

# **Summary of the Compliance Audit Campaign of NSW Sand Quarries (May – August 2015)**



Report published January 2016

## EXECUTIVE SUMMARY

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Sand quarries provide a critical resource, particularly to the construction industry, with demand continuing to increase as Sydney and the far north coast's population expands and infrastructure is developed. It is important however, that the community has confidence these quarries are operating in accordance with their project approval conditions.

Sydney currently uses about 7.0 million tonnes of construction sand annually, some 50% of which is fine sand (i.e. 3.5Mtpa). In the next 20 years approx. 66 million tonne of fine sand will be required to meet the needs of the construction industry. The Department understands that the two current major suppliers of fine sand in Sydney are likely to cease over the next 5 years. Once both sources are exhausted, the Sydney market would likely experience a supply shortage of sand for a range of construction products.

A sand quarries audit campaign was undertaken by the Compliance Unit of the Department of Planning and Environment between May and August 2015. The sand quarries audit reviewed compliance of 19 state approved sand quarries against their project approval conditions. The purpose of the audits was to evaluate compliance with project approval conditions, management plans, environmental assessments and any commitments made for each sand quarry. The audit campaign focused on two key environmental matters; land management and groundwater management.

The audit findings are based on evidence gained during the desktop review of all relevant documentation, site inspections of the 19 sand quarries, interviews with various operators' employees and contractors, data collection and verification.

The audit assessed the level of impact of non-compliances utilising the risk analysis matrix outlined in the Draft Guidelines – Independent Environmental Audits of Mining Projects (DP&E 2014) which assesses the likelihood of an impact occurring and the estimated level of impact to produce an overall risk ranking of high, moderate or low.

The sand quarries audited were found to be generally operating at a high level of compliance with their conditions and/or commitments. The audits of the 19 sand quarries identified a 92% compliance with approval conditions. A summary of audit results for the project approval conditions are provided in the table below. The most common non-compliances being:

- Inadequate revision and implementation of management plans;
- Non-compliant reporting requirements, such as Annual Reviews and websites; and
- Management of extraction depth.

Each of the quarry operators will implement an action plan to address the non-compliances and post audit actions identified by these audits. The NSW Department of Planning and Environment will follow up with each quarry on a regular basis to ensure agreed action plans are being implemented. Progress on actions will be reported in the quarries' respective annual reviews/ annual environmental management reports (AEMRs).

**Table 1: Summary of Non-compliances**

Mine	Approval	Potentially High Risk Non Compliance	Moderate Risk Non Compliance	Low Risk Non-Compliance	Administrative Non-Compliance
Boral Peppertree Quarry	PA 06_0074	0	0	2	6
Boral Sand Quarry Stockton	DA140-6-2005	0	4	2	10
Calga Sands Quarry	MP06_0278 DA 94-4-2004	0	2	2	13
Collins Spring Farm Quarry	DA 75/256	0	5	1	11
Dunloe Sands Quarry	PA06_0030	0	1	8	9
Gerroa Sand Quarry	LEC 10801 of 2007	0	0	2	12
Grants Rd Sand Quarry	MP08_0099	0	0	0	5
Gumma Sand Quarry	DA 409-11-2002i	0	6	8	2
Hanson Central Coast Quarry	MP08_0173	0	1	0	4
Hanson Wagga Wagga Quarry	MP 07_0069	0	0	0	6
Haerses Road Sand Quarry	DA 165-7-2005	0	0	3	15
Mackas Sand Quarry	PA08_0142	2	5	2	5
Multiquip Ardmore Park Quarry	PA07_0155	0	3	1	8
Dixon Sands Old Northern Road Sand Quarry	DA 250-09-01	0	3	12	23
PF Formation Hitchcock Rd	PA 06_0104	0	0	7	15
Roberts Road Sand Quarry	DA267-11-99	0	0	9	11
Salt Ash Sand Quarry	PA 07_0094	0	3	2	9
South Ballina Sand Quarry	MP06_0297	0	0	5	9
Tweed Hanson Sand Quarry	DA 152-6-2005	0	0	2	16

## Abbreviations

AEMR	Annual Environmental Management Report
DP&E	NSW Department of Planning and Environment
EA	Environmental Assessment
PAC	Planning and Assessment Commission
The Act	Environmental Planning and Assessment Act 1979

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### Acknowledgements:

DP&E wish to acknowledge the co-operation afforded to them by the sand quarry operators, their employees and contractors during the audit process.

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# 1 AUDIT PROCESS

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## 1.1 Objectives / Scope

The objectives of this compliance audit campaign were to:

- Review compliance with the conditions of each quarry's Project Approval; and review the performance of each quarry as it relates to groundwater and landscape/rehabilitation;
- Assess the environmental performance of each operation and the appropriateness of environmental management systems; and
- Provide recommendations to quarry operators to improve practices.

Each audit scope included the 2014 and 2015 calendar years up to, and including, the date of the site inspections.

There were 19 sand quarries audited as part of the 2015 sand quarry audit campaign. The location of these quarries is shown in Figure 1.

## 1.2 Methodology

The audit involved the following:

- Preliminary document review (Desktop Assessment);
- Site interviews;
- Site inspection;
- Data collection and verification;
- Evaluation of compliance against the audit criteria; and
- Reporting audit outcomes to each quarry operator

These tasks are described below.

### 1.2.1 Preliminary document review

The Department of Planning and Environment (DP&E) reviewed project approval documents for each quarry. These documents included, but were not limited to:

- Project Approval conditions;
- Relevant sections of the site's Environmental Assessment;
- Operation Environmental Management Plans;
- Annual Environmental Management Reports;
- Complaints Registers;
- Company website (where relevant); and
- Independent Audit Review Reports.

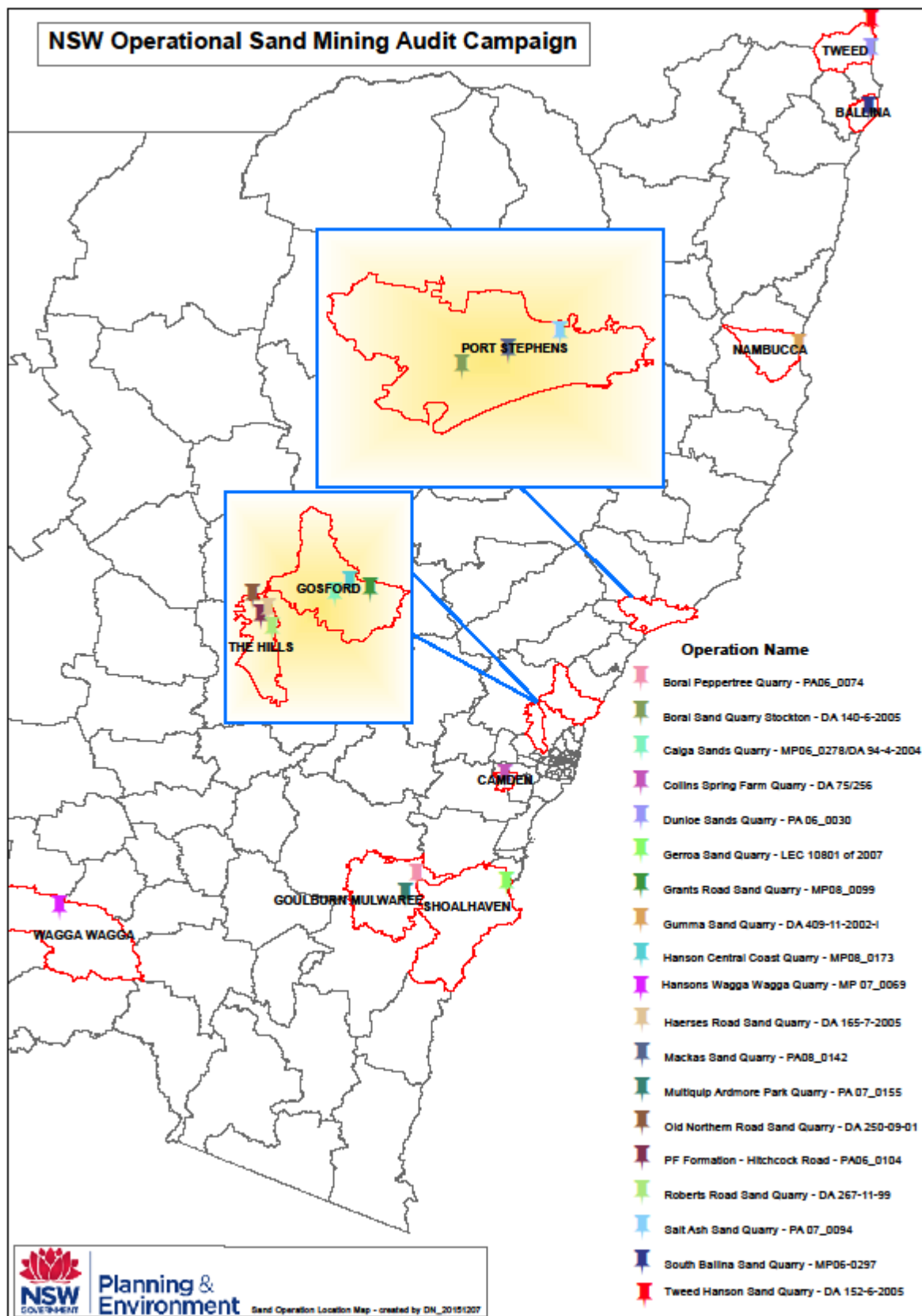


Figure 1: Location of sand quarries audited as part of 2015 campaign



### 1.2.2 Site inspection

DP&E conducted site inspections with the quarries from May to August 2015. The inspections included visits of operational and non-active operational areas in order to assess the effectiveness of environmental management and associated compliance at each quarry. Locations inspected on each mine site typically included:

- Active quarry areas;
- Rehabilitation and buffer zones;
- Future extraction areas;
- Weighbridges;
- Processing areas; and
- Maintenance workshops.

### 1.2.3 Evaluation of compliance against the audit criteria

The level of impact of non-compliances were assessed utilising the Risk Analysis Matrix outlined in the Draft Guidelines – Independent Environmental Audits of Mining Projects (DP&E 2014) which assesses the likelihood of an impact occurring and the estimated level of impact to produce an overall risk ranking of high, moderate or low.

<i>Likelihood of impact occurring</i>	<i>Estimated level of impact</i>			
	<i>High</i>	<i>Moderate</i>	<i>Low</i>	<i>Administrative, non-compliance</i>
<i>Almost certain</i>	<b>High</b>	<b>High</b>	<b>Moderate</b>	
<i>Likely</i>	<b>High</b>	<b>Moderate</b>	<b>Low</b>	
<i>Unlikely</i>	<b>Moderate</b>	<b>Low</b>	<b>Low</b>	
				<b>Administrative non-compliance</b>

Figure 2 – Risk Analysis Matrix (Table 1 from the Draft Guidelines – Independent Environmental Audits of Mining Projects (DP&E 2014))

A non-compliance assessed as **'high'** is of considerable environmental significance and therefore must be dealt with and resolved as a matter of priority. A **'moderate'** assessment for non-compliance is still a significant risk of harm to the environment, however it can be given a lower priority than a red risk assessment. A non-compliance assessed as **'low'** suggests that it could receive a lower priority but still must be attended to.

There are also a number of conditions of consent, such as those relating to administration and reporting requirements that do not have a direct environmental /community significance, but are still important to the integrity of the regulatory system. Non-compliance with these conditions is given an **'Administrative'** rating.

The colour code is used as the basis for deciding on the priority of remedial action required by the proponent and the timeframe which the non-compliances need to be addressed. This

information is presented in the action plan along with target dates for the non-compliances to be addressed.

While the risk assessment of non-compliances is used to prioritise actions to be taken, the Department considers all non-compliances are important and proponents must ensure that all non-compliances are addressed as soon as possible.

#### **1.2.4 Reporting**

Following the completion of the site compliance audit, the Project Approval compliance checklists were completed and compliance audit notes were reviewed in order to compile a list of outstanding matters to be noted in the compliance audit reports. Reports were prepared for each mine to provide an overview of the status of compliance by reference to the relevant compliance documentation and any other observations made during the site inspections and interviews.

This report was prepared as a summary document of the 19 detailed compliance checklists/reports

Reports for the individual quarries were provided to the proponents with comments received and action plans agreed to address non-compliance.

#### **1.2.5 Determining the Significance of Breaches/ Enforcement**

Non-compliances were assessed in accordance with the Department's Compliance Policy (September 2010) to determine the significance of the breach and to enact appropriate enforcement response.

#### **1.2.6 Limitations**

Auditors have taken due care to consider all reasonably available information provided during the undertaking of this audit. This information is taken to represent a fair and reasonable characterisation of the environmental status of the site.

## 2 AUDIT FINDINGS

The sand quarries audited were found to be generally operating in compliance with their conditions and/or commitments. However, all sites identified a number of non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) where action is required to ensure compliance is achieved. It was noted that action to correct the findings were generally implemented quickly and in most cases these issues are likely to have been addressed by the time of publication of this report.

A summary of audit results for the Project Approval conditions are provided in the **Table 2** and **Appendix A** provides a summary of the audit findings for each of the 19 quarries audited.

**Table 2: Summary of Non-compliances**

Mine	Approval	Potentially High Risk	Moderate Risk	Low Risk	Administrative
Boral Peppertree Quarry	PA 06_0074	0	0	2	6
Boral Sand Quarry Stockton	DA140-6-2005	0	4	2	10
Calga Sands Quarry	MP06_0278 DA 94-4-2004	0	2	2	13
Collins Spring Farm Quarry	DA 75/256	0	5	1	11
Dunloe Sands Quarry	PA06_0030	0	1	8	9
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South Ballina Sand Quarry	MP06_0297	0	0	5	9
Tweed Hanson Sand Quarry	DA 152-6-2005	0	0	2	16

## 2.1 Common Non-compliances

It is possible to identify common trends when reviewing the non-compliances identified from this audit campaign.

Figure 3 presents the percentage (of the 19 audited) sites that had non-compliance identified for each compliance issue, which are broadly grouped as environmental performance or administrative.

The environmental performance non-compliance issues are those that have the potential to cause harm to the environment and are indicated with green coloured bars in Figure 3 and generally related to:

- Management Plan implementation (Section 2.1.1);
- Extraction depth control (Section 2.1.2);
- Hydrocarbon management (Section 2.1.3); and
- Traffic movement (Section 2.1.4).

Administrative or technical non-compliances were the most common form of non-compliances identified through this campaign. These are indicated with the blue coloured bars in Figure 3 and the most common non-compliances related to:

- Management Plans ((Section2.1.5);
- Self-reporting and monitoring of compliance; (Section 2.1.6); and
- Community consultation (Section 2.1.7).

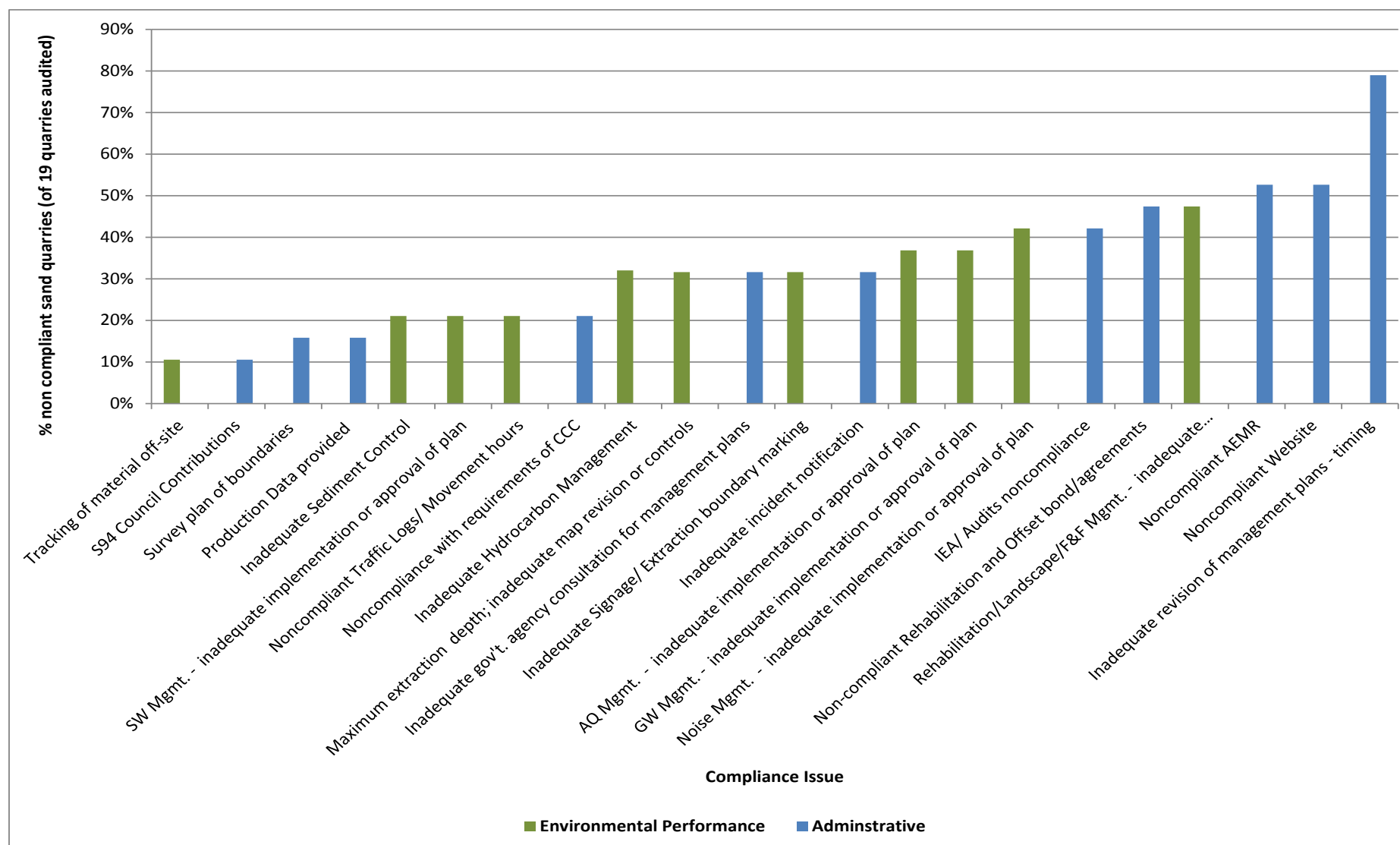
### 2.1.1 Implementation of Management Plans

Management plans are a requirement of most state significant development approvals. The purpose of these plans is for the proponent to adequately describe the measures it intends to implement, and the proposed monitoring program to be implemented, to ensure that conditions of approval are met.

Lack of implementation of management plan requirements was the most common form of environmental performance non-compliance. The audit focused on the implementation of the rehabilitation/landscape management plans and groundwater management plans/programs. Common issues relating the implementation of these plans included:

- Undertaking groundwater monitoring at the approved locations and frequency;
- Topsoil stockpile management;
- Rehabilitation not meeting closure criteria; and
- Inadequate fencing and extraction boundary marking.

Further, there was evidence that at eight of 19 quarries there were non-compliance/s with implementation of the noise management plan, at seven of 19 quarries there was non-compliance/s related to air quality management and at four of the 19 quarries there were non-compliances related to erosion and sediment control.



**Figure 3: Compliance issues identified during the sand quarries campaign 2015**

### **2.1.2 Extraction depth control**

Minimising impacts to groundwater is a key assessment issue at many sand quarry sites. To ensure that this is achieved extraction activities are limited to a set AHD/RL or buffer level of sand above the groundwater level in an average rainfall year; and in a maximum (1 in 100 year) rainfall year.

The audits identified that for those quarries (six of 19 quarries) that were required to limit extraction depth, there were generally poor controls in place. Common controls included surveyed sight pegs for loader operators to estimate depth from and annual survey checks. It is recommended that operations consider GPS control for Loading/ Excavating machinery, more extensive network of survey peg control and quarterly registered survey control and/or stabilise the extraction floor to ensure depth is maintained.

### **2.1.3 Hydrocarbon management**

Hydrocarbons are commonly stored and used on site for extractive equipment such as loaders/dozers and also for screening and processing equipment. Poor hydrocarbon management may cause land or water contamination and as such are generally conditioned in sand quarry approvals. The audit identified that at six of 19 sand quarries hydrocarbons were inappropriately stored and/or handled with some sites having evidence of spillage incidents. It is recommended that these sites implement measures to prevent soil contamination and store hazardous materials in accordance with the relevant Australian Standard (AS1940).

### **2.1.4 Traffic movement**

Restriction on the movement of truck loads from an operation is seen as an important control by the community to ensure road safety and is therefore conditioned in quarry approvals. Four quarries were found to be non-complaint with the traffic related conditions of their approval. Further, two sites were found to be noncompliant with conditions relating to the tracking of material onto public roads.

### **2.1.5 Administrative issues related to Management Plans**

Management Plans, strategies and programs are common approval conditions that require the proponent to describe how the project will manage specific environmental risks, such as noise, air quality and land management to ensure impacts to the community and environment are mitigated.

Management Plans, strategies and programs are required to be regularly updated to incorporate any measures recommended to improve environmental performance of the project. The audit campaign found that 15 of the 19 (79%) sand quarries audited had not undertaken revision of one or more management plans as specified in the timeframes identified by their Project Approval.

Further, six of 19 quarries (32%) were found to have undertaken inadequate consultation with other agencies when preparing their management plans, strategies or programs. Where consultation is required by any other government department or authority, evidence

of this consultation should be provided. Where the department or authority does not respond prior to submitting this plan, evidence of the submission is required.

### **2.1.6 Self-reporting and monitoring of compliance**

Annual reports and independent environmental audits are required by most approvals to ensure that the development is complying with conditions of approval and key predictions and modelling undertaken as a part of the environmental assessment. The Department reviews these reports to ensure that impacts are generally in accordance with predictions and modelling in the environmental assessment, that approval conditions are being complied with and to take appropriate enforcement action where required.

Additionally, state significant developments are regularly subjected to compliance inspections and audits to ensure that they are operating in accordance with their approvals and are meeting expectations for environmental performance.

The sand quarries audit campaign found that 10 of the 19 (53%) sand quarries audited had not prepared and submitted an AEMR in a timely manner and/or had not addressed the requirements of the approval conditions.

Independent environmental audits (IEA) are required to be commissioned by proponent to assess the environmental performance and compliance of the project, to review the adequacy of the management plans/strategies/programs and to recommend measures to improve the environmental performance. The audit found that 8 of 19 quarries (42%) had not completed the IEA as required by their approval.

Further, reporting of exceedances and incidents to the Department was found to be non-compliant at six of 19 quarries (32%). That is, the audit identified events in the past 18 months that should have been notified to the Department as required by the project approval.

### **2.1.7 Community consultation**

Websites are a key mechanism for the community and other stakeholders to gain important information about quarries including approval/s, management plans, performance monitoring results and other relevant information. Recent consents require projects to maintain a website. All strategies/plans/programs/reports required by the approval are generally required to be publicly available on the proponent's website and updated on a regular basis (at least every 3 months).

Website maintenance was the second most common non-compliance with 10 of 19 quarries (53%) not having all required information available.

Community Consultative Committees (CCC's) are a forum for open discussion between representatives of the company, the community, the council and other stakeholders on issues directly relating to the quarry's operations, environmental performance and community relations, and to keep the community informed on these matters.

CCC's provides a forum to:

- establish good working relationships between the Company, the community and other stakeholders in relation to the quarry
- provide for the ongoing communication of information on quarrying operations and the environmental performance of the quarry including:
  - on project assessment including scoping of issues for assessment and comment on assessment documentation
  - on the implementation of conditions of approval, the mining operations plan and any other management plans
  - the results of environmental monitoring
  - annual environmental management reports, and
  - outcomes of audit reports
- provide an opportunity for comment on the mine's environmental performance
- discuss community concerns and to review the resolution of community complaints
- discuss how best to communicate relevant information on the quarry and its environmental performance to the broader community, and
- work together towards outcomes of benefit to the quarry, immediate neighbours and the local and regional community
- 

There were four of the 19 quarries that were found to have non-compliance relating to the operation and management of their CCC.

### 3 RECOMMENDATIONS

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Each of the quarry operators will implement an action plan to address the non-conformances and post audit actions identified by these audits. The NSW Department of Planning and Environment will follow up with each quarry on a regular basis to ensure agreed action plans are being implemented. Progress on actions will be reported in the quarries respective Annual Reviews/ AEMRs.

Following the audit, the Department has sent correspondence to all NSW SSD/SSI proponents reminding them of their obligations to comply with consent conditions. The Department has commenced an education campaign with the quarrying industry. To date, the Department has met with peak industry bodies and a number of key proponents.



## 4 APPENDIX A - QUARRY SUMMARIES

### 4.1.1 Boral Peppertree Quarry

The Major Project Approval (MP 06\_0074) for the Peppertree Quarry was granted by the Minister for Planning in March 2009.

Peppertree Quarry is located at Marulan South, 10 km south-east of Marulan (Figure 4). The approval permits extraction of up to 3.5 million tonnes of hard rock (granodiorite) aggregate and manufactured sand product annually, over an extraction area of 70 hectares within a total site covering 650 hectares.

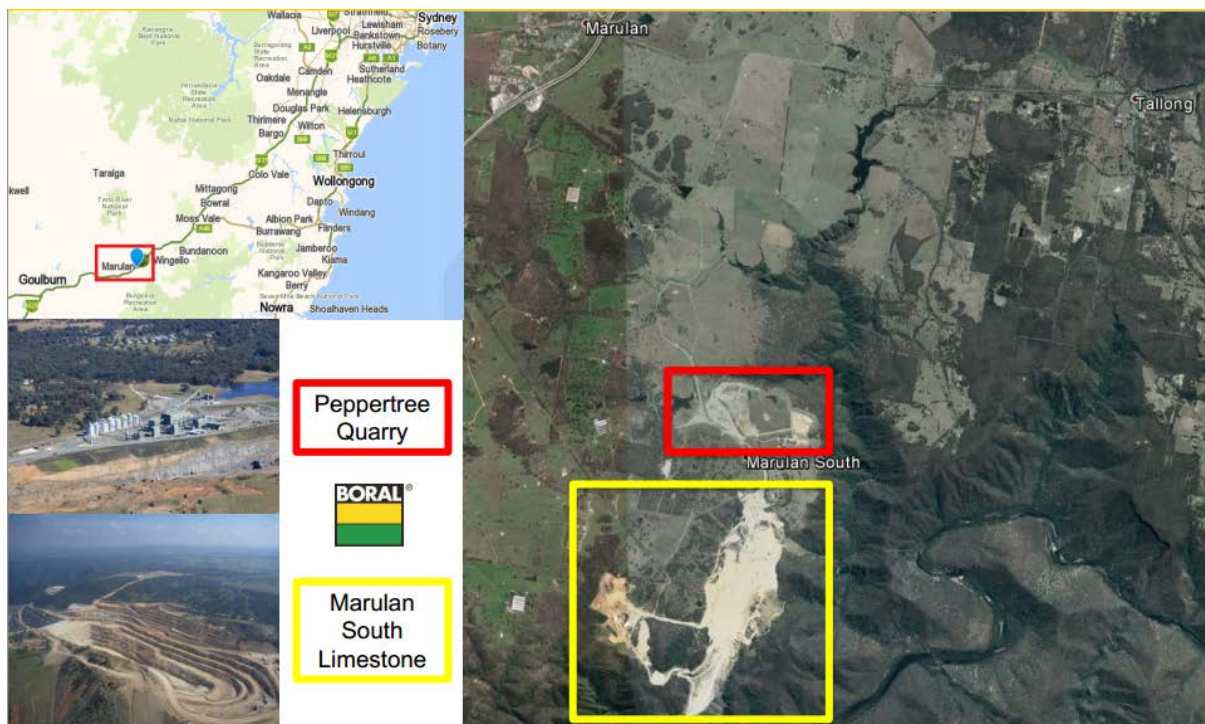


Figure 4: Peppertree Quarry – Marulan South (Image taken from Boral Peppertree website)



Figure 5: Peppertree Quarry – Marulan South (Image taken from Boral Peppertree website)

The compliance audit of the Boral Peppertree Quarry Approval (MP 06\_0074) and associated plans, programs and strategies demonstrated a satisfactory level of compliance in most areas, whilst also identifying several low-risk non-compliances and administrative non-compliances with the Development Consent, the Groundwater Monitoring Program (in

the Water Management Plan) and the Landscape and Rehabilitation Management Plan and associated EAs for Peppertree where relevant.

In summary, Boral Peppertree was found to be generally operating in compliance with its conditions and/or commitments. However, five low risk non-compliances and four administrative non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved. It was noted that action is underway and in most cases these issues are likely to have been addressed by the time of publication of this report.

The key non-compliance issues identified as part of the compliance audit against the Peppertree development approval is in relation to the failure to submit the Annual Environmental Management Reports for 2013 and 2014 in accordance with Schedule 5, Condition 4; and the failure to implement the Ground Water Monitoring Program set out in the Water Management Plan. For further information please refer to Section 3.1 and Table 1. Furthermore, a completed compliance checklist against the conditions of the Development consent, and relevant management plans is included in Appendices 1, 3, and 4.

In terms of on-site environmental management, environmental and management staff indicated a good understanding of the key rehabilitation and extraction issues and were focused on implementing measures that minimise impacts. For example, undertaking timely action to maintain erosion and sediment controls where needed.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### **4.1.2 Boral Sand Quarry Stockton**

The Development Consent (DA 140-6-2005 – Windblown Sand Extraction) for Boral Sand Quarry Stockton was granted by the NSW Minister for Planning on 24 January 2006 (including latest modification Mod 2- approved 24 June 2011).

Boral Sand Quarry Stockton (BSQS) operations are located approximately 15 kilometres north-east of Newcastle near Williamtown in the Port Stephens local government area (LGA), New South Wales (refer to Figure 1). The current extraction area is adjacent to land owned by the Worimi Local Aboriginal Lands Council. The approval covers approximately 32.65 hectares of largely bare windblown dunes and extracts up to 500,000 tonnes of sand annually.

The compliance audit of the BSQS consent (DA 140-6-2005 – Windblown Sand Extraction), subsequent modifications and the associated Groundwater Monitoring Program and Rehabilitation and Landscape Management Plans identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances with the Development Consent, Management Plans and associated EAs for BSQS where relevant.

In summary, BSQS was found to be operating in compliance with a number of conditions and/or commitments. However, four moderate risk non-compliances, two low risk non-compliances and 10 administrative non-compliances with conditions and/or commitments (or



sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issue identified as part of the compliance audit against the BSQS development consent is in relation to failure to undertake an Independent Environmental Audit by 24 January 2014 in accordance with Schedule 4, Condition 4 and the letter to DPE dated 12 January 2011.

The key non-compliance issues in regards to the Groundwater Monitoring Program and Rehabilitation and Landscape Management Plan relate to the lack of revision/subsequent approval of the management plans and the implementation of the plans. In particular, failing to fully implement groundwater monitoring in accordance with the Groundwater Monitoring Program.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.3 Calga Sand Quarry

The Development Consent (DA 94-4-2004) for Calga Sand Quarry Extension (Stage 3) was granted by the NSW Minister for Planning on 28 October 2005 including the latest modification (Mod 1 - approved on 29 June 2012)(Figure 6). The approval covers the transport of up to 400,000 tonnes of product annually.

This audit does not include a review against the requirements of Rocla's Calga Sand Quarry Project (06\_0278) approved by the NSW Minister for Planning and Infrastructure on 23 December 2013. Rocla had not commenced any works under the approval at the time of the audit as it was subject to an appeal in the NSW Land and Environment Court. The court has upheld the appeal and refused consent for the proposed expansion of the quarry.

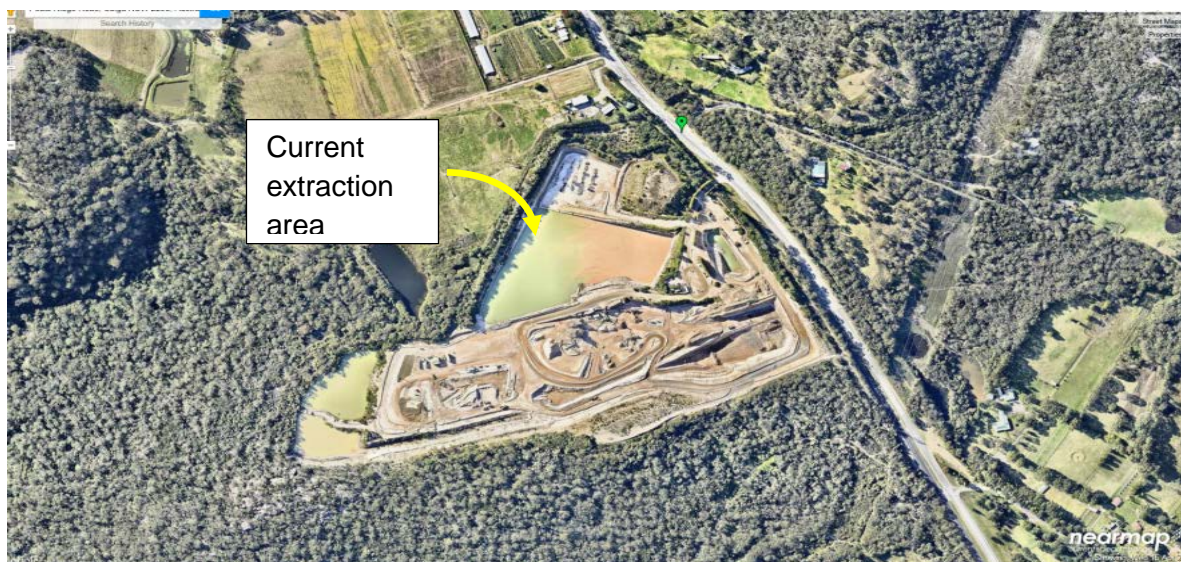


Figure 6: Calga Sand Quarry (Image taken from Nearmap on 17 July 2015)



Figure 7: Calga Sand Quarry

Calga Sand Quarry was found to be operating in compliance with the majority of conditions and/or commitments. However, two low risk non-compliances, two moderate risk non-compliances, and 13 administrative non-compliances and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved. It was noted that a number of non-compliances stem from strategies, monitoring and management plans not being reviewed or updated due to the ongoing legal proceedings to which PA 06\_0278 is subject. It is expected that the majority of these will be addressed after the judgment is delivered.

The key non-compliance issues identified as part of the compliance audit against the CSQ development consent are:

- The SWMP not containing detailed baseline surface water quality and the associated lack of water quality and flow monitoring from the surface water discharge point located at Dam 7b/c coupled with the lack of a licence (EPL) for the discharge point.
- Commencing extraction from Stage 3/6 prior to commissioning a suitably qualified hydrogeologist, whose appointment has been approved by the DP&E, to assess the potential long term impacts of the final void on groundwater resources, and to develop a quarry closure and post-closure groundwater management plan.
- Dust deposition gauge (DDG) at CD-1 being positioned at an angle (refer to Photo 4 in Appendix 2) which may interfere with representative sample collection.

Other non-compliances were identified against the groundwater commitments in the Site Water Management Plan. A low risk non-compliance was identified against the commitment to undertake annual inspections of groundwater dependent ecosystems and vegetation beyond the quarry site and an administrative non-compliance was identified with regards to the lack of baseline electrical conductivity data against which the trigger for a 20% increase in groundwater salinity is evaluated.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.



#### 4.1.4 Collins Spring Farm Quarry

The Development Consent (DA 75/256) for Spring Farm Quarry (SFQ) was granted by the NSW Minister for Planning on 13 October 1988 including the latest modification (Mod 3 - approved 25 October 2012) (Figure 8).

The SFQ operations are located approximately 65km southwest of Sydney near Camden Township in the Camden Council local government area (LGA); New South Wales (refer to Figure 1). The extraction area is situated on the eastern bank of the Nepean River. Land uses in the immediate surroundings include agriculture, turf farming and residential development.



Figure 8: Spring Farm Quarry (Image taken from Nearmap on 3 August 2015)

The approval covers the extraction of sand from approximately 7 hectares of agricultural land (currently lucerne and formerly viticulture) located at Lot 32 DP635271 as well as existing extraction of sand from Lot 22 DP833317. Conditions related to the rehabilitation and/or revegetation of not only the extraction areas but also the riparian corridors along the Nepean River and the dry Anabranche of the Nepean River, which form the western and eastern boundaries of the extraction areas respectively, are also included under DA 75/256 Mod 3.

Other activities which are critical to the operation but do not relate directly to the DA 75/256 Mod 3 Development Consent are undertaken in an area under Council approval (DA252/93) to the east of the current extraction area (Figure 8). The area includes access to the premises via the main entrance, weighbridge, wheel wash, site offices, workshops, resource processing and blending area and water supply pump from the Nepean River. These activities were not considered when assessing compliance; however where the auditors observed practices with the potential to cause environmental harm, observations regarding these activities are provided.

The compliance audit of the SFQ Development Consent (DA 75/256 Mod 3), subsequent modifications and the associated groundwater aspects of the Water Management and Erosion and Sediment Control and Landscape Management Plans identified a moderate

level of compliance due to several non-compliances with the Development Consent, Management Plans and associated EAs for SFQ where relevant.

In summary, SFQ was found to be operating in compliance with the majority of conditions and/or commitments. However, one low risk non-compliance, five moderate risk non-compliances, and 11 administrative non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the SFQ Development Consent are:

- Failure to prepare an Environmental Monitoring Program (Schedule 5, Condition 2) and failure to monitor dust emissions in accordance with the respective conditions (Schedule 3, Condition 6 and Schedule 3, Condition 8 respectively).
- Failure to prepare a water balance (Schedule 3, Condition 13).
- No IEA undertaken in 2014 (Schedule 5, Condition 5) and failure to provide a response to the recommendations of the last IEA undertaken in 2011 (Schedule 5, Condition 6).
- No AEMRs submitted for the past two years (Schedule 5, Condition 4).
- Limited access to environmental monitoring/management information (Schedule 5, Condition 8).

The key non-compliance issues in regards to the Water Management and Erosion and Sediment Control and Landscape Management Plans relate to the lack of comparison of groundwater monitoring with trigger levels and allowing livestock access to sensitive areas identified for restoration of vegetation.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### **4.1.5 Dunloe Sands Quarry**

The Project Approval (PA 06\_0030) for Dunloe Sands Quarry was granted by the then NSW Minister for Planning on 24 November 2008 (Figure 9). A subsequent modification (Mod 1) to this approval was granted 28 August 2009.

Dunloe Sands Quarry operations are located approximately 33 km south of Tweed Heads, approximately 4.5 km south-southwest of Pottsville and about 0.5 km west of the beach on the far north coast of New South Wales (see Figure 1). The site is located adjacent to Mooball Creek, approximately 4km upstream of the creek mouth.

The total extraction area (Pond 1 and Pond 2) is 56.7 hectares, on Lot 1 in DP 755721 & Lots 1 & 2 in DP 780199. The extraction of sand from the subject site is by means of both suction dredge (wet extraction) and dry extraction (initial overburden and brickies loam extraction). There is a nominal maximum extraction depth of 12 metres, and approval is provided for the extraction of up to 300,000 tonnes annually.

The site and extraction areas are located adjacent to a number of varying land uses. Native vegetation communities occur in the form of regrowth Wet Sclerophyll Forest on the western upper slopes and a combination of Swamp Sclerophyll (Melaleuca, Casuarina) and Coastal Forests on sand (Swampbox, Littoral Rainforest, Banksia Forest) in the eastern areas adjacent to Mooball Creek. Adjacent properties to the south, west and north-west are currently used for agricultural purposes. The majority are used for either sugar cane farming or are under improved pasture for grazing purposes.

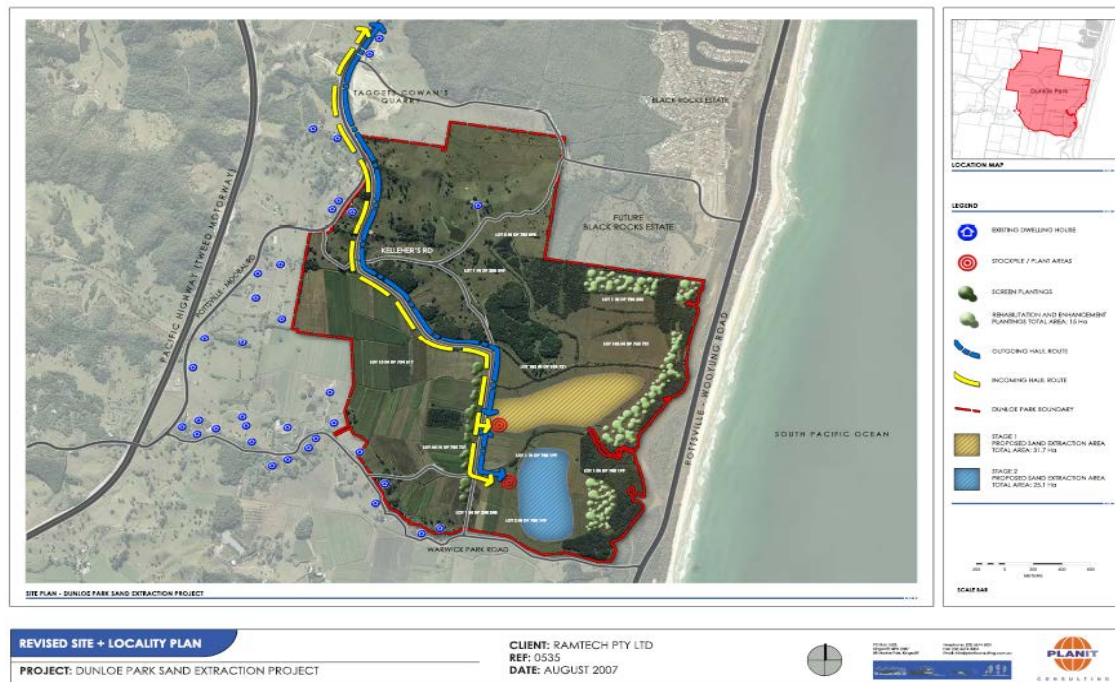


Figure 9: Dunloe Sands Quarry location (Image taken from Dunloe Sands - Environmental Management Plan)



Figure 10: Dunloe Sands Quarry – Extraction area



The compliance audit of the Dunloe Sands Quarry Project Approval (PA 06\_0030), subsequent modifications and the associated Landscape Management Plan and Soil and Water Management Plan identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances.

In summary, Dunloe Sands Quarry was found to be operating generally in compliance with a number of conditions and/or commitments. However, 14 administrative non-compliances, ten (10) low risk non-compliances and one moderate risk non-compliance with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the Dunloe Sands Quarry Project Approval were in relation to failure to undertake air and noise monitoring as required in accordance with the Project Approval and Environmental Management Plan (for which a Penalty Infringement Notice was issued in 2015), operating outside of approved operating hours on several occasions and failure to undertake all aspects of water quality monitoring in accordance with the relevant plans.

The key non-compliance issues in relation to the groundwater component of the Soil and Water Management Plan relates to the failure to test for all parameters required and failure to revise the plan following the completion of 20 rounds of sampling.

The key non-compliance issues in regards to the Landscape Management Plan relates to ensuring the plan reflects site practices, that monitoring is undertaken as scheduled and that more detailed reporting is included in the AEMR.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.



#### 4.1.6 Gerroa Sand Quarry

The Development Consent (LEC No. 10801 of 2007) for Gerroa Sand Quarry was granted by the Land and Environment Court on 25 August 2008 (Figure 11).

The Gerroa Sand Quarry operation lies across a local government boundary with approximately two thirds in the Kiama Municipal Council area and one third within the Shoalhaven City Council area. The operational area fronts Crooked River Road and Berry Beach Road (Figure 1 & 11). The current extraction area is adjacent to land utilised for cattle grazing. Seven Mile Beach National Park is located on the eastern side of Crooked River Road.

The Development Consent covers approximately 27.5 hectares of once vegetated flood plain (cleared as part of the consent) and allows for the extraction and transport of up to 80,000 tonnes of fine construction sand annually. The sand is extracted using a dredge, with sand pumped from the dredge to the processing plant through a 200 mm pipeline. Water from the processing is recycled to the dredge pond with product sand dried and stockpiled for sale. Rehabilitation of the dredge pond banks and extracted areas is required to be undertaken progressively as the dredge advances.



Figure 11: Gerroa Sand Quarry location (Image taken from Gerroa Sand Quarry – AEMR 2013-2014)



Figure 12: Gerroa Sand Quarry – Extraction area

The compliance audit of the Gerroa Sand Quarry Development Consent (LEC No. 10801 of 2007), Statement of Commitments and the associated Groundwater Management Plan and the Landscape and Rehabilitation Management Plan identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances.

In summary, Gerroa Sand Quarry was found to be operating in compliance with a number of conditions and/or commitments. However, 12 administrative non-compliances and two low risk non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the Gerroa Sand Quarry Development Consent is in relation to installation of a small section of additional sediment fencing, maintenance of existing sediment fencing and hydrocarbon management, in particular the bunding of drums and protection of a diesel fuel line.

No non-compliances were identified against the Statement of Commitments.

The key non-compliance issue with regards to the Landscape and Rehabilitation Management Plan relates to the requirement to revise and resubmit the plan, which is now five years old.

No non-compliances were identified against the Groundwater Management Plan.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.7 Grants Rd Sand Quarry

The Development Consent (MP 08\_0099 – Grants Road Sand Quarry Extension) for GR and AK Jones was granted under delegation of the NSW Minister for Planning on 25 July 2014 (Figure 13). Although the proponent had triggered the commencement of the approval at the time of the audit inspection (21 July 2015) extraction within the consent area had not yet commenced.

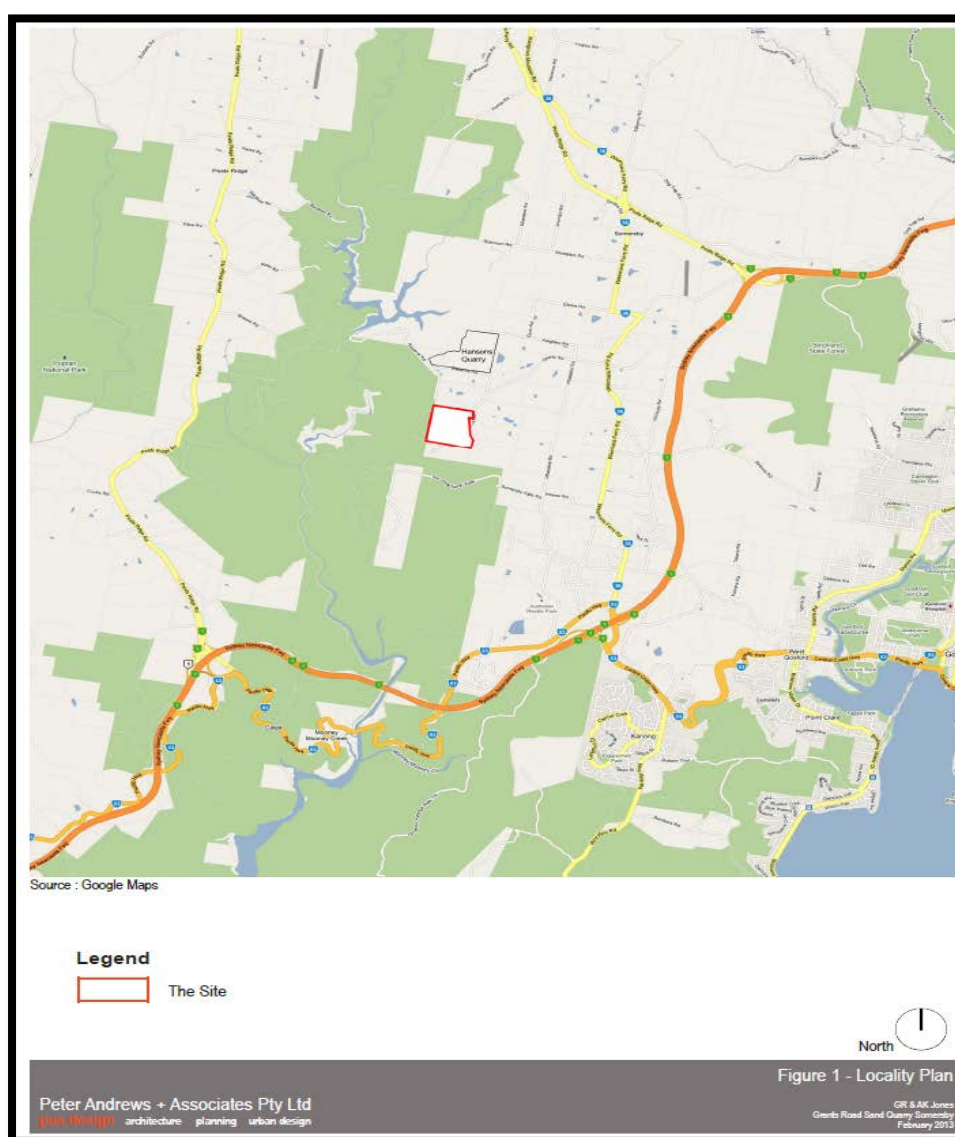


Figure 13: Grants Road Sand Quarry – Somersby (Image taken from Grants Road Sand Quarry Extension Environmental Assessment)

Grants Road Sand Quarry (GRSQ) operations are located on the Somersby Plateau, approximately 9 kilometres north-west of Gosford in the Gosford local government area (LGA), New South Wales (Figure 1). The current extraction area is adjacent to land owned

by the Worimi Local Aboriginal Lands Council (Figure13). The extension area covers 20 hectares immediately adjacent to the existing approved extraction area for extraction of up to 250,000 tonnes of washed sand, mortar sand, sandstone blocks and retaining wall blocks annually.

The compliance audit of the GRSQ consent (MP 08\_0099) identified an adequate level of compliance, whilst also identifying some administrative non-compliances with the consent for GRSQ. In summary, five administrative non-compliances with consent conditions were identified where action is required to ensure compliance is achieved.

The key non-compliance issue identified as part of the compliance audit against the GRSQ consent is in relation to the failure to provide access to information on its website in accordance with Schedule 5, Condition 11.

The auditors made a couple of observations which present an opportunity for improvement. The first relates to housekeeping in the workshop which presents health and safety risks in the form of trip hazards and fire hazards; and the second observation relates to the storage and bunding of lubricants which was not compliant in two locations.

At the time of this report the proponent has addressed all non compliances observed during the inspection.

#### **4.1.8 Gumma Sand Quarry**

The Development Consent (DA No. 409-11-2002-i.) for Gumma Sand Quarry (GSQ) was granted by the NSW Minister for Planning on 23 June 2004 (including latest modification (Mod 1 - approved May 2012) (Figure 14). The site component of the compliance audit was conducted on 30 June 2015.

The quarry is located approximately 8 kilometres southeast of Macksville in the Nambucca local government area (Lot 157 DP 755539 and Lot 24DP 1119693). The quarry is located in dense coastal bushland. The closest residence is located approximately 600 metres from the quarry, in a rural residential subdivision (Warrell Waters Estate - Figure1) which was approved since the consent was granted. A portion of State Environmental Planning Policy (SEPP) 14 wetland No. 389 lies within the DA area, and the Warrell Creek Natural Area lies adjacent to the quarry.

The approval allows for the extraction of sand and marine pebble from a relict sand ridge to the 4 metre Australian height Datum (AHD) contour over an area of 8.7 hectares. Production is limited to 25,000 cubic metres per annum 31 January 2021.



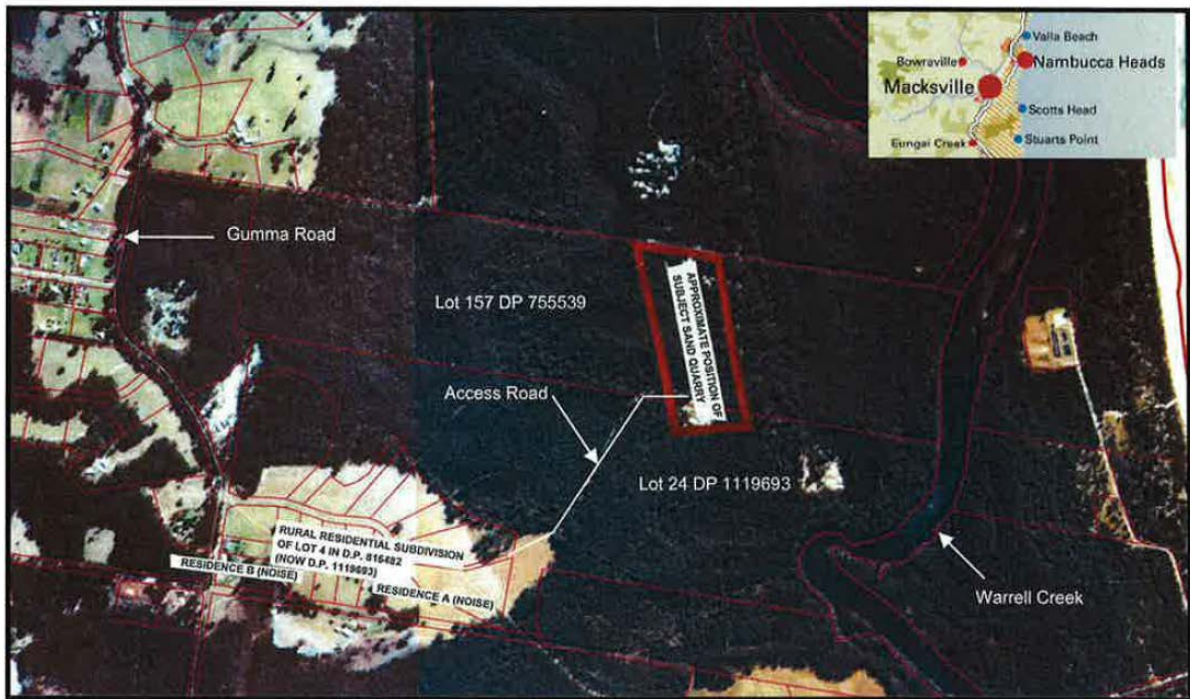


Figure 14: Gumma Sand Quarry (Image taken from GSQ Modification 1 – Environment Assessment Report, DP&I May 2012)



Figure 15 - Gumma Sand Quarry – Extraction area

In summary, GSQ was found to be operating in compliance with a number of conditions and/or commitments. However, 6 moderate risk non-compliances, 8 low risk non-compliance and two administrative non-compliances with conditions and /or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The moderate non-compliances related to:

- Disturbance outside of pit area
- Inadequate boundary demarcation
- Poor topsoil handling and use resulting in poor condition rehabilitation
- Inadequate implementation of groundwater monitoring program

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.9 Hanson Central Coast Quarry

The Project Approval (MP 08\_0173 – Central Coast Sand Quarry) for Hanson Central Coast Sand Quarry was granted by the NSW Minister for Planning on 1 August 2014. At the time of the audit inspection (22 July 2015) extraction within the approved area had not yet commenced. However, preliminary activities such as the demolition of structures had commenced.

Hanson Central Coast Sand Quarry (HCCSQ) operations are located approximately 9 kilometres north-west of Gosford in the Gosford local government area (LGA), New South Wales (Figure 1).

The existing quarry covers 36 hectares with an extraction rate of 340,000 tonnes per annum. The approval encompasses an eastern extension of 8 hectares which provides access to an additional 5 million tonnes of friable sandstone in a Lot which is currently used for poultry farming and an avocado orchard. The approved extraction rate is 310,000 tonnes per annum.



Figure 16 – Hanson Central Coast Quarry

The compliance audit (site inspection, 22 July 2015) of the Hanson Central Coast Sand Quarry approval (MP 08\_0173) identified a reasonable level of compliance whilst also identifying a number of non-compliances with the Project Approval. In summary, HCCSQ



was found to be operating in compliance with the majority of conditions. However, one moderate risk non-compliance and four administrative non-compliances with conditions (or sub elements of conditions) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the HCCSQ Project Approval were the failure to undertake an asbestos clearance inspection by an accredited asbestos consultant prior to commencing demolition of poultry sheds, and the failure to submit plans on time and provide updated information on the website.

As HCCSQ was not yet extracting from the approved area, the commitments in the Water Management Plan were not yet applicable. However, the auditors noted a number of observations which would have to be addressed by the time that HCCSQ commences extraction from the approved area.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.



Figure 17: Hanson Central Coast Quarry (Image taken from Environmental Assessment – Central Coast Sands Project 08\_0173)

#### 4.1.10 Hanson Wagga Wagga Sand Quarry

The Major Project Approval (MP 07\_0069) for the Wagga Wagga Sand Quarry extension to the existing quarry development was granted by the Minister for Planning in November 2011.

The Wagga Wagga Quarry is located on the floodplain of the Murrumbidgee River approximately 5 km west of the town of Wagga Wagga, (refer to Figure 1). The site covers approximately 200 ha of which 129 ha is floodplain and 29 ha comprising the extraction area. The operation is approved to extract up to 150,000 tonnes of material a year.

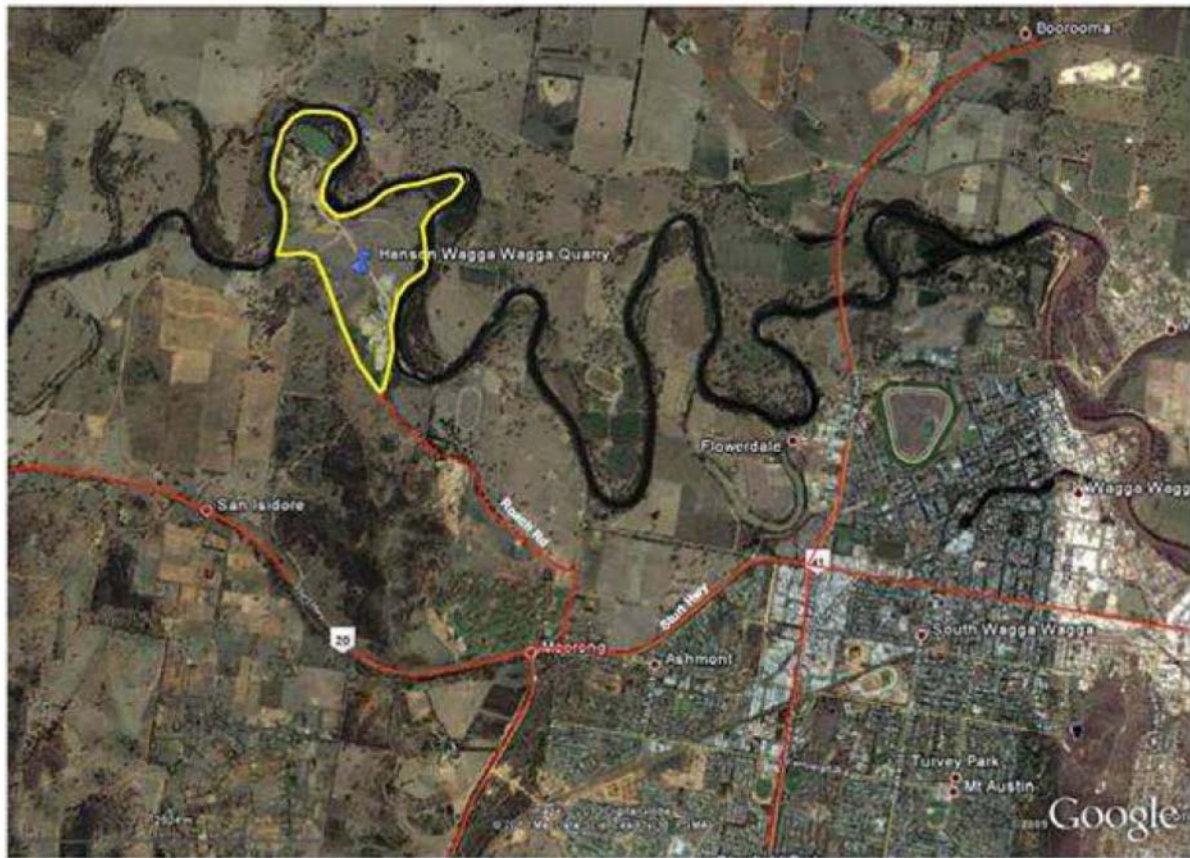


Figure 18: Hanson Wagga Wagga Quarry (Image taken from Hanson Wagga Wagga Quarry Environmental Management Strategy 2012)

The compliance audit of the Wagga Wagga Quarry approval (MP 07\_0069) and the associated Groundwater Monitoring Program and the Rehabilitation Management Plan identified generally good level of compliance, whilst also identifying a small number of administrative non-compliances with the Development Consent.

In summary, the quarry was found to be operating in compliance with most conditions and/or commitments. However, 6 administrative non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action was required to ensure compliance is achieved.

The key non-compliance issue identified as part of the compliance audit against the development consent was in relation to failing to submit various plans in accordance with the scheduled timeframes. However, it is recognised that this failure was in part due to the priority to undertake major remediation works along the River Bank following flood damage. A completed compliance checklist against the conditions of the Project Approval is included in Appendix 1.



There were no non-compliances against the Rehabilitation Management Plan (submitted September 2014) or the Water Management Plan/Water Management Program (submitted May 2015).

In terms of on-site environmental management, site operations management indicated a good understanding of the key extraction and rehabilitation issues, and was focused on implementing measures that minimise impacts, for example, actively undertaking a major rehabilitation of the area of river bank blow-out that resulted from a major flood event.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### **4.1.11 Haerses Road Sand Quarry**

The Development Consent (DA No. 165-7-2005) for Haerses Road Sand Quarry was granted by the then Minister for Planning on 14 February 2006.

Haerses Road Sand Quarry operations are located on Haerses Road, Maroota, approximately 40 kilometres north of Parramatta (Figure 1). The site covers approximately 104 hectares and includes the following Lots: Lot 170 DP664767, Lots A and B DP407341 and Lots 176 and 177 DP752039. Quarrying is excluded from 50% of the site. To date, sand extracted from the site has been trucked, processed and stockpiled at the existing processing plant at the Old Northern Road site, and also uses the ancillary facilities such as the workshop, weighbridge and office at the site.

The operation on the Haerses Road site is to maintain an average extraction rate of 250 000 tonnes per annum for a period of 25 years, of which approximately 190 000 tonnes per annum will require processing. The existing approvals permit an annual production rate of 495 000 tonnes from the processing plant on Lot 196. The expected annual output of product from Lots 1 and 2 at the processing plant is expected to be approximately 300 000 tonnes.

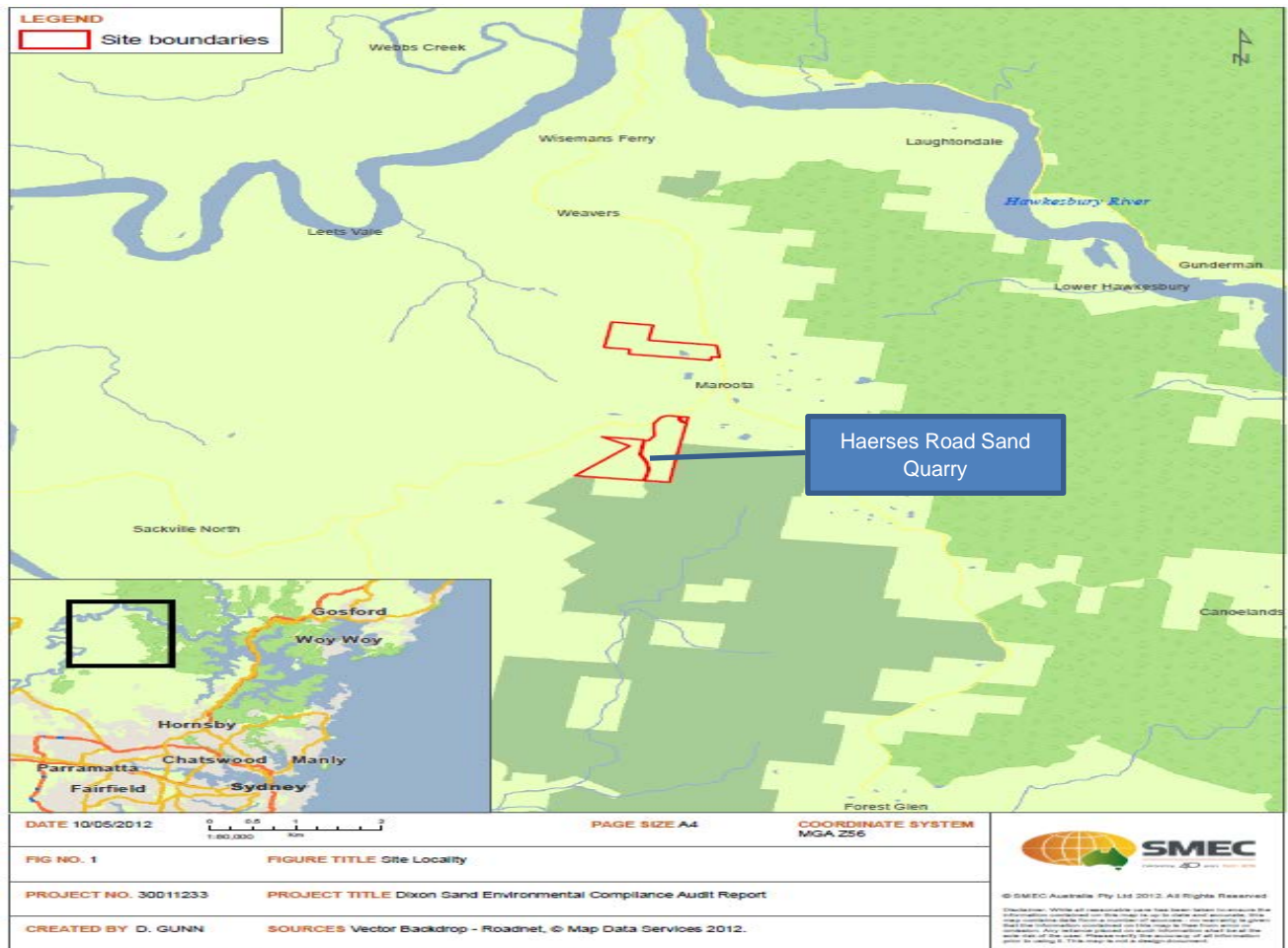


Figure 19: Haerses Road Sand Quarry (Image taken from Dixon Sands Environmental Compliance Audit (SMEC))

The compliance audit of the Haerses Road Sand Quarry consent (DA No. 165-7-2005), and the associated Groundwater Management Plan (2007) and Rehabilitation and Landscape Management Plan (2007) identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances.

In summary, Haerses Road Sand Quarry was found to be operating in compliance with a number of conditions and/or commitments. However, 15 administrative non-compliances and 3 low risk non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the Haerses Road Sand Quarry development consent are in relation to the lack of clear identification of extraction boundaries to delineate the extraction zone and the failure to implement required screen plantings.

The key non-compliance issue in regards to Groundwater Management relates to the non-submission of a revised Maximum Extraction Depth Map, which is required every three years.

The key non-compliance issues in regards to Rehabilitation and Landscape Management relates to the lack of identification and fencing of buffer zones and native vegetation areas, the inadequate installation of silt fences and maintenance of sediment control structures, and failure to implement required screen plantings.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.12 Mackas Sand Quarry

The Project Approval (PA08\_0142) for Mackas Sand Quarry was granted by the NSW Minister for Planning on 20 September 2009 (including latest modification determined by the Planning Assessment Commission on 30 September 2013). The site component of the compliance audit was conducted on 14 May 2015.

Mackas Sand's operations on Lot 218 and Lot 220 are located approximately 25 kilometres north-east of Newcastle near salt Ash in the Port Stephens local government area (LGA), New South Wales (Figure 1 & 20).

Lot 218 and Lot 220 are owned by the Worimi Local Aboriginal Land Council (WLALC). Mackas Sand currently has approval to undertake sand extraction operations on Lot 218 and Lot 220 under agreement with the landowners, WLALC .

The resource is estimated to be in excess of 21 million tonnes of sand resource. Lot 218 have an indefinite extraction life due to the ongoing movement of sand from adjoining mobile dunes. Sand extraction commenced in Lot 220 in November 2009, while extraction in Lot 218 commenced in February 2015.

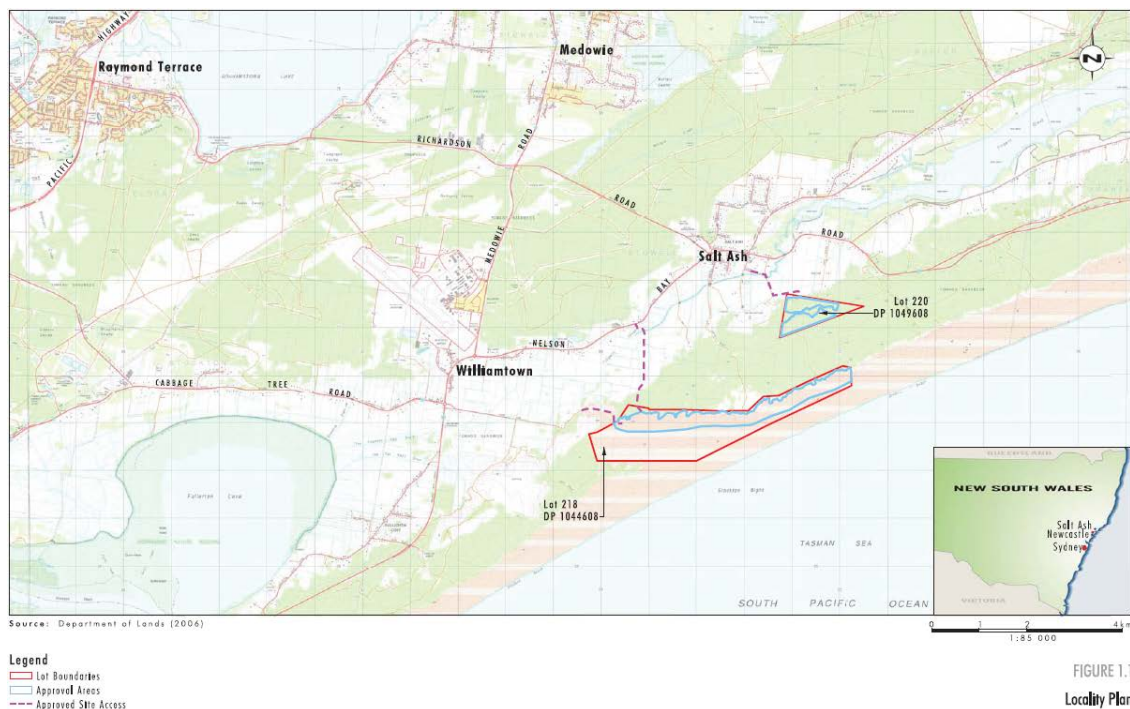


Figure 20: Mackas Sand Quarry (Image taken from Mackas Sand Environmental Management Strategy, Figure 1.1.)



Figure 21: Mackas Sand Quarry - Lot 218

In summary, Mackas Sand was found to be operating in compliance with a number of conditions and/or commitments. However, five administrative non-compliances, two low risk non-compliance, five moderate risk non-compliances and two high risk non-compliances with conditions and /or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

As part of this audit it was noted that Mackas Sand had two high risk non-compliances, which related to the total number of truck movements on the alternate access road from Lot 218 quarry (Schedule 3 condition 4B(c) and 4B(d)). Following this audit, Mackas Sand implemented controls on the weighbridge to monitor and control truck movement numbers. The Department has undertaken four unannounced surveillance inspections following this audit and on each occasion Mackas Sands was compliant with the truck movement conditions. Mackas Sand has submitted a modification application (modification 2), which relates to the modification of truck movements (in and out) of Lot 218. Further information relating to this modification is available on the major projects register: [http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=7178](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7178).

The key non-compliance issues in regards to the Groundwater Monitoring Program and Rehabilitation and Landscape Management Plan relate to the lack of revision/subsequent approval of the management plans and the implementation of the plans. Whilst current site practices of natural regeneration from adjacent vegetation and sand bank appears to be working effectively, further analysis should be undertaken and if appropriate, revision of the management plan to reflect current site practices.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.13 Multiquip Ardmore Park Quarry

The Major Project Approval (PA 07\_0155) for the Ardmore Park Quarry was granted by the Minister for Planning in September 2009.

The Ardmore Park Quarry is located approximately 4 kilometres south of the village of Bungonia (Figure 1, 22 & 23). The approval covers a sand and basalt extraction area totalling 46.8 hectares on largely cleared, gently undulating land which has for many years been used for grazing. The approval allows the extraction of up to 400,000 tonnes of product



annually. Although the proponent has triggered the approval the quarry is yet to commence production other than small quantities of material for project haulage road construction.



Figure 22: Multitquip Ardmore Park Quarry, Bungonia



Figure 23: Multitquip Ardmore Park Quarry, Bungonia (Image edited from Google Maps)

The compliance audit of the Multiquip Ardmore Park Quarry (MP 07\_0155), the subsequent modifications, and the Water Management Plan and associated Groundwater Monitoring Program, and the Landscape Management Plan identified a generally adequate level of compliance overall, whilst also identifying several non-compliances and administrative non-compliances with the Development Consent, Management Plans and associated EAs for the Ardmore Park project where relevant.

In summary, Ardmore Park was found to be operating in compliance with a number of conditions and/or commitments. However, three moderate risk non-compliances, one low risk non-compliance and 8 administrative non-compliances with conditions and /or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliances identified were in relation to failure to implement noise monitoring, and inadequate record keeping of heavy vehicle movement.

The key non-compliance issue with the Groundwater Monitoring Program related to the failure to fully implement groundwater monitoring. While this was deemed to be generally low risk at the time of the audit given that sand quarrying operations had not yet commenced, the potential to have a more significant impact exists if not addressed in a timely manner.

The only non-compliance noted in regards to the Landscape Management Plan was an administrative matter - the failure to maintain a log of the results of site maintenance inspections.

The audit identified a potential non-compliance in relation to the use of King Street, Bungonia by project-related heavy vehicles. The approval provides that such vehicles shall not use King Street.

Due to the lack of adequate vehicle movement records, the auditors were unable to determine the compliance status of this condition at the time of the audit and have conducted further investigations to assess compliance.

The operation is still at an early stage, with limited hard rock extraction commencing in late 2013. The proponent generally agreed with the audit report's recommendations, and indicated that as the quarry is at the start of its operation, the audit was very useful in regards to improving procedures and plans moving forward.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### **4.1.14 Old Northern Road Sand Quarry**

The Development Consent (DA No. 250-09-01) for Old Northern Road Sand Quarry was granted by the Land and Environment Court on 24 May 2004. Subsequent modifications to the approval have been granted, the most recent being Mod 4, approved 4 July 2015.

Old Northern Road Sand Quarry operations are located on Old Northern Road, Maroota, approximately 40 kilometres north of Parramatta (Figure 1 & 24). The site covers approximately 58.4 hectares, which includes the following Lots: Lot 29 DP752025, Lot 196

DP752025, Lot 1 DP547255 and Lot 2 DP547255. The site was historically used for pastures and orchards with an area of remnant vegetation. Land uses surrounding the site include agriculture, forestry, nature conservation and other sand quarries.

At present, material is being extracted from Lots 1 and 2 from the west and continues sequentially eastward following a series of nominal 100 metre wide strips. A central processing plant is located on Lot 196. Material from Haerses Road sand quarry is also transported to the Old Northern Road site for processing. Material is crushed and screened. Approximately 60% of the material is processed dry while the remaining 40% is washed to remove clay fines. The clay fines and silts are removed as tailings and pumped to the tailings storage dam.

This Development Consent allows for the extraction and processing of up to 495,000 tonnes of quarry products per annum.



Figure 24: Old Northern Road Sand Quarry (Image taken from Dixon Sands Environmental Compliance Audit)

The compliance audit of the Old Northern Road Sand Quarry consent (DA No. 250-09-01), subsequent modifications, Annexure B Mitigation Measures, and the associated Permissible Extraction Program (2005), Groundwater component of the Water Management Environmental Plan (2005) and Rehabilitation and Final Landscape Environmental Plan



(2005) identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances.

In summary, Old Northern Road Sand Quarry was found to be operating in compliance with a number of conditions and/or commitments. However, 23 administrative non-compliances, 12 low risk non-compliances and three moderate risk non-compliance with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the Old Northern Road Sand Quarry development consent and Annexure B Mitigation Measures are in relation to inadequate identification and fencing around buffer zones to prevent unauthorised access, failure to implement progressive rehabilitation of exposed areas and truck movements occurring on site prior to the allowable operating hours.

The key non-compliance issue with regards to Groundwater Management relates to the submission of various reports.

The key non-compliance issues with regards to Rehabilitation and Landscape Management relates to the failure to implement progressive rehabilitation of exposed areas and failure to undertake an annual assessment for evidence of rabbits.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### **4.1.15 PF Formation Hitchcock Rd**

The Project Approval (06\_0104) for PF Formation Sand Quarry was granted by the then NSW Minister for Planning on 3 February 2009.

PF Formation Sand Quarry operations are located in Maroota, approximately 40 kilometres north of Parramatta (Figure 1 & 25). The approval covers approximately 75 hectares.

Bulldozers strip topsoil and overburden from various pits within the project site and excavators then place raw material into dump trucks for transport to the on-site fixed processing or slurry plant located in the northern portion of the site. The coarse sand is initially screened and washed then pumped via a slurry pipeline under Wisemans Ferry Road to the main processing plant located approximately 750 metres to the north-west. The main processing plant, together with offices, workshops, concrete batching plant, fuel storage, weigh bridge loading and processed sand storage are located on Lot 198 DP752025. The processed sand is stockpiled then transported to markets for use in metropolitan Sydney's construction industry.

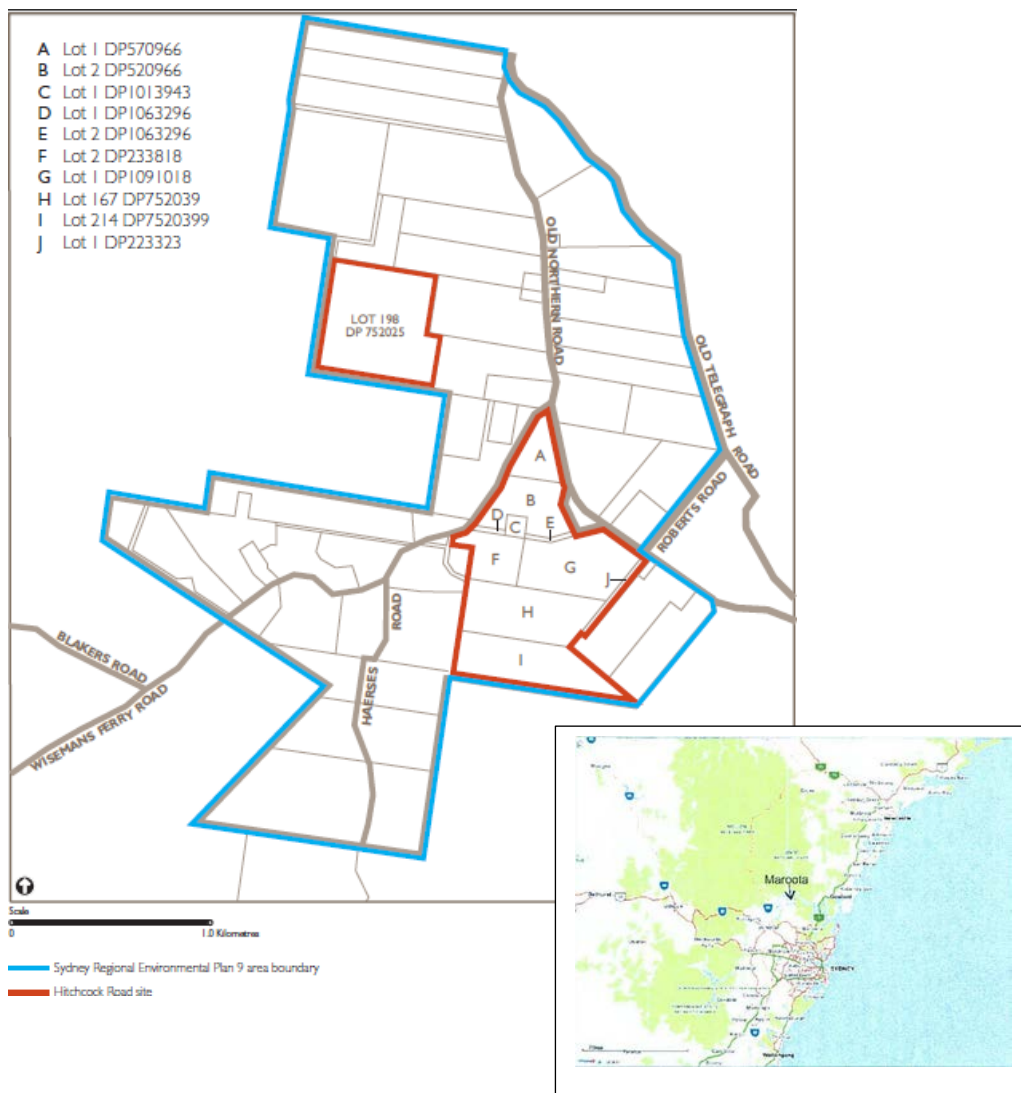


Figure 25: PF Formation Sand Quarry(Image taken from PF Formation – Environmental Strategy.)

The compliance audit of the PF Formation Sand Quarry consent (PA 06\_0104), Statement of Commitments and the associated Landscape Management Plan identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances.

In summary, PF Formation Sand Quarry was found to be operating generally in compliance with a number of conditions and/or commitments. However, 15 administrative non-compliances and seven low risk non-compliances with conditions and /or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the PF Formation Sand Quarry development consent are in relation to the ineffective controls for dust emissions and the tracking of material on to public roads, and the potential risk associated with the diesel storage facility.

The key non-compliance associated with the Statement of Commitments relates to the failure to minimise exposed areas on the site.

The key non-compliance issue with respect to the Landscape Management Program relates to the compliance of site bunds with commitments.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### **4.1.16 Roberts Road Sand Quarry**

The Development Consent (DA No. 267-11-99) for the Roberts Road Sand Quarry was granted by the then NSW Minister for Planning on 31 May 2000. A subsequent modification (Mod 1) to this approval was granted 29 November 2000. It is noted that a further modification, Mod 3 was approved on 18 August 2015 (however is outside the scope of this audit), and Mod 2 is currently with the Department for assessment.

Roberts Road Sand Quarry operations are located on Roberts Road near Old Northern Road, Maroota. Maroota is approximately 50 kilometres north-west of Sydney (refer to Figure 1). The site was formerly known as Sun-A-Rise Quarry, where construction of a water supply dam commenced around 1970. Consent was granted for extraction and processing of sand, clay and pebble material in 2000.

The approval allows for the extraction of up to 50 truck movements from the site per day, with extraction occurring 5.5 days per week. This equates to around 479,050 tonnes of quarry materials per annum.



Figure 26: Roberts Road Sand Quarry (Image taken from HB Resources Group – OEMP November 2011(VGT))



The compliance audit of the Roberts Road Sand Quarry consent (DA No. 267-11-99), subsequent modifications and the associated Soil and Water Management Plan, Flora and Fauna Management Plan and the Rehabilitation Plan identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances.

In summary, Roberts Road Sand Quarry was found to be operating in compliance with a number of conditions and/or commitments. However, 11 administrative non-compliances and nine low risk non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issues identified as part of the compliance audit against the Roberts Road Sand Quarry development consent are in relation to management of hydrocarbons, in particular bunding of oil drums and maintenance of facilities, dust management and monitoring, and failure to implement progressive rehabilitation.

While not assessed as part of this audit, it is noted that MOD 3 was approved on 18 August 2015 and has a revised depth of extraction limit of 186 metres AHD. The site will need to ensure compliance against this revised depth of extraction in the future.

The key non-compliance issue with respect to the Soil and Water Management Plan relates to the cessation of groundwater quality monitoring.

The key non-compliance issue in regards to the Flora and Fauna Management Plan relates to continued access by stock to native vegetation areas.

The key non-compliance issue in regards to the Rehabilitation Management Plan relates to the failure to implement progressive rehabilitation.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.17 Salt Ash Sand Quarry

The Project Approval (PA 07\_0094) for Salt Ash Sand Quarry (SASQ) was granted by the NSW Minister for Planning on 29 October 2010 (including latest modification (Mod 3 - approved August 2014)).

ATB Morton Pty Limited (ATB Morton) has project approval to construct and operate the SASQ at a site approximately 33 kilometres northeast of Newcastle in the Port Stephens local government area (Lot 4042 DP1090633; Lot 632 DP609506; and Lot 633 DP609506). The project site is situated on the Tomago Sandbeds, which form part of the Stockton Bight dune system. (Figure 1 & 28)

The approval allows ATB Morton to extract and process sand on site, and transport up to 201,000 tonnes of extractive material via a new haul road to Janet Parade and thence via Nelson Bay Road. The sand resource is removed by front-end loader, loaded onto trucks and delivered to an onsite washing plant. Washed sand is stockpiled onsite, loaded onto road registered trucks, with most product delivered to ATB Morton's concrete batching plants.



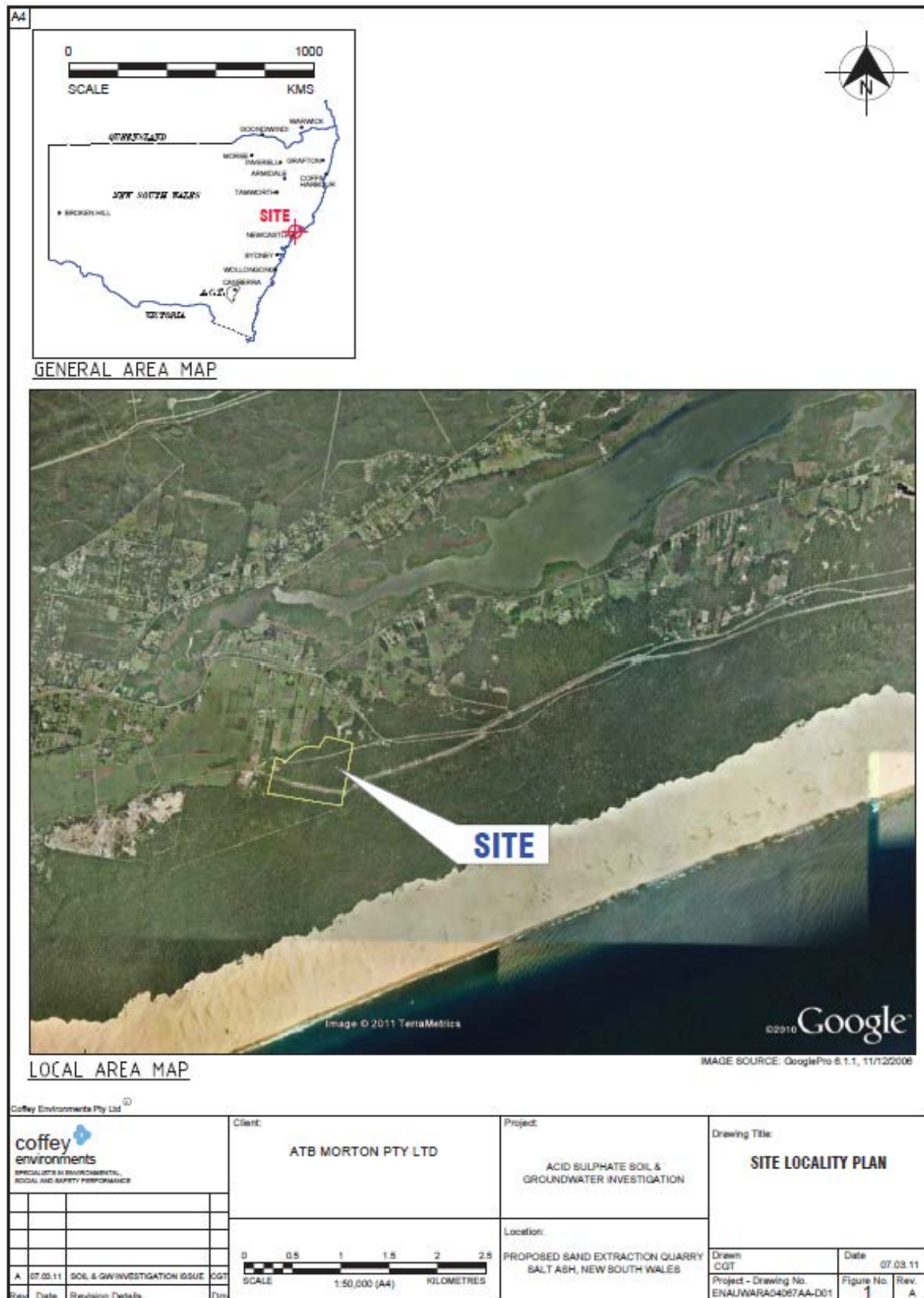


Figure 28: Salt Ash Quarry (Image taken from Salt Ash – Environmental Assessment)

The compliance audit of the Salt Ash Sand Quarry project approval (PA 07\_0094), subsequent modifications and the associated Groundwater Monitoring Program and Rehabilitation and Landscape Management Plans identified several non-compliances and

administrative non-compliances with the Project Approval, Management Plans and associated EAs for SASQ where relevant.

In summary, SASQ was found to be operating in compliance with a number of conditions and/or commitments. However, two low risk non-compliance, three moderate risk non-compliances, and nine administrative non-compliances with conditions and /or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The moderate non-compliances related to:

- Inadequate controls to manage extraction depth
- Inadequate implementation of groundwater monitoring programs
- Inadequate boundary demarcation.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.

#### 4.1.18 South Ballina Sand Quarry

The Major Project Approval (MP 06\_0297) for the South Ballina Sand Quarry was granted by the Minister for Planning in September 2008.

South Ballina Sand Quarry (SBSQ) operations are located approximately 3 kilometres East of the Ballina town centre (Figure 1 & 29). The approval covers approximately 5.3 hectares of once vegetated (cleared as part of the approval) hills/ sand dunes and extracts up to 75,000 tonnes of sand per annum.



Figure 5: South Ballina Sand Quarry (Image taken from South Ballina Sand Quarry – Environmental Assessment)



The compliance audit of the South Ballina Sand Quarry consent (MP 06\_0297), subsequent modifications and the associated Erosion and Sediment Control Plan and Water Management Program and the Rehabilitation and Vegetation Offset Management Plan identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances with the Development Consent, Management Plans and associated EAs for SBSQ where relevant.

In summary, SBSQ was found to be operating in compliance with a number of conditions and/or commitments. However, 9 administrative non-compliances and 5 low risk non-compliances with conditions and /or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issue identified as part of the compliance audit against the SBSQ development consent is in relation to reasonable and feasible measures to minimise harm to the environment in accordance with Schedule 2, Condition 1. In particular, not implementing adequate erosion and sediment controls in various areas, and survey controls for groundwater standoff.

The key non-compliance issues in regards to the Erosion and Sediment Control Plan and Water Management Program relates to the lack of adequate control of extraction depth and the potential for groundwater interaction.

In terms of on-site environmental management, site and corporate staff indicated a good understanding of the key rehabilitation and extraction issues and were focused on implementing measures that minimise impacts. For example, actively undertaking progressive rehabilitation of areas that have ceased extraction.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed..

#### **4.1.19 Tweed Hanson Sand Quarry**

The Development Consent (DA 152-6-2005) for the Tweed (Hanson) Sand Quarry was granted by the Minister for Planning in July 2006.

Tweed (Hanson) Sand Quarry (THSQ) operations are located approximately 10 kilometres South of Tweed Heads in close proximity to township of Cudgen (approximately 3 kilometres west) in the Tweed Shire local government area (LGA), New South Wales (Figure 1 & 31). The approval covers approximately 47 hectares of once vegetated (cleared as part of the approval) farmland and extracts up to 285, tonnes of sand per annum.



Figure 30: Tweed (Hanson) Sand Quarry – Extraction area

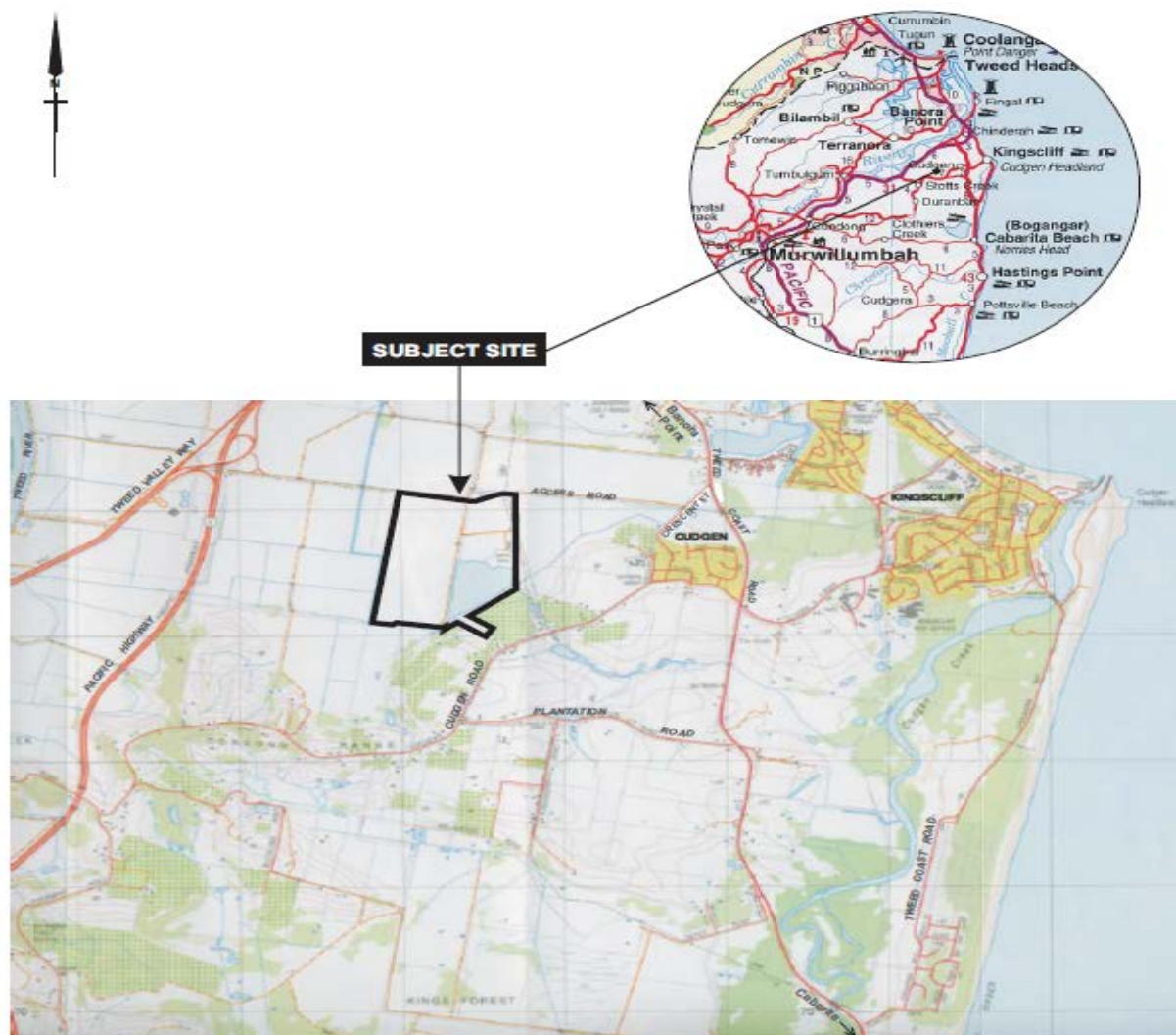


Figure 6: Tweed (Hanson) Sand Quarry (Image taken from Tweed (Hanson) Sand Quarry – Rehabilitation and Landscape Management Plan)

The compliance audit of the Tweed (Hanson) Sand Quarry consent (DA 152-6-2005), subsequent modifications and the associated Rehabilitation and Landscape Management Plan (2010) and the Soil and Water Management Plan (2010) identified an adequate level of compliance, whilst also identifying several non-compliances and administrative non-compliances with the Development Consent, Management Plans and associated EAs for THSQ where relevant.

In summary, THSQ was found to be operating in compliance with a number of conditions and/or commitments. However, 16 administrative non-compliances and two low risk non-compliances with conditions and/or commitments (or sub elements of conditions/commitments) were identified where action is required to ensure compliance is achieved.

The key non-compliance issue identified as part of the compliance audit against the THSQ development consent is in relation to water quality exceedances and potential impacts in accordance with Schedule 3, Condition 12. Furthermore, no approval of the Environmental Monitoring Program or Noise Monitoring Program could be located in accordance with Schedule 5, Condition 2 and Schedule 3, condition 8 respectively.

The key non-compliance issues in regards to the Rehabilitation and Landscape Management Plan and Soil and Water Management Plan relates to the lack of adequate investigation following exceedances of water quality criteria and the non-installation of photographic monitoring points to measure rehabilitation success.

In terms of on-site environmental management, site and corporate staff indicated a good understanding of the key extraction issues and were focused on implementing measures that minimise impacts. For example, actively undertaking progressive rehabilitation of areas that have ceased extraction and ensuring the final underwater batter was stable and compliant through active topography mapping.

Site and corporate staff demonstrated an understanding of the importance of environmental management and compliance with conditions of consent. At the time of the audit identified non compliances were in the process of being addressed.