

ASSESSMENT REPORT

CUDGEN LAKES SAND QUARRY Modification 1 – Temporary Processing Area (05_0103 MOD 1)

1. BACKGROUND

Gales-Kingscliff Pty Ltd (Gales-Kingscliff) owns and operates the Cudgen Lakes Sand Quarry, located off Crescent Street, Cudgen, approximately 2.5 kilometres west of Kingscliff in the Tweed local government area (**Figure 1**). Operations at the quarry are currently undertaken in accordance with project approval MP 05_0103, which was granted by the Minister for Planning on 16 June 2009.

The objectives of the Cudgen Lakes Sand Extraction Project are to provide:

- the necessary sand resources to raise the level of Gales-Kingscliff's landholdings in the Kingscliff / Chinderah / Cudgen area in accordance with its proposed development strategy;
- a source of construction materials to the regional construction industry; and
- a licenced facility capable of accepting, treating, storing and/or processing virgin excavated natural material (VENM).

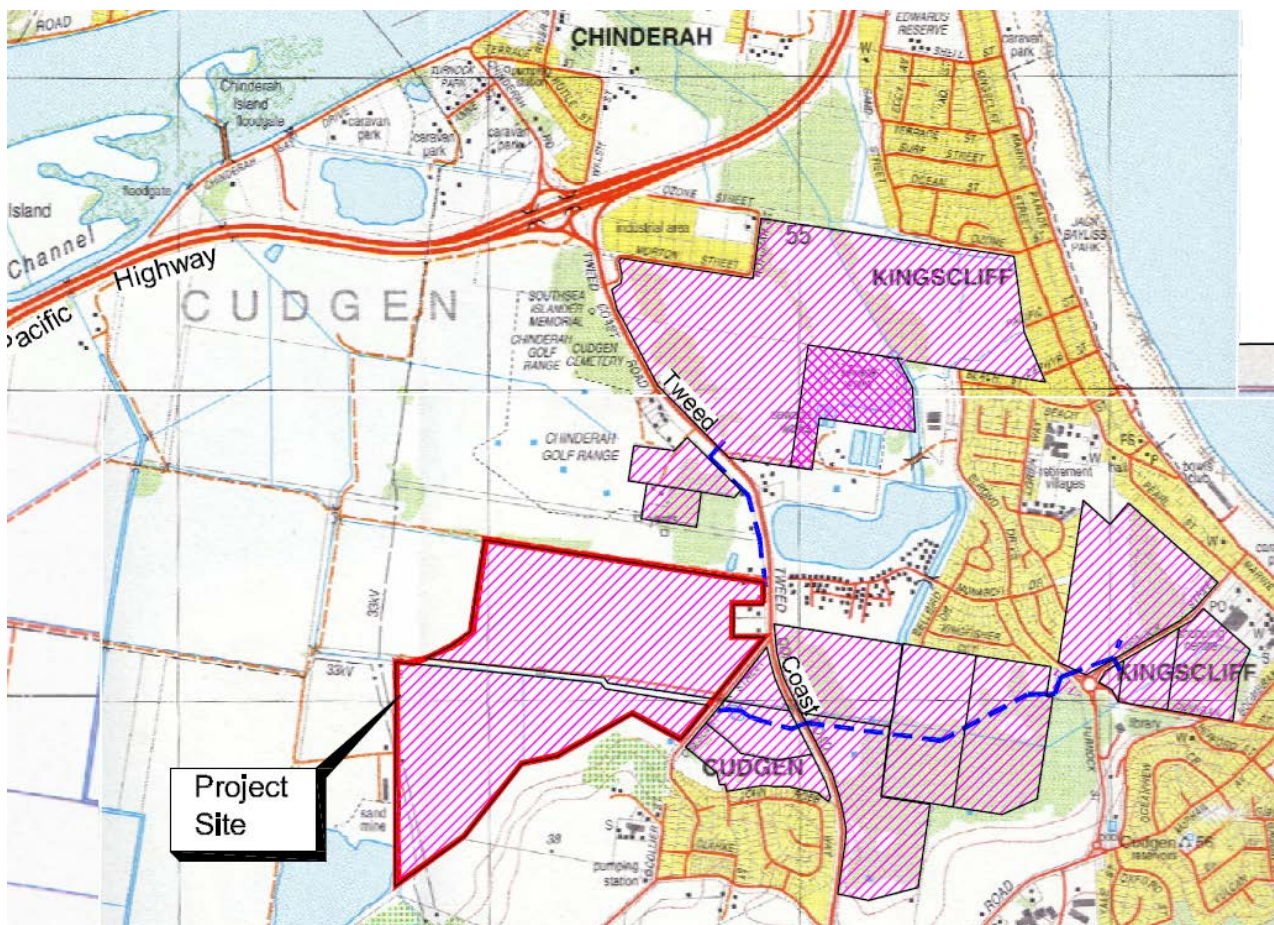


Figure 1: Location of the Cudgen Lakes Sand Quarry

The recovery of high quality fine sand resources to supply the region's construction industry is a secondary function of the quarry. However, to meet current market demands, Gales-Kingscliff is seeking approval to construct a temporary processing area to enable the commencement of this type of sand extraction and processing. The temporary processing area would be used for up to 6 years, prior to the construction of the approved permanent processing area.

2. PROPOSED MODIFICATION

On 4 December 2015, Gales-Kingscliff lodged a modification application with the Department, under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The modification application proposes to establish and use an initial processing area located within the northwestern corner of the approved southern extraction area prior to the use of the permanent processing area (see **Figures 2 and 3**). The modification proposes to:

- construct an initial processing area pad approximately 100 metres (m) by 100 m with a height of approximately 1 m above ground level;
- construct 2 m high bunding on the southern and southeastern boundaries of the initial processing area;
- construct a temporary site entrance and access road from Altona Drive;
- obtain fill material from an existing sand stockpile and imported surface material; and
- undertake site landscaping.

The initial processing area would include a small sand wash plant, which would be fed from a surge hopper and discharge via a short conveyor to a product stockpile. The wash plant and conveyor would be powered by a 200 kW diesel generator housed within an acoustic and weather protected enclosure. Washed sand would be stored in a stockpile of up to 6000 tonnes with a maximum height of 5 m.

The initial processing area would be used for up to 6 years, depending on market conditions. Following the construction of the permanent processing area north of Altona Drive, the initial processing area would be decommissioned and the fill material either re-purposed on site for construction of bunding, sold as fill material or placed within the southern extraction pond. The sand resource beneath the initial processing area would then be recovered through the ongoing dredging operation.

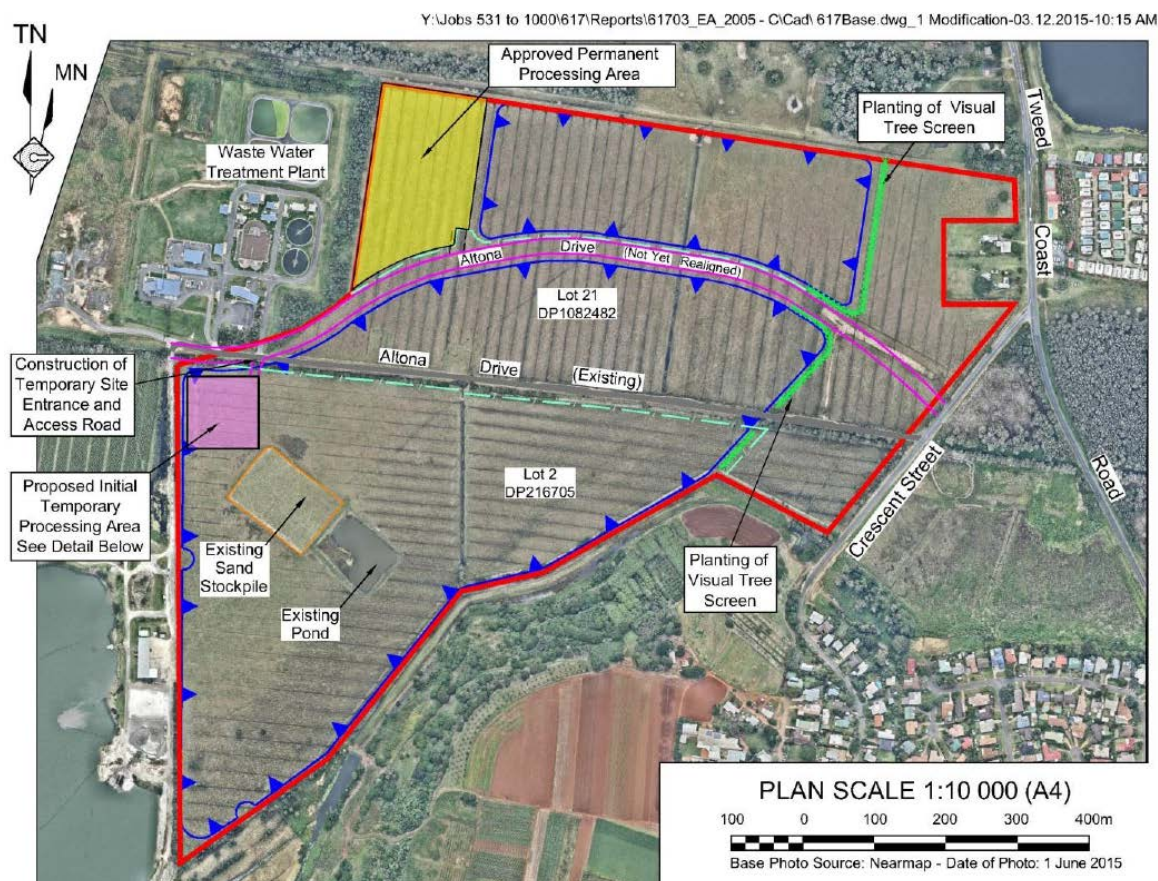


Figure 2: Approved and proposed layout of the Cudgen Lakes Sand Quarry

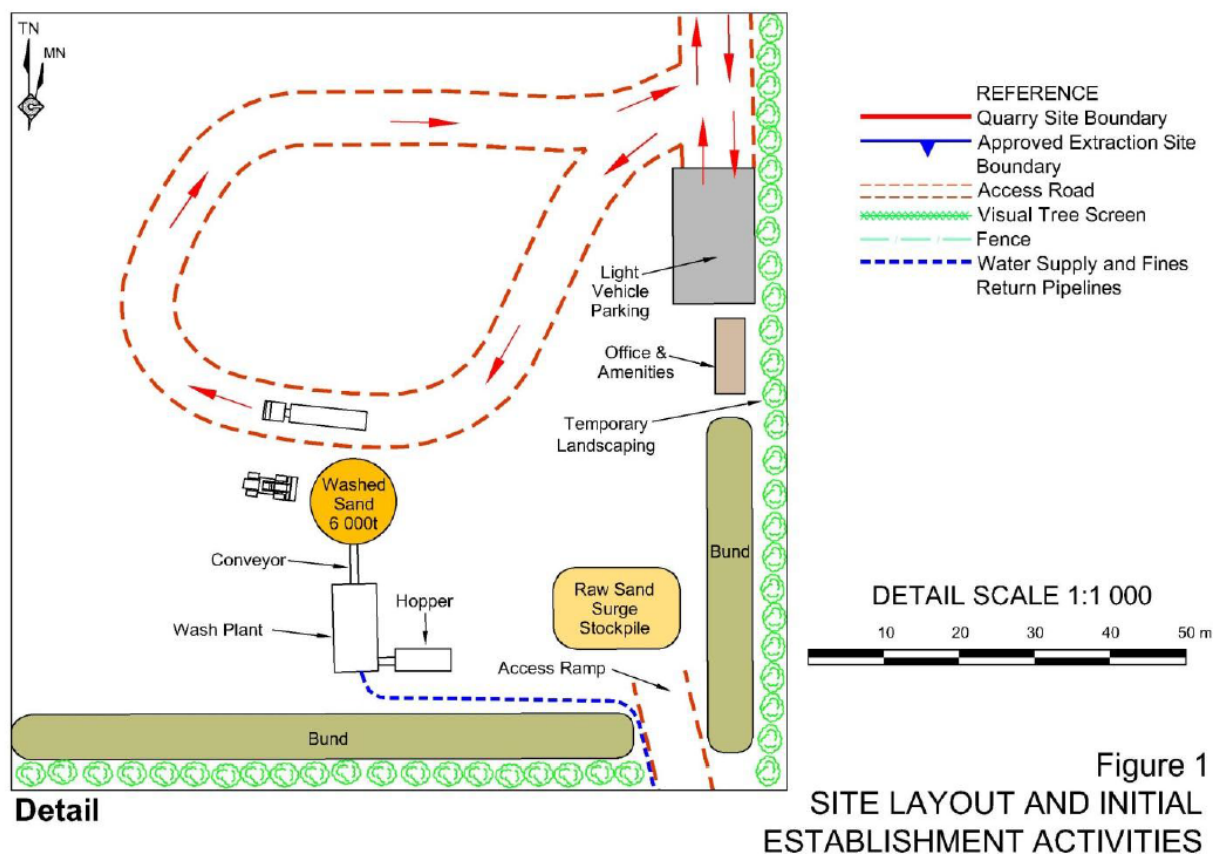


Figure 3: Proposed temporary processing area and activities

3. STATUTORY CONTEXT

3.1 Section 75W

MP 05_0103 was approved by the Minister for Planning under Part 3A of the EP&A Act on 16 June 2009. In accordance with clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000* and the transitional arrangements under Schedule 6A of the EP&A Act, the proposed modification is to be determined under the former section 75W of the EP&A Act.

The Department is satisfied that the proposal can be characterised as a modification to the existing project approval. The modification would not result in any change to core elements of the quarry, such as:

- total extraction rate and quarry footprint;
- extraction depth and methods;
- product transportation;
- environmental management activities;
- approved final landform; and
- workforce and hours of operations.

Given these considerations, the Department is satisfied that the proposed modifications are within the scope of section 75W, and may be determined accordingly.

3.2 Approval Authority

The Minister for Planning is the approval authority for the application. However, as Gales-Kingscliff has not reported any political donations, the local Council does not object to the proposal, and there were no public objections, the Director, Resource Assessments, may determine the application under the Minister's delegation of 16 February 2015.

4. CONSULTATION

The Department is not obliged to undertake any consultation relating to the proposed modification. However, the application and supporting environmental assessment (EA, see **Appendix A**) and all other project-related documentation were made publicly available on the Department's website.

Based on the potential impacts of the proposal, the Department invited comment from the Environmental Protection Authority (EPA), Office of Environment and Heritage (OEH) and Tweed Shire Council (Council). A summary of the issues raised in these submissions is provided below. Copies of agency submissions and a copy of Gales-Kingscliff's Response to Submissions (RTS) are included at **Appendices B** and **C**, respectively.

Council raised concern over the lack of a hydraulic assessment or reference to the extensive flood impact assessments that were provided with the original project application, and requested that additional hydraulic assessment is undertaken regarding impacts of the proposed development on flood behaviour.

Council was also concerned about the location of the temporary office, and its proximity to the Kingscliff Waste Water Treatment Plant (WWTP). The *Tweed Shire Development Control Plan 2008* (DCP) requires no development to occur within 200 m of the WWTP, except for uses of an open air nature. Also, from 200 to 400 m, buildings associated with industrial, commerce or trade must be designed with ventilation emanating from the side facing away from the WWTP and office facilities must be air conditioned.

Council also raised potential noise and air quality impacts on a recently-approved 40-lot subdivision to the southwest of the proposed temporary processing area.

OEH also requested that additional hydraulic assessment be undertaken regarding the impacts of the proposed development on flood behaviour.

The **EPA** raised no concerns over the proposed modification, but requested that Gales-Kingscliff update its management plans to reflect the modification, and ensure that all imported material is clean and uncontaminated and that all necessary approvals are in place for material to be accepted on the site.

5. ASSESSMENT

In assessing the merits of the proposal, the Department has considered the:

- EA for the original project;
- existing conditions of approval;
- EA for the proposed modification;
- relevant environmental planning instruments, policies and guidelines; and
- requirements of the EP&A Act, including the objects of the Act.

The modification application seeks to construct and use a temporary processing area prior to the use of the approved permanent processing area under MP 05_0103. This would allow Gales-Kingscliff to supply demand for high quality fine sand resources in the region's construction industry.

The Department considers the key issues of the proposal to be impacts associated with air quality, noise, flooding and the adjacent WWTP. Consideration of these impacts is provided below, with consideration of other impacts provided in **Table 1**.

5.1 Air Quality

An Air Quality Impact Assessment (AQIA 2015) was undertaken to determine the potential air quality implications of the temporary processing area at sensitive receptors. This assessment used data from the Air Quality Impact Assessment undertaken as part of the EA for the original project (AQIA 2008).

The use of a sand wash plant and the absence of dry screening and processing at the temporary processing site would remove key emission sources included in the AQIA 2008 for the permanent processing area. The temporary site would be located further away from sensitive receivers to the north and east of the project. However, it would be marginally closer to surrounding receivers to the south of the project.

The AQIA 2015 included modelling of air quality concentrations at sensitive receivers using predicted emissions associated with the proposed modification combined with incremental concentrations from the Hanson Tweed Sand Quarry (HTSQ), located immediately west of the project area. This model predicted an increase in maximum project-related 24-hour average PM₁₀ concentrations at three residences, with increases ranging between 0.6 and 4.2 µg/m³. Cumulative concentrations were also modelled which adopted the ambient baseline concentrations from the AQIA 2008 (31 µg/m³ for 24-hour average PM₁₀ and 17 µg/m³ annual average PM₁₀). The maximum 24-hour average PM₁₀ cumulative concentration at any residence was predicted to be 45.2 µg/m³. The proposal is not predicted to exceed the 24-hour average PM₁₀ criterion of 50 µg/m³ at any residence.

Modelling predicted no increase in annual average PM₁₀ concentrations at any sensitive receiver and a maximum cumulative annual average PM₁₀ concentration of 17.6 µg/m³. This is significantly less than the existing approved criterion of 30 µg/m³.

Comparing the AQIA 2008 and the AQIA 2015 shows that maximum cumulative concentrations for 24-hour average PM₁₀ and annual average PM₁₀ are higher for the permanent processing area (50 µg/m³ and 18.4 µg/m³ respectively) than the proposed temporary processing area (45.2 µg/m³ and 17.6 µg/m³ respectively).

Council requested that additional assessment be undertaken for air quality impacts on a recently-approved 40-lot subdivision to the southwest of the proposed temporary processing area. Gales-Kingscliff's RTS clarified that Residence A (which is considered in the AQIA 2015), is at the same distance as the closest subdivided block within the approved subdivision immediately northeast of Residence A (**Figure 4**). Therefore, Gales-Kingscliff deemed this site representative of the 40-lot subdivision. The Department accepts this position.

In conclusion, as the temporary processing area would not result in any likely exceedance to the existing approved criteria, the Department is satisfied that air quality impacts from the proposed modification would be low and acceptable.

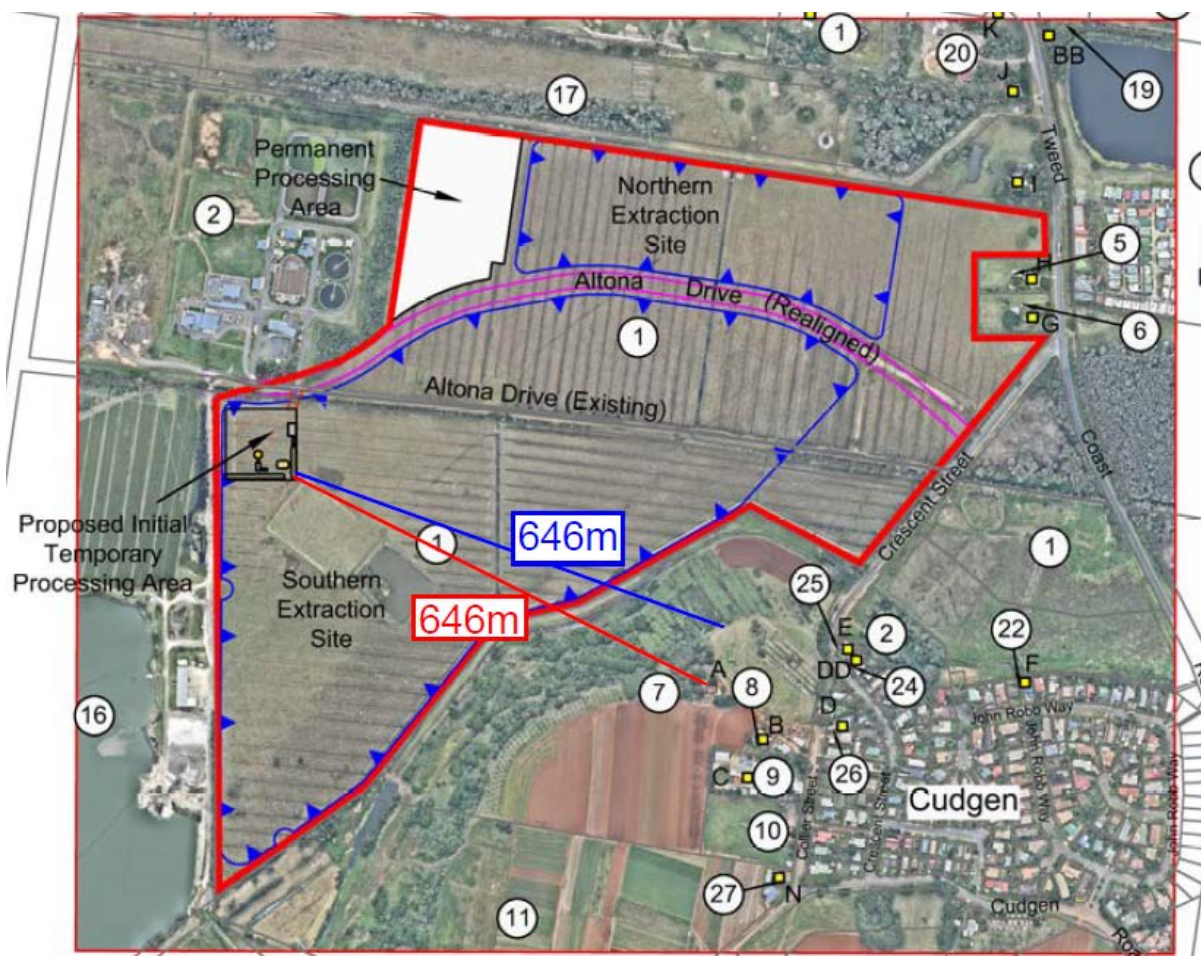


Figure 4: Distance to approved subdivision and Residence A

5.2 Noise

A Noise Impact Assessment (NIA 2015) for the proposed temporary processing area used modelling results from the 2008 Noise Impact Assessment (NIA 2008), as well as additional modelling assuming a relocated front-end-loader and wash plant.

The temporary processing area would be located approximately 200 m southwest of the approved permanent processing area, closer to residents to the south and southeast. The NIA 2015 labelled the closest receivers to the temporary processing area as B, DD and O (**Figure 4**). In response to Council's submission, the Department requested that noise modelling was undertaken for the recently-approved 40-lot subdivisions.

Noise modelling was undertaken for two atmospheric conditions including:

- Scenario 1 - 20°C, 70% relative humidity, calm conditions; and
- Scenario 2 - 20°C, 70% relative humidity, 3 m/sec wind from source to receiver.

Modelling under Scenario 1 indicated that there would be no exceedance of the noise criteria at any receiver location. However modelling under Scenario 2 predicted a non-compliance of 0.4 dB(A) at the new 40-lot subdivision. As the non-compliance would most likely only occur during light northwesterly winds and an exceedance of 0.4 dB(A) is inaudible to the human ear, the Department considers that this exceedance is insignificant and that noise impacts from the proposal are acceptable.

5.3 Flooding

The project site is located on a broad flat alluvial floodplain situated on the southern bank of the Tweed River. Both Council and OEH requested that additional hydraulic assessment was undertaken by Gales-Kingscliff regarding the impacts of the proposal on flood behaviour. Council noted that while the approved permanent processing area is located downstream of the filled WWTP site and out of the flow path for flood waters, the proposed temporary processing area is located south of this fill and may constrict the width available to floodwater flow in this area.

To provide clarity, Gales-Kingscliff submitted a diagram which confirmed the temporary processing area would be filled to the same level as the flood bunding around the entire project site required as part of the original project approval. Council was then satisfied that this filling would not have a significant adverse impact on local or regional flood behaviour above that of the approved development, since the primary control on flood behaviour would continue to be the bunding around the overall site. Council requested that conditions limit the fill pad in the proposed temporary processing area to a level of RL 1.8 m AHD (excluding acoustic barriers, stockpiles, equipment and buildings).

The Department is satisfied that the proposal would not have a significant adverse impact on flood behaviour and has recommended a condition to limit the fill pad to a level of RL 1.8 m AHD.

5.4 Waste Water Treatment Plant

The proposed temporary processing area is located adjacent to Council's WWTP. Council raised concern over the location of the temporary office facilities within the proposed processing area, as its DCP sets a 200 m 'no development' buffer (with the exception of open air facilities) around the WWTP.

In response, Gales-Kingscliff proposed two alternative locations for the temporary office facilities, located at 200 m or 240 m from the WWTP (**Figure 5**). The Department has recommended that the furthest location of 240 m be adopted and that the office facilities are designed and constructed according to the requirements of the DCP including:

- ventilation emanating from the side facing away from the WWTP; and
- office facilities to be air conditioned.

5.4 Other Impacts

The Department is satisfied that the other impacts of the proposed modification are likely to be minor or negligible. The assessment of other impacts is summarised in **Table 1** below.

Table 1: Assessment of other impacts

Issue	Consideration and Assessment	Recommendation
<i>Transportation</i>	• The proposed temporary processing area would not result in any increase in traffic movements or changes to transport routes. • Given that no VENM would be received at the temporary processing area for processing and sale, traffic movements during the use of the initial processing area would be less than existing approved levels. • Gales-Kingscliff would continue to implement all existing traffic management measures.	No additional conditions necessary.
<i>Flora, Fauna and Heritage</i>	• The proposed temporary processing area would be located wholly within the approved disturbance footprint of the southern extraction area. Therefore no changes to flora, fauna or heritage impacts are likely to occur.	No additional conditions necessary.

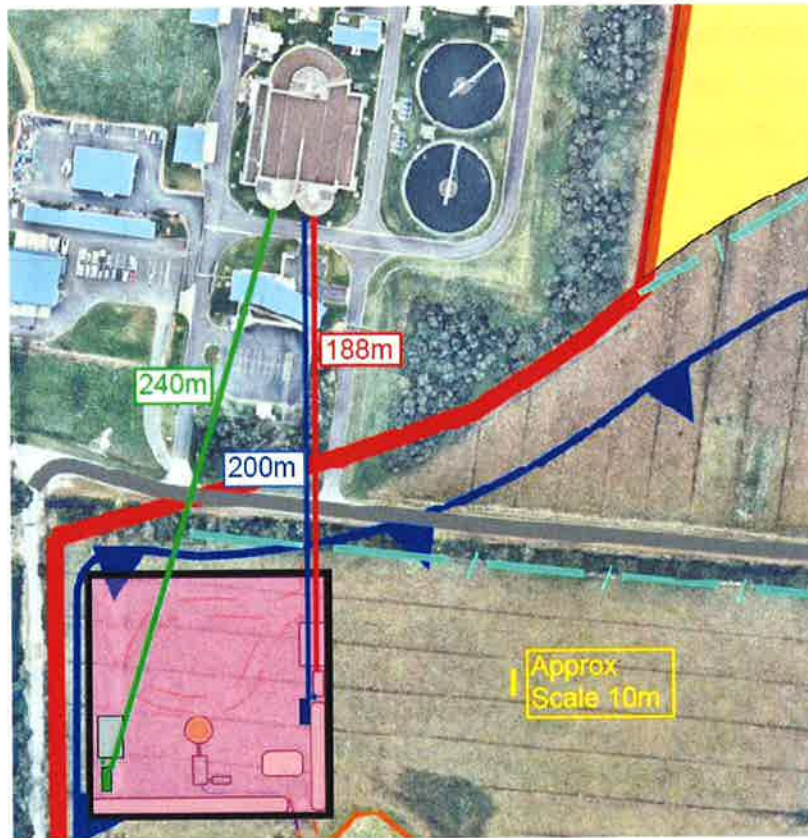


Figure 5: Alternative office locations

6. RECOMMENDED CONDITIONS

The Department has drafted a recommended notice of modification (see **Appendix D**) and a consolidated version of the approval as it is proposed to be modified (see **Appendix E**). The Department has also recommended administrative changes to conditions to update former agency and position titles, and to clarify the implementation of management plans.

The project approval number MP 05_0103 has also been amended to MP 05_0103B, since MP 05_0103 had previously inadvertently been applied to two separate approvals.

7. CONCLUSION

The Department has assessed the merits of the proposed modification in accordance with the requirements of the EP&A Act. This assessment has shown that the proposed temporary processing area can be constructed and operated with minimal change to the environmental impacts associated with the previously approved layout of the quarry and its processing area.

The Department has not recommended any changes to the environmental performance standards and criteria contained in existing conditions of approval. Neighbours to the quarry can expect the same level of protection from noise and air quality impacts as provided in the approval, as originally granted.

8. RECOMMENDATION

It is recommended that the Director, Resource Assessments, as delegate of the Minister:

- **considers** the findings and recommendations of this report;
- **determines** that the modification is within the scope of section 75W of the EP&A Act;
- **approves** the modification application, under section 75W, subject to conditions; and
- **signs** the notice of modification at **Appendix D**.

Colin Phillips
Colin Phillips
Team Leader
16.02.16

Howard Reed
Howard Reed
Director Resource Assessments
19.2.16

APPENDIX A – ENVIRONMENTAL ASSESSMENT

Refer to the Department's website:

https://majorprojects.affinitylive.com/?action=view_job&id=7429

APPENDIX B – COPY OF SUBMISSIONS

Refer to the Department's website:

https://majorprojects.affinitylive.com/?action=view_job&id=7429

APPENDIX C – RESPONSE TO SUBMISSIONS

Refer to the Department's website:

https://majorprojects.affinitylive.com/?action=view_job&id=7429

APPENDIX D – NOTICE OF MODIFICATION

APPENDIX E – CONSOLIDATED PROJECT APPROVAL