trends in water levels.

Surface water was monitored on a monthly basis. During the reporting period, there was water discharged from site due to high rainfall, samples were taken at Site A and results showed surface water remained within the limits of approval for suspended solids. One result exceeded the total grease by 1.

Depth to water from TOC(m)

| Bore No | April m06 | Nov 07 | Difference in Reading |
|----------------|--------------|-------------|-----------------------|
| CQ 1 | 20.59 | 19.51 | (1.08) |
| CQ2 | 6.23 | 5.74 | 0.49 |
| CQ3 | 8.78 | 8.82 | 0.04 |
| CQ4 | 8.78 | 6.10 | 2.68 |
| CQ5 | 8.69 | 5.05 | 3.63 |
| CQ6 | 16.00 | 11.59 | 4.41 |
| CQ7 | 6.89 | 5.46 | 1.43 |
| CQ8 | 11.03 | 7.82 | 3.21 |
| CQ9 | 10.10 | 8.96 | 1.14 |
| CQ10 | 24.10 | 22.28 | 1.82 |
| CQ11s | 12.14 | 7.51 | 4.63 |
| CQ11d | 13.63 | 8.88 | 4.75 |
| CQ12 | 8.05 | 4.10 | 3.95 |
| CQ13 | 16.47 | 11.98 | 4.49 |
| CP3 | 10.40 | 9.34 | 1.06 |
| CP4 | 13.63 | 8.17 | 5.46 |
| CP5 | 16.61 | 6.51 | 10.1 |
| CP6 | 16.27 | 8.95 | 7.32 |
| CP7 | 8.56 | 1.32 | 7.24 |
| MW7 | 15.76 | 15.72 | (0.04) |
| MW8 | 9.82 | 7.50 | 2.32 |
| MW9 | 22.44 | 21.81 | 0.63 |
| MW10 | 15.41 | 12.08 | 3.33 |
| Average | 13.14 | 9.98 | 3.16 |

Rise in ground water levels reflect the higher rain fall experienced during the reporting period.

Monitoring of CP8 was discontinued in May 2006 at the residents' request.

Ground water quality has remained stable results indicate acidic water of low electrical conductivity.

5.3 Surface Water Monitoring

Surface water was monitored on a monthly basis. During the reporting period, there was water discharged from site due to high rainfall, samples were taken at Site A and results showed surface water remained within the limits of approval for suspended solids. One result exceeded the total grease by 1.

5.4 Meteorological Station.

During the reporting period the weather station was fully operational with 100% data recovery recording once every 15 minutes, results are checked against the nearby Peats Ridge and Gosford Bureau of Meteorology stations.

5.5 Dust Monitoring

Dust deposition gauges are installed around the quarry as well as the gauge located on F & J Gazzana property, near B. Kashouli boundry Gauge CD2b this gauge showed dust above the criteria in the consent it is recognised these exceedences are from activities on the respective farms.

CD5 and CD6 continue to be monitored CD5 appeared to have been tampered with in January as the gauge had sand in it .these two gauges are located on the adjoining property lot 2 DP805358 and are to monitor air quality to the south of the Quarry.