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Toogoom Seawall
Hervey Bay
Acid Sulphate Soil Management Plan

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1. Introduction

1.1 Background

Hervey Bay City Council commissioned Connell Wagner to prepare an Acid Sulphate Soil Management Plan (ASSMP) for submission as part of the Development Application for the design of a seawall at Toogoom Beach, Hervey Bay. The site is located along the Esplanade between No. 62 and No. 74 Kingfisher Parade, Toogoom.

Review of the Draft Planning Scheme Maps for the Hervey Bay City Council show that no Acid Sulphate Soil (ASS) areas are indicated within the Toogoom area (www.herveybay.qld.gov.au 19/04/05).

A preliminary ASS investigation was undertaken as part of the geotechnical investigation for the site. Three borehole locations were excavated to depths ranging between 5.5m and 7.4m below ground level (bgl). A total of seven samples were collected for Peroxide Oxidation Combined Acidity and Sulphate (POCAS) analysis. Observations are summarised as follows:

- Subsurface profile material intercepted during borehole excavation and sampling was identified as sand extending from the surface to depths ranging between 4.0m and 5.5m bgl, with clayey sand and sandy clay layers underlying the sand;
- Laboratory pH (KCl) results ranged between 6.7 and 7.9 (neutral);
- Laboratory oxidised pH results ranged between 4.0 and 8.2;
- TAA results indicated that no existing acidity was recorded during the investigation;
- TPA results indicated that there was one sample collected that recorded potential acidity above the ASS Action Criteria (Dear et al 2002 p6) within the BH1 1.0m sample, however S (POS) results for this sample indicated that the %S was below the laboratory detection level of 0.02%S and the ASS Action Criteria 0.03%S, respectively;
- All other TPA results indicated that no potential acidity was detected at the other sampling locations;
- TSA results indicated that the potential acidity detected at BH1 1.0m was attributed to sulphidic acidity;
- S(POS) results indicated that there was one sample collected that recorded %S above the ASS Action Criteria (Dear et al 2002 p6) within the BH2 4.0m sample, however the existing and potential acidity (TAA+TPA) results for this sample were recorded below the laboratory detection levels of 2 mole H^+/t and 18 mole H^+/t, respectively; and
- Groundwater levels were recorded between 1.9m and 2.0m bgl.

(Source: Connell Wagner February 2005).

For the purpose of constructing the seawall at Toogoom it is proposed to excavate in the order of 25,000m³ of insitu material down to a depth of approximately –1m AHD. It is proposed that this material will be utilised during construction as the fill material for the contents of the geofabric bags (terrafix 1200RP). Material will be placed into the geofabric bags and then returned to the insitu location to form the seawall structure.

1.2 Basis for the ASSMP

An important requirement of a project of this nature is to prepare an ASSMP to ensure the environmental safeguards proposed as a result of the findings of the preliminary ASS investigation are enacted in an appropriate and timely fashion.

Design and construction measures/strategies will ensure that all reasonable measures are taken to protect the environmental values that may otherwise be impacted as a result of disturbance of ASS material during construction activities associated with the proposed Toogoom Seawall.

Based on the findings of the preliminary geotechnical investigation (Connell Wagner February 2005) and the engineering assessment for the development, it was recommended that a detailed ASS investigation should be completed below the footprint of the seawall structure, where material is going to be excavated from below the water table.

1.3 Aim of the ASSMP

The purpose of implementing an ASSMP during construction is to minimise and mitigate identified potential environmental impacts through planned and programmed implementation of appropriate controls for handling, managing and treating (if required) ASS material.

Where contractor's work covers routine and non routine activities not stipulated in the ASSMP, it is the responsibility of the contractor to identify the environmental aspects associated with these activities and develop and implement plans and procedures to address these activities.

The intent of this ASSMP is to minimise the potential for environmental impacts to occur as a result of the excavation of ASS (actual and potential) material during the construction phase of the proposed development. The ASSMP is the key reference document that identifies actions and commitments to be followed by the nominated contractors during construction.

The ASSMP shall serve as a benchmark for measuring the effectiveness of environmental protection and management during the construction phase of the project, which relates to the disturbance, handling, treatment and disposal of ASS material. This shall be achieved by specifying monitoring, reporting and auditing requirements, with nominated responsibilities and timing to ensure necessary performance objectives are met. The ASSMP also makes provision, as appropriate, for unforeseen events by outlining corrective action which may be implemented in these situations.

To increase the useability of the ASSMP, it has been written as a stand-alone document, which will be reviewed regularly to reflect changes in new processes, controls and procedures.

The ASSMP provides the overall general ASS management requirements for the proposed development. Specific ASS management requirements for individual Construction Contractors will be dependent on the nature and scale of the scope of works.

The management measures and strategies outlined in this ASSMP are consistent with the requirements and recommendations in the *Queensland Acid Sulfate Soil Technical Manual Soil Management Guidelines* Version 3.8 (Dear S.E., et al 2002) as developed by the Department of Natural Resources and Mines. These principles are summarised below.

- ASS management principles and protection measures should incorporate the protection of the groundwater quality and hydrological processes of the site, particularly with respect to mobilisation of potential contaminants and acidity that may result from the disturbance of ASS material.
- Avoid/minimise excavation below 5m AHD where practicable by implementing the following measures, particularly in the potential ASS affected areas of the site:
  - Staging proposed site development activities;
  - Application of appropriate design principles;
  - Minimise the duration of time that the excavated material is stockpiled/exposed;
  - Control liquid discharges from excavation and stockpiling areas; and

  - Use visual inspection during excavation activities as a method of identifying material that may require further investigation and segregate this material into a bunded stockpiling area.
- In the event that ASS treatment is required for excavated material, it should include, but not be limited to the following measures:
  - Separation of the material into treatment stockpiles in accordance with the relevant treatment level required based on the volume of disturbance;
  - Placement of the material within a sealed, lined and bunded treatment area;
  - Broad spreading of material for treatment;
  - Addition of a suitable quantity of fine agricultural lime;
  - Periodic mixing and addition of lime;
  - Capture leachate, monitor pH levels and ensure pH levels are between 6.5 and 8.5 prior to release; and
  - Develop and implement a suitable sampling program to verify that ASS neutralisation treatment has been effective prior to reuse of the material.
- Post treatment and verification, material can be reused as ASS-free material onsite if required.
- Where practicable ensure that insitu material to be reused as fill within the geofabric bags is replaced within the section of the profile from which it was originally excavated (ie if material was excavated from below the water table it should be returned to below the water table within 12 hours of being excavated).

1.4 Proposed Construction Activities

For the purpose of constructing the seawall at Toogoom it is proposed to excavate in the order of 25,000m^3 of insitu material down to a depth of approximately –1m AHD. It is proposed that this material will be utilised during construction as the fill material for the contents of the geofabric bags (terrafix 1200RP). Material will be placed into the geofabric bags and then returned to the insitu location to form the seawall structure.

Seawall construction activities will be staged for the purpose of minimising the duration that the face of each excavated area is exposed. It is likely that construction for each staged section of the seawall will include, but not be limited to the following activities:

- Excavation of insitu material for stockpiling;
- Filling of geofabric bags using the stockpiled material; and
- Placement of filled geofabric bags to form the structure of the seawall.

1.5 Hervey Bay City Council Environmental Commitment

The Hervey Bay City Council is committed to constructing and maintaining a suitably designed seawall adjacent to the Esplanade at Toogoom.

This commitment will be achieved through two key strategies:

1. Environmental awareness training for all employees; and
2. Environmental transparency and adherence to all State and local environmental standards.

Hervey Bay City Council will allocate appropriate resources to support the fulfilment of this policy and to communicate its objectives.

2. Acid Sulphate Soil Management Plan

2.1 Overview

The ASSMP defines the likely ASS issues associated with the proposed development by addressing the following, as they apply to the management of ASS material.

2.1.1 Environmental Site Induction

The Environmental Site Induction for personnel entering or working on the site should incorporate the following information for raising awareness of ASS as a minimum:

- Information to provide a basic understanding of this ASSMP and site specific ASS issues;
- Information on sensitive issues and the need to carry out work activities with as little impact as possible;
- An explanation of environmental reporting protocols, complaint procedures and actions required in the event of an incident involving material excavated below 5m AHD; and
- Information of known environmental hazards relating to ASS management and handling and site emergency preparedness and response plans.

2.1.2 Objectives

The objectives of ASS management on the Toogoom seawall site are to:

- Identify areas of likely disturbance;
- To identify and locate ASS prior to excavation in order to minimise disturbance of these soils, develop adequate management procedures and prevent impacts to the surrounding environment resulting from exposure of ASS to the atmosphere, groundwater and surface runoff; and
- To provide the minimum requirements for the development of a Construction ASSMP to be implemented to address site ASS management during construction.

2.1.3 Performance Criteria

- Implementation of the recommendations of the geotechnical and preliminary ASS investigation;
- No impacts to surface water or groundwater quality resulting from the disturbance, storage, treatment or reuse of insitu material;
- Containment of material stockpile and treatment areas (if required);
- Leachate pH range to be recorded between 6.5 and 8.5 prior to release to site stormwater system;
- Material spills to be cleaned and/or neutralised within 12 hours of occurring;
- Validation sampling for ASS (if required) to be completed at a rate of one sample per 500m^3 for all material excavated onsite prior to placement for reuse, stockpiling and/or removal offsite; and
- Where disturbance occurs, implement appropriate management measures to mitigate potential impacts.

2.1.4 Management Measures and Principles

The proposed development will include the excavation of more than 100m^3 of soil. The Construction Contractor should develop detailed management procedures for specific site works that relate to the appropriate management of ASS material throughout construction.

These specific procedures should incorporate the relevant provisions and recommendations of the geotechnical and preliminary ASS investigation report and be submitted to the Contractor Superintendent for approval prior to commencement of disturbance.

These principles include, but are not limited to:

- The disturbance of material below 5m AHD should be avoided wherever possible;
- Where disturbance of ASS is unavoidable, preferred management strategy hierarchy is:
  - Minimisation of disturbance;
  - Neutralisation;
  - Hydraulic separation of sulphides either on its own or in conjunction with dredging; and
  - Strategic re-burial (reinterment) – least preferred.
- Ensure that all site drainage that is installed is completed in accordance with the relevant design specifications;
- Ensure that ASS treatment and storage areas are constructed prior to the commencement of disturbance at the site as part of the contingency planning for the project and that all drainage control measures associated with these areas are adequately installed;
- Ensure that all leachate and runoff from areas excavated below 5m AHD and ASS treatment and stockpile areas are adequately captured, contained, analysed and treated (if necessary) prior to discharge to the site stormwater system if remaining exposed for more than 12 hours;
- Works will be performed in accordance with best practice environmental management when it has been demonstrated that the potential impacts of works involving ASS are manageable to ensure that the potential short and long term environmental impacts are minimised;
- The material being disturbed and any potentially contaminated waters associated with the proposed disturbance should be considered during the development of a site management plan and/or in complying with the general environmental duty;
- Receiving marine, estuarine, brackish or fresh waters will not be used as a primary means of diluting and/or neutralising ASS (if found) or associated contaminated waters;
- Management of disturbed material is to occur if the ASS action criteria is reached or exceeded as a result of sampling and analysis of material proposed for excavation;
- The release of surface runoff, groundwater and placement of soil and fill material during the proposed operational works must not cause environmental harm consistent with ASS disturbance onsite;
- Identify locations and appropriately prepare (line and bund) areas suitable for the treatment and/or storage of ASS material (if found) during the proposed operational works;
- Install runoff containment mechanisms downstream of disturbed areas at each stage of construction and ASS treatment areas to prevent uncontrolled release of leachate and potentially acidified runoff if excavations are to remain open for more than 12 hours;
- Identify release points and monitoring locations for the release of treated leachate and runoff (if required);
- Develop and implement a leachate release monitoring program for leachate captured from the ASS treatment areas and other disturbed areas of the site (if required);
- Ensure that treated ASS material is verified for the effectiveness of neutralisation prior to reuse as ASS free fill material (if required);
- ASS management (if required) onsite must comply with all relevant permits and approvals for site development and be maintained throughout the duration of the project;

- Stockpiling of untreated ASS (if found) above the permanent groundwater table with (or without) containment is not an acceptable long-term management strategy. For example, soils that are to be stockpiled, disposed of, used as fill, placed as temporary or permanent cover on land or in waterways, sold or exported offsite or used in earth bunds, that exceed the ASS action criteria will be treated/managed;
- Proposed ASS stockpile and treatment areas implemented as part of the contingency measures for construction must be located a minimum distance of 50m from surface watercourses, wetlands/lagoons and tidal areas and designed to ensure that hydraulic isolation of these areas is achieved;
- Stockpile areas for the storage of fine agricultural lime material should be designed and suitably located onsite to ensure that neutralisation of spills and runoff can be implemented immediately after occurrence and/or after rainfall, respectively;
- Sufficient fine agricultural lime material should be stored in appropriately designed, contained and bunded areas at all times throughout the duration of site development; and
- The following issues should be incorporated into specific ASS environmental management work procedures (if required):
  - The sensitivity and environmental values of the receiving environment. This includes the conservation, protected or other relevant status of the downstream receiving environment (eg Marine Park, Coastal Management District and protected wildlife);
  - Whether groundwaters and/or surface waters are likely to be directly or indirectly affected;
  - The heterogeneity, geochemical and textural properties of soils onsite; and
  - The management and planning strategies of Local Government and/or State Government, including Regional or Catchment Management Plans/Strategies and State and Regional Coastal Management Plans.

2.2 Operational Works Activities

The proposed operational works activities that likely to result in the disturbance of potential ASS affected material onsite relate to excavation and filling.

2.2.1 Excavation and Filling

For the purpose of constructing the seawall at Toogoom it is proposed to excavate in the order of 25,000m^3 of insitu material down to a depth of approximately –1m AHD. It is proposed that this material will be utilised during construction as the fill material for the contents of the geofabric bags (terrafix 1200RP). Material will be placed into the geofabric bags and then returned to the insitu location to form the seawall structure.

Seawall construction activities will be staged for the purpose of minimising the duration that the face of each excavated area is exposed. It is likely that construction for each staged section of the seawall will include, but not be limited to the following activities:

- Excavation of insitu material for stockpiling;
- Filling of geofabric bags using the stockpiled material; and
- Placement of filled geofabric bags to form the structure of the seawall.

A number of short term activities, such as the construction of material stockpiling and ASS treatment areas, bunding and leachate/runoff control devices for ASS treatment and storage areas may be required during construction.

Excavated material will be identified for segregation based on whether it was excavated from above or below the water table.

Where voids/excavation faces are required to remain open for more than 12 hours after excavation, daily monitoring of exposed material should be undertaken for field pH and field oxidised pH, by the site environmental officer. These areas should be hydraulically separated from surface drainage pathways through the installation of temporary protective measures for the duration of these works and leachate or runoff entering or generated within the voids/exposed excavations should be contained, monitored for pH and treated (if required) prior to release.

2.2.2 *Stockpiling and Treatment Areas*

Insitu ASS Management (if required)

Depressions formed by the removal of vegetation and/or other underground elements should have all disturbed/weakened soil cleaned out and be backfilled immediately with compacted select material, which is validated as being ASS free material.

In areas where excavations are not immediately backfilled with appropriately selected material, daily monitoring of the exposed material should be undertaken for field pH and field oxidised pH, by the site environmental officer. These areas should be hydraulically separated from surface drainage pathways through the installation of temporary protective measures for the duration of these works and leachate or runoff entering or generated within the voids will be contained, monitored for pH and treated (if required) prior to release. Containment of leachate generated during excavation will be insitu within the void in which they occur.

Leachate/runoff to be treated insitu should be treated with a slurry comprised of dissolved fine aglime. The initial and subsequent rate of treatment for leachate with the lime slurry will be determined based on results of daily pH monitoring of the leachate insitu. Leachate should achieve a stable pH range between 6.5 and 8.5 prior to release into the site stormwater system.

Acid Neutralisation (if required)

It is proposed to utilise excavated material removed during site development as fill material onsite where practicable. It is recommended that strict supervision and control of the activities involving excavation of material be implemented to ensure appropriate segregation and stockpiling (as required), which includes sampling and field screening during excavation. Excavated material should be segregated and stockpiled in designated areas for appropriate management and treatment (if required) in accordance with the following parameters:

- Fine aglime ($CaCO_3$) will be used for the treatment of excavated material at the appropriate rate (if required);
- A lime slurry solution comprised of dissolved fine aglime ($CaCO_3$) will be utilised as a neutralising agent for leachate/runoff to be treated onsite and/or leachate spills at a concentration to be determined based on pH monitoring results of leachate (if required); and
- The aglime product selected for use must be fine grained in order to ensure optimal mixing effectiveness during treatment.

Leachate and runoff from excavation activities, stockpiles and treatment areas should be captured and contained insitu for neutralisation (if required).

Hydrated lime or quicklime slurry solutions are considered to be more effective for the neutralisation of ASS leachate/runoff due to the high reactivity of the solution. However, stringent controls must be implemented during the application of these solutions in order to ensure that overdosing does not occur, which may result in increased pH levels above 8.5, creating an alkalinity problem that requires treatment and management. Therefore it is recommended that leachate/runoff neutralisation insitu be undertaken (if required) utilising a slurry comprised of dissolved fine aglime, as even though the solution is considered less effective for the neutralisation of ASS leachate, it is less likely to result in alkalinity issues, which may impact surface water quality.

Stockpile Areas

Stockpile areas will be located a minimum of 50m from surface waters and tidal areas. Stockpile areas will be designed in order to adequately contain the maximum volume of material to be placed and stored within the structure for the required period of time (up to 32 hours).

Designated stockpile areas will be prepared by placing an impermeable clay liner achieving a minimum thickness of 0.3m to be maintained at all times. Within the bunded area a guard layer of fine aglime will be placed to a thickness of 30mm, which will be reinstated at the end of each stockpiling event (as required).

Segregation and placement of excavated material within the stockpile areas will be determined by the location within the profile that the material was excavated from (ie above or below the water table).

Leachate drains will be incorporated into the design of the bunded stockpile areas for the purpose of capturing and containing leachate and runoff generated within the stockpile areas for treatment insitu for monitoring and neutralisation (if required) prior to release.

Stockpile area bunds and liners will be inspected at the end of each stockpiling event and after rainfall for integrity and liner thickness and will be repaired as required prior to commencement of the next stockpiling event.

Treatment Areas

Treatment of ASS affected material may be required during site works. Therefore it is recommended that a designated ASS treatment area be constructed prior to the commencement of site work as part of the contingency/protection measures to be implemented onsite. Designated ASS treatment areas should be located a minimum of 50m from surface waters and tidal areas. Treatment areas should be designed in order to adequately contain the maximum volume of material to be placed and stored within the structure for the required treatment period.

Designated ASS treatment areas will be prepared by placing an impermeable clay liner achieving a minimum thickness of 0.3m to be maintained at all times. Within the bunded area a guard layer of fine aglime will be placed to a thickness of 30mm, which will be reinstated at the end of each treatment event.

A schematic cross section of an ASS treatment pad design is provided in Figure 1.

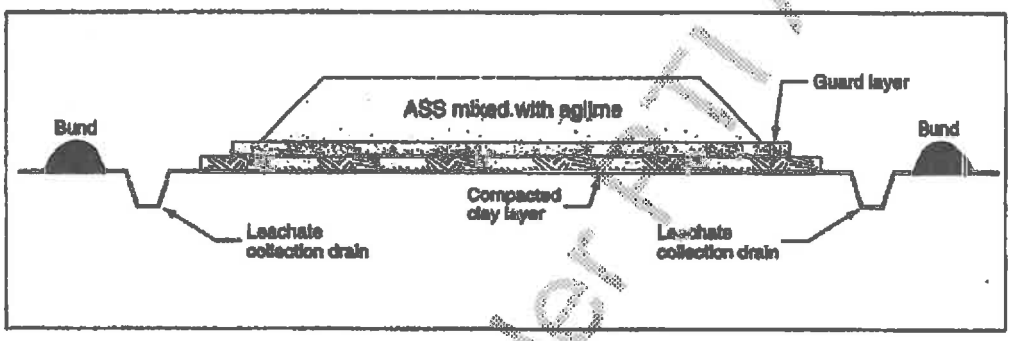

Figure 1: Schematic cross-section of a treatment pad, including a compacted clay layer, guard layer, leachate collection system and containment with bunding.

(Source: Dear *et al* NRM 2002 p.24).

Thorough mixing of aglime with ASS material is essential for effective and efficient treatment. Therefore, it is recommended that treatment for each ASS treatment level is completed through the implementation of the following stages:

- Stockpiling of material to facilitate initial dewatering within the bunded stockpile areas for up to 32 hours;
- Broadspreading and ploughing of material across the bunded and lined ASS treatment pad to a thickness of approximately 300mm for further drying;
- Lime dosing at the nominated rate (may require more than one dosing stage depending on treatment level requirements);
- Validation sampling at a rate of 1 sample per 400m^3 for *Low*, *Medium* and *High* treatment levels and 1 sample per 200m^3 for *Very High* and *Extremely High* treatment levels; and
- Additional lime dosing and validation sampling (if required).

Excavated material may be placed directly within the ASS treatment area, particularly when the material has a relatively low moisture content and has been identified as ASS affected material requiring treatment.

Leachate drains should be incorporated into the design of the bunded treatment areas for the purpose of capturing and containing leachate and runoff generated within the structures during treatment for neutralisation insitu for neutralisation and monitoring prior to release.

ASS treatment area bunds and liners should be inspected at the end of each ASS treatment event and after rainfall for integrity and liner thickness and will be repaired as required prior commencement of the next treatment event.

Leachate Control Devices

Leachate control devices to be implemented during excavation and soil and sediment disturbance should include, but not be limited to the following:

- Protection measures for temporary hydraulic separation for excavations and ASS spill cleanup, such as bunding and containment drains; and
- Bunded drains for ASS stockpiling and treatment areas.

All ASS leachate control devices should be appropriately designed to contain the nominated maximum volume of leachate to be placed within the structures including a freeboard, which will adequately contain the maximum volume of leachate and runoff from a 2 year ARI event.

Where practicable, leachate control devices should have an impermeable liner to ensure that integrity of the structure is maintained at all times, which is routinely inspected and maintained/repaired as required. Leachate control devices should be routinely inspected for holding capacity and sludge and sediment should be removed from the device whenever the holding capacity is reduced by 20% (80% holding capacity remaining). Sludge and sediment (when removed) from the ASS leachate control devices should be incorporated into the ASS treatment process and treated as *Extremely High* unless validation sampling of the material is completed and reduced treatment level requirements are identified.

Monitoring of pH levels at the release points of the leachate control devices should be completed daily during all discharge events.

Decommissioning

Decommissioning of ASS stockpiling, treatment pads and leachate ponds should be completed in a staged manner after the completion of site works. The stages are recommended to include, but not be limited to the following:

- Insitu neutralisation and discharge of residual leachate from leachate drains within the stockpile areas;
- Decommissioning and reinstatement of stockpile areas including neutralisation of bunding materials and underlying soils, if required (treatment requirements to be determined through validation sampling of the residual stockpile area materials);
- Insitu neutralisation and discharge of residual leachate from leachate drains within the treatment areas; and
- Decommissioning and reinstatement of the ASS treatment areas including neutralisation of bunding materials and underlying soils, if required (treatment requirements to be determined through validation sampling of the residual treatment area materials).

2.3 Monitoring and Reporting

2.3.1 Leachate Monitoring

A leachate monitoring program will be developed and implemented, as part of the contingency measures for the site, by the nominated contractor and submitted to the Contractor Superintendent for approval prior to the commencement of site works. The monitoring program should include, but not be limited to the following principles:

- Sampling of leachate treated insitu within excavation voids and from spills to ensure effectiveness of neutralisation is achieved prior to release to the site stormwater system;
- Leachate should be sampled and analysed prior to scheduled discharge events and the leachate quality should comply with acceptable stormwater quality parameters prior to release;
- Leachate monitoring results should be reported to the Contractor Superintendent, as required; and
- An incident reporting procedure should be implemented by the nominated contractor to ensure that leachate spills/discharges are recorded, investigated, remediated (if required) and protective measures implemented to prevent/reduce the risk of recurrence of the incident.

2.3.2 Validation Sampling

The nominated contractor will be responsible for developing and implementing a validation sampling program for treated ASS material prior to reuse onsite. The validation sampling program should also be implemented for fill material imported from offsite that does not have a certificate as being ASS free material provided by the quarry or supply contractor.

Samples for validation will be collected at a rate of 1/500m³. Analysis of validation samples should include as a minimum:

- Field characterisation;
- Field pH_F and pH_{FOX} screening; and
- SPOCAS and/or Chromium Suite analysis for selected samples by a laboratory that is NATA accredited for the analysis.

Validation sampling results should be reported to the Contractor Superintendent by the nominated contractor within the reporting period following the receipt of the laboratory results.

ASS treated material shall be scheduled for removal from the ASS treatment area and identified for reuse and/or stockpiling onsite as ASS free fill by the Contractor Superintendent once the laboratory results for the validation samples have been received and approved. The effectiveness of neutralisation of the treated material should be assessed as satisfactory by the Contractor Superintendent prior to scheduling removal of the material from the designated treatment area.

2.3.3 ASSMP Supervision and Auditing

Table 1 outlines the minimum requirements for the management, monitoring and auditing of ASS material during site works.

Table 1 Acid Sulphate Soil Management Measures

	Actions	Action Timing	Action Performed By	Monitoring and Reporting Compliance		
				Activity	Activity Timing	Activity Performed by
1	Develop a schedule for staging works and minimising areas of disturbance.	PreC	CPM	NA	NA	NA
2	Review the site ASS investigation and implement a procedure for nominated site contractors to develop suitable procedures for specific site works activities.	PreC	CEO	CL	PreC	CS
3	Review the site ASS investigation and mark potential ASS risk areas onsite plans and drawings.	PreC	CEO	VI	PreC	CS
4	Routinely inspect surface waters and stormwater drainage in the vicinity of the site for evidence of impacts resulting from disturbance of ASS (ie fish kill, aquatic/riparian flora mortality and/or iron staining).	PD	CEO	VI and CL	Weekly	CS
5	Minimise disturbance of surface and subsurface soils onsite where practicable.	PD	CPM	VI	WR	CEO
6	Segregate soil and sediment excavated from areas identified as ASS areas for validation and/or treatment.	PD	CPM	VI and CL	WR	CEO
7	Develop and implement a soil field screening procedure for validation sampling of soil and sediment excavated onsite with a minimum sampling rate of one sample per 500m³.	PD	CEO	VI, CL, Sample, Analyse and Report	WR	CS
8	Sample and analyse soil and sediment segregated for validation and/or treatment for ASS.	PD	CEO	Sample, Analyse and Report	WR	CS

CS Contractor Superintendent
CPM Contractor Project Manager
CEO Contractor Environmental Officer
AS All Staff
F&S Foremen and Subcontractors
WR When Required

VI Visual Inspection
PD Project Duration (Construction)
CL Checklist is to be completed
PstC Post Construction
PreC Pre Construction

NA Not Applicable

	Actions	Action Timing	Action Performed By	Monitoring and Reporting Compliance		
				Activity	Activity Timing	Activity Performed by
9	Capture, analyse and treat (if necessary) runoff from the designated ASS treatment areas and record results.	PD	CEO	VI, CL, Sample, Analyse and Report	WR	CS
10	Release runoff from designated ASS treatment areas when pH monitoring results are within 6.5 to 8.5 pH range.	PD	CPM	VI, CL, Sample, Analyse and Report	WR	CEO
11	Record the incidence and location of identified ASS areas in the site hazard log and update the log if ASS are encountered during disturbance activities and mark areas across site and restrict access to these area by both foot and vehicular traffic.	PreC and PD	CEO	VI	WR	CS
12	Provide training for site personnel to ensure that safe handling practices and procedures are implemented for the handling and treatment of ASS.	PD	CPM	CL	Weekly	CEO
13	Retain and update personnel training records relating to safe handling of ASS.	PD	CPM	VI	Weekly	CEO
14	Routinely maintain designated ASS treatment areas with a continuous impermeable clay lining and adequate bunding and sedimentation traps to collect runoff solids and contain runoff.	PD	CPM	VI and CL	Weekly and after rainfall	CEO

CS	Contractor Superintendent
CPM	Contractor Project Manager
CEO	Contractor Environmental Officer
AS	All Staff
F&S	Foremen and Subcontractors
WR	When Required

VI	Visual Inspection
PD	Project Duration (Construction)
CL	Checklist is to be completed
PstC	Post Construction
PreC	Pre Construction

NA Not Applicable

	Actions	Action Timing	Action Performed By	Monitoring and Reporting Compliance: Activity	Activity Timing	Activity Performed by
15	Generate an incident record in the event that an impact is identified in groundwater and adjacent waterways (ie fish kill, aquatic/riparian flora mortality and iron staining).	PD	CEO	VI, CL and keep incident records on file	WR	CS
16	Generate an incident record in the event that a spill of ASS material occurs outside the ASS storage and/or treatment areas and implement spill clean up procedures for cleaning and neutralising the area affected by the spill within 12 hours of the incident.	PD	CEO	VI, CL and keep incident records on file	WR	CS
17	Prevent the uncontrolled release of runoff from ASS treatment areas and soil disturbance areas from entering/impacting adjacent surface waters (including fresh and brackish waters and tidal marine and estuarine waters).	PD	CPM	VI and CL	Weekly and after rainfall	CEO
18	Develop and implement specific ASS management practices and procedures, which incorporate the following principles, where appropriate: • Minimisation of disturbance; • Neutralisation; • Hydraulic separation; and • Strategic reburial.	Prior to Site Preparation	CS	VI and CL	Weekly	CEO
19	Refill excavated voids that are no longer required for site works as soon as practicable after excavation or with 12 hours after excavation.	PD	CPM	VI and CL	WR	CEO
20	Prevent public access to excavation, stockpile and ASS treatment areas.	PD	CPM	VI	Daily	CEO

CS Contractor Superintendent
CPM Contractor Project Manager
CEO Contractor Environmental Officer
AS All Staff
F&S Foremen and Subcontractors
WR When Required

VI Visual Inspection
PD Project Duration (Construction)
CL Checklist is to be completed
PstC Post Construction
PreC Pre Construction

NA Not Applicable

	Actions	Action Timing	Action Performed By	Monitoring and Reporting Compliance		
				Activity	Activity Timing	Activity Performed by
21	Ensure all personnel involved in identifying and handling ASS are appropriately trained and possess/use appropriate PPE as required.	PD	CPM	VI	WR	CEO
22	Visually monitor soil and sediment excavated from site for signs of the presence of ASS.	PD	CEO	VI	WR	CS
23	Generate an incident record in the event that personal injury and/or plant and equipment damage occurs as a result of disturbing ASS.	PD	AS	Incident Record Form	WR	CEO
24	Install a plant and equipment wash down bay for each stage of site works, which is lined and bunded to sufficiently contain runoff for analysis and treatment (if necessary).	PreC	CPM	VI and CL	Weekly	CEO
25	Wash down all plant and equipment involved in excavation of soil and sediment from site and capture, monitor and treat (if necessary) and wash down runoff and solids.	PD	AS	VI and CL	Daily	CEO
26	Collect solids captured in sediment traps from equipment wash down and ASS treatment areas and treat as high risk ASS material, complete field screening and sample analysis in line with site ASS validation procedure.	PD	CEO	Sample, Analyse and Report	WR	CS
27	Restrict the number of plant and equipment utilised for handling soil and sediment excavated from site and identify in a plant and equipment log.	PD	CPM	VI and check Log	WR	CEO
28	Routinely inspect and maintain plant and equipment used for handling surface and subsurface soil excavated onsite in safe operational condition.	PD	CPM	VI and CL	Weekly	CEO

CS	Contractor Superintendent	VI	Visual Inspection	NA	Not Applicable
CPM	Contractor Project Manager	PD	Project Duration (Construction)		
CEO	Contractor Environmental Officer	CL	Checklist is to be completed		
AS	All Staff	PstC	Post Construction		
F&S	Foremen and Subcontractors	PreC	Pre Construction		
WR	When Required				

	Actions	Action Timing	Action Performed By	Monitoring and Reporting Compliance		
				Activity	Activity Timing	Activity Performed by
29	Routinely check stockpile and treatment areas for adequate containment integrity and captured runoff during active periods.	PD	CEO	VI and CL	Daily while active	CS
30	Routinely inspect drainage control measures associated with ASS management and maintain/repair as required during active periods	PD	CEO	VI and CL	Daily while active	CS
31	Routinely inspect areas of known ASS disturbance for indications of acid leachate generation from commencement of site works until reinstatement of the area.	PD	CEO	VI and CL	Daily while active	CS

CS Contractor Superintendent
CPM Contractor Project Manager
CEO Contractor Environmental Officer
AS All Staff
F&S Foremen and Subcontractors
WR When Required

VI Visual Inspection
PD Project Duration (Construction)
CL Checklist is to be completed
PstC Post Construction
PreC Pre Construction

NA Not Applicable

2.4 Contingency and Corrective Actions

During site works the nominated contractor will be responsible for ensuring that sufficient fine aglime is stockpiled onsite at all times (minimum 100kg) for the purpose of neutralisation of spills and/or leachate that may occur.

In the event of an incident relating to the release of acid leachate, runoff or sediment occurring in the area must be identified and hydraulically isolated using suitable control measures. The runoff/sediment is to be treated with an adequate quantity of fine agricultural lime and samples analysed for pH prior to release.

All nonconformances will be corrected as soon as practicable, reported and strategies will be implemented to reduce the likelihood of the incident recurring.

3. *Limitations*

The preliminary ASS investigation was not completed utilising the recommended borehole density for the total site area as outlined in the *Guidelines for Sampling and Analysis of Lowland Acid Sulphate Soils (ASS) in Queensland 1998* (Ahern, et al DNR 1998).

Soil and rock formations are often variable, resulting in heterogeneous distribution of analytes and soil characteristics across a site. Concentrations and analyte levels may be estimated at chosen sample locations, however conditions between sample sites can only be inferred on a basis of geological and hydrological conditions and the nature and the extent of identified subsurface characteristics. Boundaries between zones of variable subsurface characteristics are often indistinct and therefore interpretation is based on available information and the application of professional judgement. The accuracy with which subsurface conditions are characterised depends on the frequency and methods of sampling and the uniformity of subsurface conditions and is therefore limited by the scope of the works undertaken.

The full chemical content and environmental status of the insitu material was outside the scope of the geotechnical investigation and contamination (if any) should be assessed separately.

We note that this report has been prepared for the use of the client (Hervey Bay City Council) and is based on information provided by them. Connell Wagner takes no responsibility and disclaims all liability whatsoever for any loss or damage that Hervey Bay City Council may suffer as a result of using or relying on any such information or recommendations contained in this report, except to the extent that Connell Wagner expressly indicates in this report that it has verified the information to its satisfaction. This ASSMP and the geotechnical investigation report do not provide a complete assessment of the environmental status of the site and it is limited to the scope defined therein. Should further information become available regarding the conditions at the site, including previously unknown likely sources of contamination, Connell Wagner reserves the right to review the report in the context of the additional information.

4. *References*

Ahern, C.R., et al (1998) *Guidelines for Sampling and Analysis of Lowland Acid Sulphate Soils (ASS) in Queensland 1998* NR&M Brisbane.

Connell Wagner (February 2005) *Geotechnical Investigation Toogoom Seawall Hervey Bay* for Hervey Bay City Council, Hervey Bay.

Dear, S.E., et al (2002) *Queensland Acid Sulphate Soil Technical Manual Soil Management Guidelines* (Version 3.8) NR&M Brisbane.

Queensland Government (2004) *Acid Sulphate Soils Laboratory Methods Guidelines* (Version 2.1) NR&M Brisbane.

Queensland Government (2002) *State Planning Policy 2/02 Planning and Managing Development Involving Acid Sulphate Soils* Department of Local Government and Planning Brisbane.

Queensland Government (2002) *State Planning Policy Guideline Acid Sulphate Soils* Department of Local Government and Planning Brisbane.

Lanson Civil Pty Ltd

PROJECT MANAGEMENT PLAN

KINGFISHER PARADE TOOGOOM SEAWALL
#CORP 01-13/14

•26 Navelina Court Dundowran
• PO Box 816 Hervey Bay • Queensland 4655 • Australia
Phone 61 7 4194 2100 • Fax 61 7 4194 2122
Email admin@lansoncivil.com.au

TABLE OF CONTENTS

PRE-COMMENCEMENT CHECKLISTS

YES – A tick in this box indicates that the activity has been considered and is addressed.

TBD – (TO BE DONE) A tick in this box indicates that the activity has not been considered and must be addressed prior to commencement or prior to that activity starting.

N/A – A tick in this box indicates that the activity does not apply to this project.

Current Status of Pre start or Start Up Activities	Yes	TBD	N/A
Principal Contractor identified and Health and Safety Co-ordination Plan (HSCP) prepared (if applicable).	✓		
Superintendent notified 24 Hr's prior to starting in new locations.		✓	
Project Management Plan (including SWMS/JSA) and HSCP (where relevant) submitted and approved by the Superintendent		✓	
Notice of Intention to Commence Trenches deeper than 1.5 meters sent to Regulatory Authority.			✓
Municipal Council notified of start and any inconvenience to the Public.	✓		
Road Opening Burning Blasting and Other Permits obtained.(list permits).			✓
Underground services located. Authorities notified regarding work near their services. Further notification during progress work is required.	✓		
Overhead obstacles identified. Authorities notified regarding work near their services. Further notification during progress work is required.			✓
Notices regarding Noise Management Plan and work times handed to private land owners.		✓	
Signage prepared to satisfy HSCP and Noise Management Plan. (See also 7.3 below)		✓	
Planned Compound or Amenities are Suitable for Type and Location of Work.	✓		
Confirm with client that we have latest plans & will get amendments. Specifications, PMP, ITP's, Checklists & Standard Details Drwg's, are available.	✓		
Suppliers and Subcontractors have clear understanding of materials and duties.	✓		
Exist trees and Vegetation protected or permission given to remove if necessary.	✓		
H & S and Environmental Hazards Identified: Silt traps arranged, Noise Management Plan prepared, Safe Work Method Statements prepared, Dust and Vibration controls planned etc and are known to employees and sub-contractors. (See also 7.3 below).	✓		
Traffic management needs and warning signs arranged and Available.	✓		
Toolbox Meetings will be held each _1_ Month	✓		

Induction or Training During Project	Yes	TBD	N/A
All employees who will perform construction work are registered to do so (for example, "relevant industry induction card" training)	✓		
Induction and Training systems in place covering Work Method, Health & Safety or Environment Issues for all New Employees and New tasks	✓		
Consultation with staff about health and safety to occur. Where there is one, the Health and Safety Representative (HSR) will be provided in advance all information that will be provided to employees.	✓		
Client requires employees of Lanson Civil to have H&S and or Environmental Induction with regards to the clients system site or buildings			✓
Site Induction is planned and will take place at the first Toolbox Meeting. All employees and Subcontractors will be Included in all Site Induction and new Training	✓		
All employees informed of the site safety rules in accordance with HSCP	✓		
Training Instruction or Supervision in Handling of Materials or Dangerous Goods involved in the work is required.			✓
Training in Emergency Response for Environmental Incident EI-09 at least twice a year		✓	
Training in Emergency / Accident Procedure SP-1-1 at least twice a year		✓	
Details of other training on this project			✓
Up to date register of employee names, positions and evidence of qualifications (for example, red cards, competency certificates, licences, etc)	✓		
Planning for Emergencies Accident or Major Incident requirements	**Yes**	**TBD**	**N/A**
First aid officer on site .	✓		
Health and Safety co-ordination plan including, if applicable, environmental emergency and evacuation procedures, will be provided to any person doing construction work at the workplace and made available for inspection.	✓		
A Mobile Phone and all Emergency Numbers are Available and displayed on site. Best Location to make a call has been identified.	✓		
The name and contact number of the principal contractor is placed on a sign clearly visible from outside the workplace	✓		
There is Adequate Provision for First Aid on Site.	✓		
The Employer or Client of Lanson Civil will be notified immediately of any Incident or Injury during the Job.	✓		
Injuries and Incidents will be Recorded in Accident Report/Investigation Book	✓		
Defect Suggestion Report Forms and Safe Work Method Statement Forms will be used to report and correct or control all non conformances and identified Hazards and a copy of completed forms will be retained for the duration of the project	✓		

Do we need extra straw bales, absorbent material or other materials as a resource against an Environmental Incident		✓	.
Is leaving the site safe at night a hazard? If so how can we control this hazard.			✓
Other Issues			✓
Requirements for Restricting Entry to the Works Area to Protect Workers, Members of the Public and to Prevent Unauthorised Entry	**Yes**	**TBD**	**N/A**
"No Entry" or other Warning Signs will be Placed at the Entrance to Site	✓		
Barricades will be used where necessary (open trenches and excavations)	✓		
Traffic Management Controls are Planned and Available (signs, flashing lights etc)	✓		
Warning devices (reversing beepers & flashing lights are on all mobile equipment)	✓		
Public Access Ways will be Controlled (close footpath and divert pedestrians)	✓		
Traffic Control Stop Go with Trained Control Person is Required		✓	
Foreman is aware of Aust. Standards Field Guides SAA HB81.1 to 6 Signs and Traffic Control	✓		
Personal Protective Equipment	**Yes**	**TBD**	**N/A**
Reflective Safety Vests shall be worn at all times.	✓		
Sun Hats & Clothes to protect from ultra violet light are provided or requested.	✓		
Safety Footwear shall be worn at all times and is provided.	✓		
Ear Muffs/ or Plugs, Safety Glasses, Face Masks and Gloves are provided and available from Foreman	✓		
Sun Screen and Barrier Cream is readily available on site and recommended	✓		
Hard Hats (Helmets) shall be worn. Indicate when to wear	✓		
Hazardous Materials and Dangerous Goods Register	**Yes**	**TBD**	**N/A**
A Material Safety Data Sheet MSDS and register shall be available for all dangerous goods used on site.	✓		
Where new dangerous goods are used, they shall be listed as a Hazard in the Job Safety Analysis of this Project Management Plan, and assessed in accordance with the Hazard and Risk Analysis Safety Procedure.	✓		

7.8 SUSTAINABILITY ASSESSMENT CHECKLIST (Form 17:02)

7.8.1. Tender/Bidding

	Yes	No	N/A
We have reviewed our Sustainability Policy in light of the scope of works	☑	☐	☐

7.8.2. Project Planning – Focus on Elimination as a priority

Recycled products usage identified	☑	☐	☐
Waste minimisation plan prepared	☑	☐	☐
Arrangements of material separation and collection	☑	☐	☐
Any special site requirements addressed	☑	☐	☐

7.8.3. Preconstruction

Designed for operational waste minimisation	☑	☐	☐
Buy environmentally improved and recycled content products	☑	☐	☐
Specify exact requirements to suppliers	☑	☐	☐

7.8.4. On Site Activities

Materials stored to avoid degradation or damage	☑	☐	☐
Minimisation of incoming packaging materials	☑	☐	☐
Separation and recycling of materials including packaging	☑	☐	☐
Litter management principles implemented on site	☑	☐	☐
Plan for safe disposal of unavoidable waste	☑	☐	☐
Litter management for materials in transit	☑	☐	☐

7.8.5. Toolbox Meetings

5.1	Procurement and purchasing policies that encourages the use of recyclable or recycled materials	☑	☐	☐
5.2	Promotion of sustainability practices with the workforce and subcontractors	☑	☐	☐
5.3	Promotion of waste minimisation achievements	☑	☐	☐

RESOURCE SUSTAINABILITY RECORD (FORM 17:03)

Materials/Products Purchased						
Type of materials or product purchased	Estimated Quantity (m^3)	(Tonnes)	Product Sustainability Level (see table below)	Product value ($)	Cost Savings ($)	Sign Off
Bricks and pavers						
Mulched Vegetation						
Concrete products			4			
Pavement material (hill gravel)			4			
Bituminous materials (asphalt)			4			
Steel Products			4			
Timber products						
Plastic products			2			
Soil/Clay reused on site			1			
Rock excavated and reused on site			1			
Other						

Reported To Superintendent ..... Date / / 10

Entered into Project Sustainability Register: Date / / 10

SUSTAINABILITY ASSESSMENT CHART

Sustainability Level	Criteria
Level 1:	Manufactured fully from recycled materials.
Level 2:	Manufactured >50% from recycled materials.
Level 3:	Manufactured <50% from recycled materials.
Level 4:	Manufactured completely from new materials.

PROJECT MANAGEMENT PLAN
LANSON
A NEW DIRECTION

WASTE MINIMISATION PLAN – (Form 17:04)

Materials On Site			Re-use and Recycling				
Type of Waste Materials to be Generated	Estimated Quantity (M3)	(Tonnes)	On-Site – Specify Proposed Re-use or On-Site Recycling Method	Off-Site – Specify Contractor and Recycling Outlet	Completion (Date)	Cost Savings ($)	Sign Off
Soil / Topsoil			Re-spread				
Rock			Re-spread				
Bricks and Pavers							
Vegetation Green Waste							
Concrete Products							
Pavement Material (Hill Gravel)			Use as Lot Fill				
Bituminous Materials (Asphalt)			Use in Pavements				
Street Sweepings			Spread to Lots				
Timber Products							
General Waste			Refuse Tipped				
Loose Litter			Refuse Tipped				
Other							

Reported To Superintendent..... Date / /10

Entered into Sustainability Register.....Date / /10

1. Project Brief

The project will entail:

- Tree Clearing
- Traffic Control
- Erosion and Sediment Control
- Evacuation and Backfills
- Timber Staircase and Railing
-

2. Project Executive Summary

PROJECT:	KINGFISHER PARADE TOOGOOM SEAWALL
PROJECT SUPERINTENDENT	FRASER COAST REGIONAL COUNCIL PO BOX 1943 HERVEY BAY QLD 4655 Phone: 1300 794 929 Fax: 07 4197 4455
PRINCIPAL CONTRACTOR DETAILS	Lanson Civil Pty Ltd, 26 Navelina Court, Dundowran, Qld 4655 ABN 77 113 016 943 Head Office Phone: 07 4194 2100 Head Office Fax: 07 4194 2122
PROJECT CONSTRUCTION BUDGET	$ 1,082,284.00 Not including GST
PROJECT COMMENCEMENT DATE	TBA
ESTIMATED PROJECT DURATION / COMPLETION DATE	Approx. 12 Weeks
TYPE OF CONSTRUCTION WORK	Civil Works
WORKPLACE SAFETY COMMITTEE	Yes / (No)

3. Project Personnel

Position	Responsibilities	Persons Name	Qualifications
Managing Director	Project Resources & Administration Personnel	Mr Owen Abel	Bachelor of Civil Engineering 17 Years Industry Experience
Site Supervisor	Manage & co-ordinate all activities on site	Mr Craig Gibbons	Certificate IV in Civil Construction Supervision
Project Manager	WHS and Traffic H&S&E	Mr Rob Wylucki	Extensive Traffic Management experience and WH&S Training
WH & S Officer			

4. Subcontractors Suppliers & External Testing Companies

Subcontractor	✓ If Using	Use or Type	Contact Name	Phone
QMulching Pty Ltd	✓	Clearing & Grubbing	Neil Horne	4124 8950
Roy McGrath		Fauna & Flora Management	Roy	4128 0262
Pacific Coast Survey	✓	Surveyor	Ashley Bateman	4124 8188
Coast & Country CCTV		CCTV Sewer & Stormwater	Brett Bone	0438 115 292
KJ's Concrete Sawing & Drilling		Concrete Cutting	Kerry Jensen	4121 6235
Russell Stevens		Blocklaying	Russell	4194 5427
Errol Pearson	✓	Plant Hire		0418796742
Complete Pipeline Service		CCTV Sewer Stormwater	Gavin - Tanya	0402330271
Fraser Coast Concrete Sawing		Concrete cutting	Jacko	0427287552
Priority Traffic	✓	Traffic Control	Buddy	0408247006
Hervey Bay Traffic		Traffic Control		4124 8777
Michael Jolly Surveys		Surveyor		3368 1666

Material Supplier	✓ If Using	Use or Type	Contact Name	Phone
Cemex		Gravels	Darryl	4152 5233
Humes		RCP Pipes	Robert Sewell	4151 5624
Vinidex		PVC Pipes	Eamon Molloy	3277 2822
Bay Turf		Turf	Peter Newton	4124 4207
CM Concrete Products		Keysin	Mark Chard	
Tellam Concrete Products		Grates & Frames		5493 3044
Reece		Plumbing	Warwick	54717055
Artcraft		Signs		3248 4848
Hervey Bay Quarries		Gravels	Russ Bulmer	4128 7333
Byrne Bros Hervey Bay		Gravels	Ian Mills	0427 722 497
Byrne Bros Maryborough		Gravels		4121 2461
Boral Quarries Bundaberg		Gravels		4155 3416
Boral Quarries Hervey Bay	✓	Gravels	Michael	4128 7140
Maryborough Quarries		Gravels	Max / Bob	41296 215
Paverock Quarries		Gravels		4126 8233
Tyco		Ductile Pipes	Martin	5589 4410
Iplex		Piping		3881 9222
Byrne Bros		Concrete		4128 1155
Boral Asphalt		Asphalt	Chris	4153 1071
Write on Signs		Signs	Linda	4124 2989

External Testing Company	✓ If Using	Nata	Test	Frequency	Phone
Wide Bay Geotechnical	✓		Earthworks Supervision / Testing		4124 3677
Cardno Bowler			Earthworks Supervision / Testing		4152 8666
Qualtest Laboratory Pty Ltd			Earthworks Supervision / Testing		3875 1898

5. Project Insurances and Guarantees

Certificate of Currency

WorkCover QUEENSLAND

1. Statement of coverage

The Accident Insurance Policy covers the full amount of the employer's liability under the *Workers' Compensation and Rehabilitation Act 2003*.

This certificate is valid from: 01 July 2013 to 30 June 2014

The information provided in this Certificate of Currency is correct as at: 01 July 2013

2. Employer's information

Policy number

WFA050303818

Employer name

Lanson Civil Pty Ltd

Trading name

Lanson Civil

ABN

77113016943

ACN / ARBN

113016943

3. Important information

Your workers' compensation insurance policy is current to 30 June 2014 and liability will be met, providing you lodge your wages information with WorkCover Queensland by 31 August 2013 and pay your premium by the due date.

A worker can make a claim for a workplace injury, no matter who or what caused it. This policy covers you as an employer for the cost of your workers' injuries.

Lloyd's Certificate of Insurance

SRS UNDERWRITING AGENCY

effected through
SRS Underwriting Agency Pty Ltd
ABN 89 113 929 516 AFSL 290518
(hereinafter called the Coverholder)

THIS IS TO CERTIFY that in accordance with the authorisation granted under the Contract Number noted below, to the undersigned by certain Underwriters at Lloyd's, whose definitive numbers and the proportions underwritten by them, which will be supplied on application, can be ascertained by reference to the said Contract, and in consideration of the premium specified herein, the said Underwriters are hereby bound, severally and not jointly, each for his own part and not one for another, their Executors and Administrators, to insure in accordance with the terms and conditions contained herein or endorsed hereon.

SCHEDULE

Class of Risk:	Construction Material Damage Annual
Policy Number:	CONM 13 0000572
Insured	Lanson Civil Pty Ltd; Including contractors and sub-contractors
Insured's Address:	C/- Ausure Insurance Brokers PO Box 366 HERVEY BAY QLD 4655
Construction Contract:	Projects commenced during the Period of Insurance for Civil engineering contracts primarily but not limited to pipelaying and drainage works. Maximum Construction Period: 12 months Maximum Contract Value: $2,500,000
Contract Site:	Queensland
Period of Insurance:	*From:* 30/03/2013 at 4.00pm *To:* 30/03/2014 at 4.00pm Testing Period: 2 weeks per project Maintenance Period: 12 months per project

Lloyd's Certificate of Insurance

SRS UNDERWRITING AGENCY

Sum Insured:

Material Damage		
Contract Value:	$2,500,000	(LaoIE)
Principal Supplied Materials and Items	Included	(LaoIE)
Escalation	Not Included	(LaoIE)
Total Contract Works Sum Insured	**$2,500,000**	(LaoIE)
Transit (within Contract Value)	$50,000	(LaoIE)
Pre-Existing Property	Not Included	(LaoIE)
Mobile Plant	Not Included	(LaoIE)
Huts and Tools	$50,000	(LaoIE)
Removal of Debris	$200,000	(LaoIE)
Professional Fees	$50,000	(LaoIE)
Expediting Expenses	$50,000	(LaoIE)
Mitigation Expenses	$50,000	(LaoIE)
Total Sum Insured	**$2,900,000**	(LaoIE) (LaoCC)

Limit any one Indemnifiable Event (LaoIE), Limit any one Construction Contract (LaoCC)

Estimated Turnover: $16,000,000

Adjustable at
0.285% on Actual Turnover
Subject to Minimum Premium of $5,000 plus statutory charges

Excess:

Contracts under $500,000	
Major Perils *	$2,500
Minor Perils	$1,000
Transit	$1,000
Huts and Tools	$1,000
Contracts between $500,000 to $1,000,000	
Major Perils *	$5,000
Minor Perils	$1,000
Transit	$1,000
Huts and Tools	$1,000
Contracts over $1,000,000	
Major Perils *	$10,000
Minor Perils	$1,000
Transit	$1,000
Huts and Tools	$1,000

* *Major Perils are earthquake, storm, flood, water, snow, ice, frost, landslip, erosion, subsidence or collapse.*

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SRS UNDERWRITING AGENCY

Policy Wording: As Expiring - SRS Construction Material Damage Annual Policy Wording (0211) with the following endorsements:

1. **CW0506 - Cap and Close Warranty**

   The following Exclusion is added to this Policy:

   We will not indemnify You against:

   1. the cost of rectification of subsidence of completed backfill regardless of the cause of subsidence

   2. clearing and cleaning of pipes, the ends of which have not been sealed by the end of each working day to prevent penetration by water and/or detritus.

   3. displacement of pipes or ducts by water unless such pipes or ducts have been secured by the end of each working day by backfilling placed in a manner intended to counteract pipe buoyancy.

2. **CW0550 - Biological or Chemical Materials Exclusion**

   It is agreed that this insurance excludes loss, damage, cost or expense of whatsoever nature directly or indirectly caused by, resulting from or in connection with the actual or threatened malicious use of pathogenic or poisonous biological or chemical materials regardless of any other cause or event contributing concurrently or in any other sequence thereto.

3. **CW0551 - Asbestos and Toxic Mould Exclusion**

   This Policy does not cover liability directly or indirectly out of or resulting from or in consequence of, or in any way involving:

   (a) asbestos, or any materials containing asbestos in whatever form or quantity; or

   (b) the actual, potential, alleged or threatened formation, growth, presence, release or dispersal of any fungi, moulds, spores or mycotoxins of any kind; or

   (c) any action taken by any party in response to the actual, potential, alleged or threatened formation, growth, presence, release, or dispersal of fungi, moulds, spores or mycotoxins of any kind, such action to include investigating, testing for, detection of, monitoring of, treating, remediating or removing such fungi, moulds, spores or mycotoxins; or

Lloyd's Certificate of Insurance

(d) any government or regulatory order, requirement, directive, mandate or decree that any party take action in response to the actual, potential, alleged or threatened formation, growth, presence, release, or dispersal of fungi, moulds, spores or mycotoxins of any kind, such action to include investigating, testing for, detection of, monitoring of, treating, remediating or removing such fungi, moulds, spores or mycotoxins.

Security:	Percentage of Risk (%)	Insurer	Lead Insurer
	100	Certain Underwriters at Lloyd's of London under Contract No: B1262BW0020113 Proportion of Limit: $2,900,000	Yes

Complaints

This Certificate is Insurance Council of Australia's General Insurance Code of Practice compliant, apart from any claims adjusted outside Australia. Underwriters at Lloyd's proudly support the General Insurance Code of Practice. The purpose of the Code is to raise standards of practice and service in the general insurance industry. Any enquiry or complaint relating to this Insurance should be referred to the Coverholder shown above in the first instance. If this does not resolve the matter or you are not satisfied with the way a complaint has been dealt with, you should write to:

Lloyd's Underwriters' General Representative in Australia
Suite 2, Level 21, Angel Place
123 Pitt Street
Sydney NSW 2000
Telephone Number: (02) 9223 1433
Facsimile Number: (02) 9223 1466

who will refer your dispute to Policyholder & Market Assistance at Lloyd's. Complaints that cannot be resolved by Policyholder & Market Assistance may be referred to the Financial Ombudsman Service (UK). Further details will be provided at the appropriate stage of the complaints process.

Dispute Resolution

In the event that a dispute arises between Underwriters and the Insured out of or otherwise in relation to this agreement, then:

(a) Any party to the dispute shall, without prejudice to any other right or entitlement they may have, given written notice to the other party (the "Dispute Notice") requiring them within 7 days of this notice to negotiate (whether in a face to face meeting or by teleconference) in good faith as to how the dispute can be resolved;

(b) If a dispute is not resolved within 10 days of the Dispute Notice, either party can request the other party within a further 10 days to agree on either:

1. a process for resolving the dispute through means other than litigation or arbitration, such as further negotiation, mediation or any other alternative dispute resolution technique. The rules governing any such technique shall be agreed as between the parties and where no such agreement as to the process and/or guidelines is reached within 10 days, then it shall be by mediation by a mediator selected by the Chairperson

Lloyd's Certificate of Insurance

SRS
UNDERWRITING AGENCY

In the event of a claim arising under this insurance, IMMEDIATE NOTICE should be given to
SRS Underwriting Agency Pty Ltd
GPO Box 541
Brisbane QLD 4001

Several Liability Notice
The subscribing insurers' obligations under contracts of insurance to which they subscribe are several and not joint and are limited solely to the extent of their individual subscriptions. The subscribing insurers are not responsible for the subscription of any co-subscribing insurer who for any reason does not satisfy all or part of its obligations.

IN WITNESS THEREOF this Certificate has been signed

at .... BRISBANE ....

this .... 29th .... day of .... MAR. 13. ....

Signature:...(Coverholder)

Seal: SRS Underwriting Agency Pty Ltd ABN 69 929 616 ... AFSL 2390... Insurance Arranged at Lloyd's &/or Boys

• Service
• Knowledge
• Protection

9 May 2013

Certificate of Currency

Attention: Tracy Company: SunQ Insurance

You are hereby held covered subject to the Company's standard policies in respect of the risks and amounts specified below and for the period stated.

Period:	30/03/2013	To	4pm on the 30/03/2014
Policy Type:	Driveline Commercial/Fleet Insurance OR Driveline Transport Package		
Insured:	Lanson Civil Pty Ltd		
Policy Number:	CPG20003326		
Vehicle:	As per the Brokers Schedule		
Sum Insured:	As per the Brokers Schedule		
Endorsements:	Unspecified Vehicle / Plant on Loan or Hire (Wording Attached)		
Interested Party:	Nil		

Sum(s) Insured:

Part A – Loss or Damage to Your Vehicle
Market Value or Sum Insured whichever is the lesser.

Part B – Third Party Liability
$30 Million including Supplementary Bodily Injury
(excluding vehicles registered in the Northern Territory)
but limited to $1,000,000 for Dangerous Goods.

Signed: Erin Jamieson Underwriter

Underwritten by Allianz Australia Insurance Limited (ABN 15 000 122 850 AFS Licence No 234708)

Certificate of Currency issued subject to payment of premium.

Global Transport & Automotive Insurance Solutions Pty Ltd
ABN 93 069 048 255 AFS Licence No 240714
Level 11, MLC Centre, 15 Adelaide Street
Brisbane, QLD 4000
GPO Box 12035, George Street Post Office Brisbane, QLD 4003
Phone: (07) 3210 0666 Fax: (07) 3210 1530

Lloyd's Certificate of Insurance

effected through
SRS Underwriting Agency Pty Ltd
ABN 89 113 929 516 AFSL 290518
(hereinafter called the Coverholder)

THIS IS TO CERTIFY that in accordance with the authorisation granted under the Contract No. noted below, to the undersigned by certain Underwriters at Lloyd's, whose definitive numbers and the proportions underwritten by them, which will be supplied on application, can be ascertained by reference to the said Contract, and in consideration of the premium specified herein, the said Underwriters are hereby bound, severally and not jointly, each for his own part and not one for another, their Executors and Administrators, to insure in accordance with the terms and conditions contained herein or endorsed hereon.

SCHEDULE

Contract No:	B1262BW0020013
Certificate No:	CONL 13 0000044
Insured:	Lanson Civil Pty Ltd
Address of the Insured:	C/- Ausure Insurance Brokers PO Box 366 HERVEY BAY QLD 4655
Class of Risk:	Public and Products Liability - Claims Occurring
Period of Insurance:	From: 30/03/2013 at 4pm To: 30/03/2014 at 4pm

This Certificate is Insurance Council of Australia's General Insurance Code of Practice compliant, apart from any claims adjusted outside Australia. Underwriters at Lloyd's proudly support the General Insurance Code of Practice. The purpose of the Code is to raise standards of practice and service in the general insurance industry. Any enquiry or complaint relating to this Insurance should be referred to the Coverholder shown above in the first instance. If this does not resolve the matter or you are not satisfied with the way a complaint has been dealt with, you should write to:

Lloyd's Underwriters' General Representative in Australia
Suite 2, Level 21, Angel Place
123 Pitt Street
Sydney NSW 2000
Telephone Number: (02) 9223 1433
Facsimile Number: (02) 9223 1466

who will refer your dispute to Policyholder & Market Assistance at Lloyd's.

Complaints that cannot be resolved by Policyholder & Market Assistance may be referred to the Financial Ombudsman Service (UK). Further details will be provided at the appropriate stage of the complaints process.

POLICY SCHEDULE

Date:	15 March 2013
Class:	Public and Products Liability - Claims Occurring
Policy Number:	CONL 13 0000044
Insured:	Lanson Civil Pty Ltd and/or subsidiary companies for their respective rights and interests
Business:	Civil engineering contractors and property owners and all other activities incidental thereto
Period of Insurance:	From: 30/03/2013 at 4:00 pm To: 30/03/2014 at 4:00 pm
Limit of Indemnity:	$20,000,000 any one Occurrence and in the aggregate any one Period of Insurance in respect to Products Liability *Sub-Limits* Care, Custody or Control Extension $100,000
Excess:	$5,000 any one Occurrence for all claims *And* / *For* $25,000 Injury to contractors, subcontractors or labour hire personnel $25,000 Vibration, removal and/or weakening of support All Excesses are Costs inclusive unless shown otherwise.
Premium:	As Agreed
Scheduled Contracts:	Nil
Security:	*Limit* / *Proportion %* / *Underwriter* $20,000,000 / 100% / Certain Underwriters at Lloyd's of London under Contract Number: B1262BW0020013
Policy Wording:	SRS Public and Products Liability (Claims Occurring) Policy (v01.11) with the following endorsements: 1. C11.01 - Care, Custody or Control Extension $100,000 any one Occurrence 2. C11.07 - Contractors and Subcontractors Exclusion 3. P11.09 - Professional Indemnity Exclusion (Total) 4. U11.02 - Underground Services Damage Exclusion 5. W11.03 - Welding / Hotwork Clause 6. Manuscript - Waiver of Subrogation

SRS Underwriting Agency Pty Ltd
Insurance Arranged at Lloyds

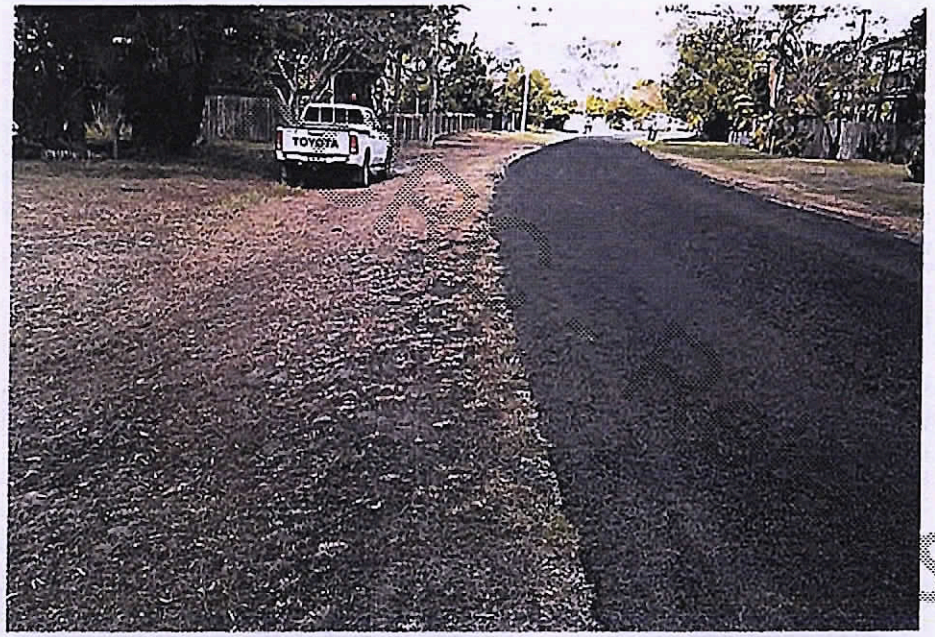
POLICY SCHEDULE

This Schedule and Endorsements, the Certificate of Insurance and Policy Wording shall be read together as one Contract.

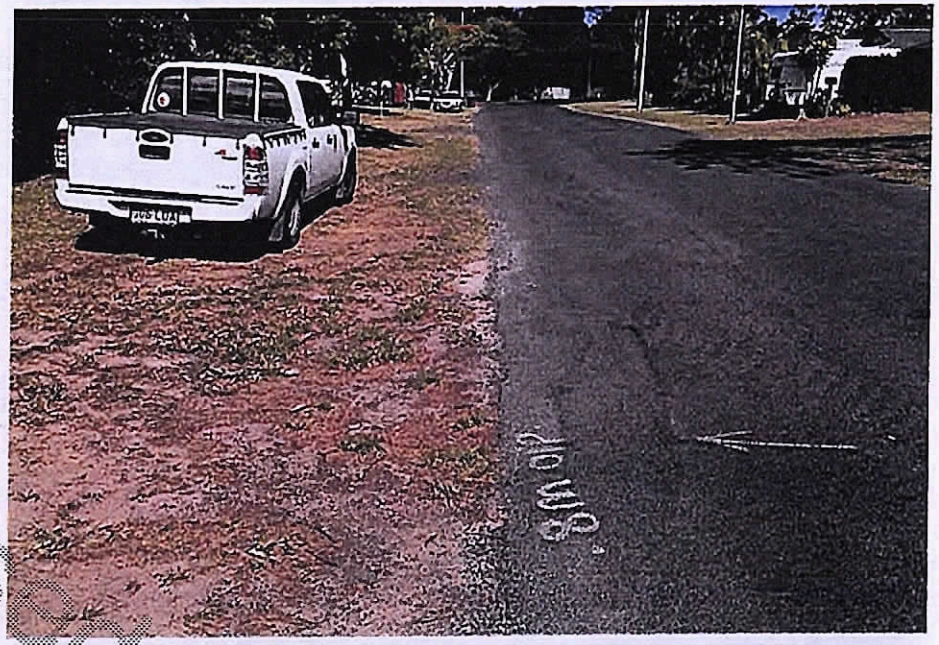
Signed: _____ Date: 1st MARCH 2013

For and on behalf of SRS Underwriting Agency Pty Ltd

6. Dilapidation Report


TOYOTA


TOYOTA

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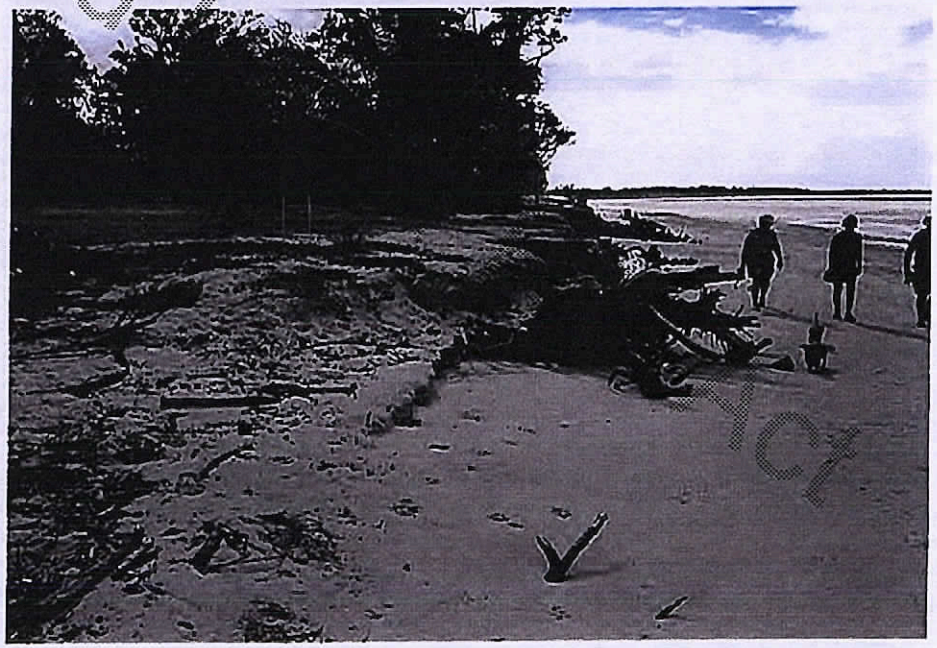
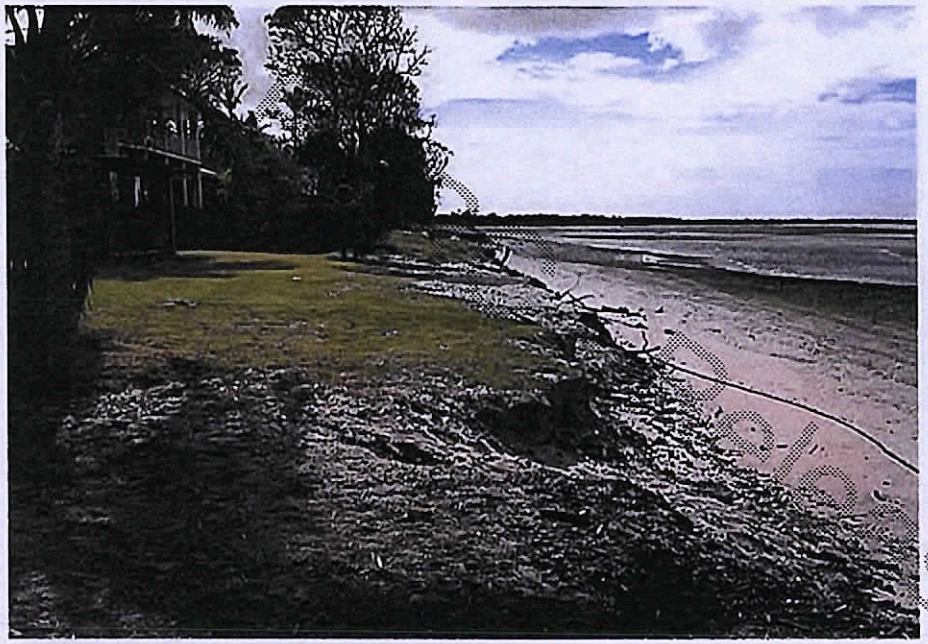
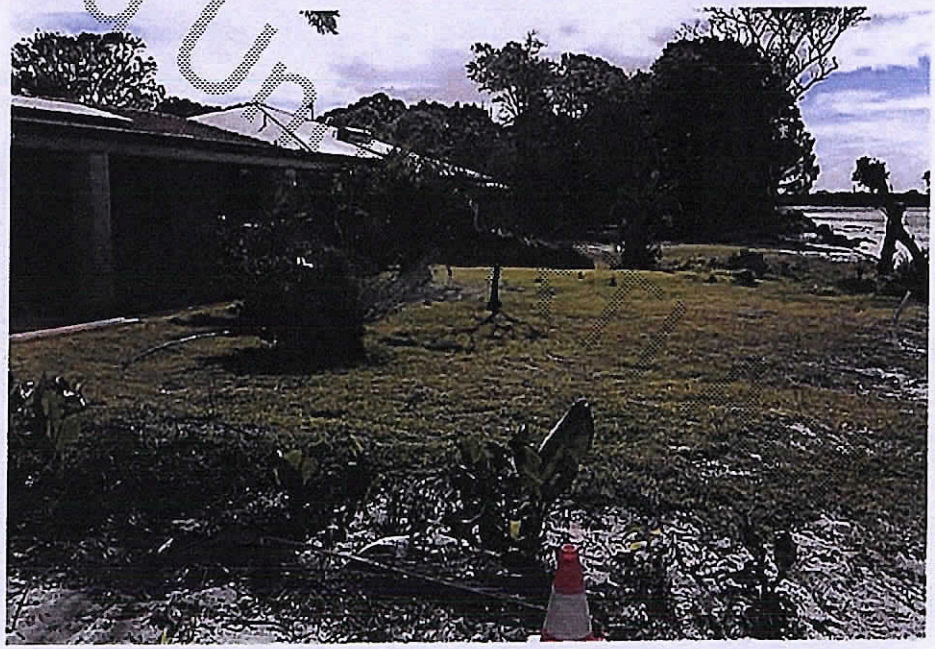
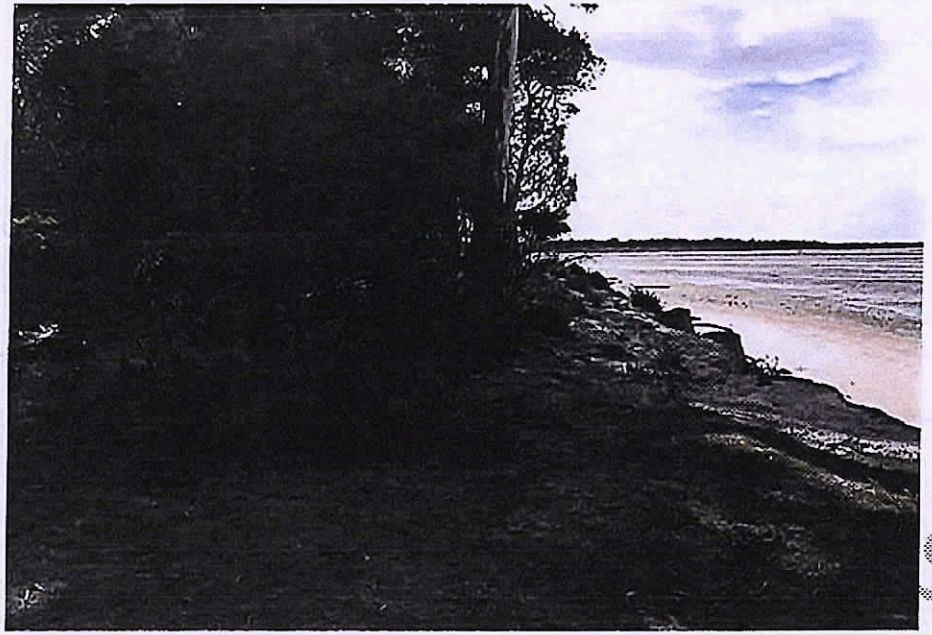
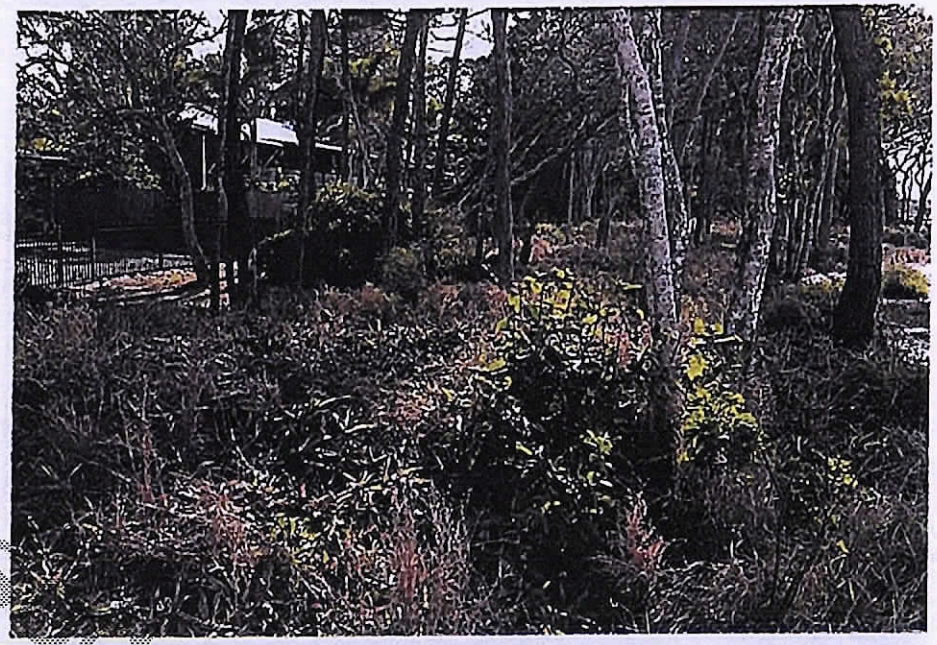
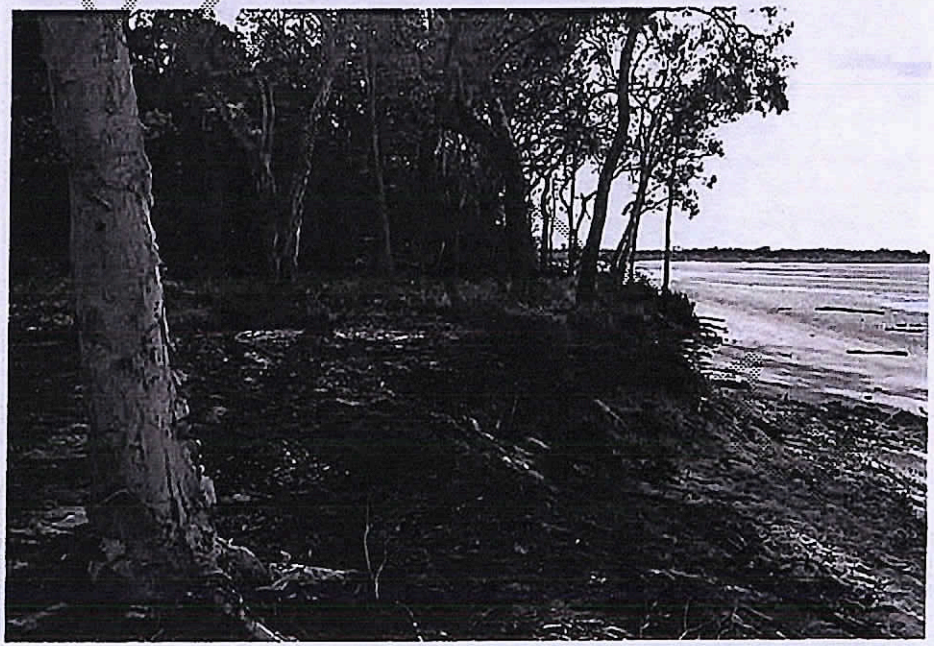


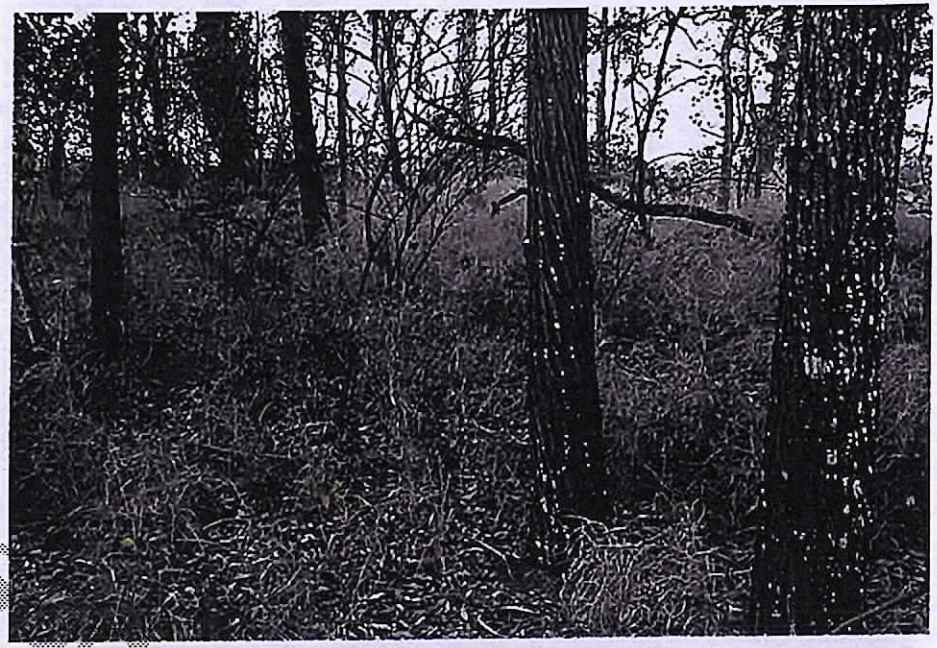












7. Project Bill of Quantities

Fraser Coast Regional Council
PROJECT: CORP 1-13/14
KINGFISHER PARADE TOOGOOM SEATWALL
BILL OF QUANTITIES

Description	Unit	Quantity	Rate	Amount
Quality Control Requirements				
Quality Control	LS	1	$ -	$ -
Mobilisation and Establishment *(includes specialist items and products)*	LS	1	$	$ -
General (where applicable)				
Supply Digital As Constructed information	LS	1	$ -	$ -
Control of Traffic	LS	1	$ -	$ -
Temporary Erosion and Sediment Control	LS	1	$ -	$ -
Acid Sulphate soil treatment *(Provisional)*	m3	100	$ -	$ -
Unscheduled work rates and other provisional items - refer attached sheet				
Site Preparation and Restoration				
Site Preparation	LS	1	$ -	$ -
Re-vegetation	LS	1	PRIME COST	PRIME COST
Tree Clearing	LS	1	$ -	$ -
Rockwall Material Schedule				
Excavation and backfills	m3	17500	$ -	$ -
Geotextile 600R	m2	4700	$ -	$ -
Secondary armour, 150kg	Tonne	3500	$ -	$ -
Rock armour, 1.5T	Tonne	7800	$ -	$ -
Capping Stones Rock Armour 4T	Tonne	3900	$ -	$ -
Marking Plates (Cl 7)				
Miscellaneous				
Timber Staircase and Railing (Cl 7.3)	LS	1	$ -	$ -
"Hazard - unstable Rocks" signs (Cl 7.2.1)	No.	2	$ -	$ -
Marking Plates (Cl 7.2.2)	No.	60	$ -	$ -
			TOTAL COST (Excluding GST)	$ -

Lanson Civil Pty Ltd
Name of Tenderer

15th October 2013
Date

Approved Signatory

8. Lot Register

LOT REGISTER

Project: _____ Stage: _____

Component: _____

e.g. sub-grade; sub-base; base; k&c; concrete pits

LOT NO.	ROADWAY ID	CHAINAGE START	CHAINAGE END	LOT NO.	ROADWAY ID	CHAINAGE START	CHAINAGE END
1				15			
2				16			
3				17			
4				18			
5				19			
6				20			
7				21			
8				22			
9				23			
10				24			
11				25			
12				26			
13				27			
14				28			

9. Technical Procedures, Inspection & Test Plans and Checklists

[Project Manager to indicate relevant documents by ticking]

Number	Work Instruction or Technical Procedure	ITP		Checklist	
LC-TP-01	Technical Procedure Trench Excavation	LC-ITP-01		LC-CHK-01	
LC-TP-02	Topsoil & Grass	LC-ITP-02		LC-CHK-02	
LC-TP-03	Clear and Grubb	LC-ITP-03	✓	LC-CHK-03	
LC-TP-04	Topsoiling	LC-ITP-04		LC-CHK-04	
LC-TP-05	Excavation	LC-ITP-05	✓	LC-CHK-05	
LC-TP-06	Subgrade	LC-ITP-06		LC-CHK-06	
LC-TP-07	Subgrade Cultivation	LC-ITP-07		LC-CHK-07	
LC-TP-08	Embankment Fill	LC-ITP-08		LC-CHK-08	
LC-TP-09	Unbound Road pavements	LC-ITP-09		LC-CHK-09	
LC-TP-10	Cement Modified Unbound Pavement Construction	LC-ITP-10		LC-CHK-10	
LC-TP-11	(Pavement	LC-ITP-11		LC-CHK-11	
LC-TP-12	Stabilised pavement)	LC-ITP-12		LC-CHK-12	
LC-TP-13	Shotcrete	LC-ITP-13		LC-CHK-13	
LC-TP-14	Stormwater Drainage	LC-ITP-14		LC-CHK-14	
LC-TP-15	Subsoil Drains	LC-ITP-15		LC-CHK-15	
LC-TP-16	Strip Drains	LC-ITP-16		LC-CHK-16	
LC-TP-17	Bitumen Surfacing	LC-ITP-17		LC-CHK-17	
LC-TP-18	MRD Bitumen	LC-ITP-18		LC-CHK-18	
LC-TP-19	Asphalt	LC-ITP-19		LC-CHK-19	
LC-TP-20	MRD Asphalt	LC-ITP-20		LC-CHK-20	
LC-TP-21	Concrete Works (Place / Pour)	LC-ITP-21		LC-CHK-21	
LC-TP-22	Kerb	LC-ITP-22		LC-CHK-22	
LC-TP-23	Excavations for Concrete	LC-ITP-23		LC-CHK-23	
LC-TP-24	Manholes (Insitu / Precast)	LC-ITP-24		LC-CHK-24	
LC-TP-25	Gullies	LC-ITP-25		LC-CHK-25	
LC-TP-26	Backfill to Structures	LC-ITP-26		LC-CHK-26	
LC-TP-27	Sewer Reticulation	LC-ITP-27		LC-CHK-27	

Number	Work Instruction or Technical Procedure	ITP		Checklist	
LC-TP-28	Water Reticulation	LC-ITP-28		LC-CHK-28	
LC-TP-29	Installation Underground Services	LC-ITP-29		LC-CHK-29	
LC-TP-30	Conduits	LC-ITP-30		LC-CHK-30	
LC-TP-31	Fencing	LC-ITP-31		LC-CHK-31	
LC-TP-32	Gabions	LC-ITP-32		LC-CHK-32	
LC-TP-33	Rock Protection	LC-ITP-33	✓	LC-CHK-33	
LC-TP-34	Grout	LC-ITP-34		LC-CHK-34	
LC-TP-35	Buildings	LC-ITP-35		LC-CHK-35	
LC-TP-36	Blockwork	LC-ITP-36		LC-CHK-36	
LC-TP-37	Girders	LC-ITP-37		LC-CHK-37	
LC-TP-38	Deck & Kerb	LC-ITP-38		LC-CHK-38	
LC-TP-39	Bored Piers	LC-ITP-39	✓	LC-CHK-39	
LC-TP-40	Bored Piers with Ground Anchors	LC-ITP-40		LC-CHK-40	
LC-TP-41	Blasting	LC-ITP-41		LC-CHK-41	
LC-TP-42	Bulk Push	LC-ITP-42		LC-CHK-42	
LC-TP-43	Graded Banks	LC-ITP-43		LC-CHK-43	
LC-TP-44	Road Furniture	LC-ITP-44		LC-CHK-44	
LC-TP-45	Demolition	LC-ITP-45		LC-CHK-45	
LC-TP-46	Survey Calibration	LC-ITP-46		LC-CHK-46	
LC-TP-47	Concrete Log	LC-ITP-47		LC-CHK-47	
LC-TP-48	Excavation permit	LC-ITP-48		LC-CHK-48	
LC-TP-49	Earthworks	LC-ITP-49		LC-CHK-49	
LC-TP-50	Flexible Pavements	LC-ITP-50		LC-CHK-50	
LC-TP-51	Stormwater	LC-ITP-51		LC-CHK-51	
LC-TP-52	Traffic Control	LC-ITP-52		LC-CHK-52	
LC-TP-53	Utility Conduiting	LC-ITP-53		LC-CHK-53	
LC-TP-54	On Maintenance	LC-ITP-54		LC-CHK-54	
LC-TP-55	Roadway Excavation	LC-ITP-55		LC-CHK-55	
LC-TP-56	Roadway Embankment	LC-ITP-56		LC-CHK-56	
LC-TP-57	Sub-grade Preparations	LC-ITP-57		LC-CHK-57	

Number	Work Instruction or Technical Procedure	ITP		Checklist	
LC-TP-58	Unbound Pavements	LC-ITP-58		LC-CHK-58	
LC-TP-59	RBCB Foundation Preparation	LC-ITP-59		LC-CHK-59	
LC-TP-60	RC Pipe Culvert	LC-ITP-60		LC-CHK-60	
LC-TP-61	Manhole Construction	LC-ITP-61		LC-CHK-61	
LC-TP-62	Gully Construction	LC-ITP-62		LC-CHK-62	
LC-TP-63	Steel Beam Guard Rail	LC-ITP-63		LC-CHK-63	
LC-TP-64	Sprayed Bituminous Reseal / Enrichment	LC-ITP-64		LC-CHK-64	
LC-TP-65	Provision for Traffic	LC-ITP-65	✓	LC-CHK-65	
LC-TP-66	Project Warning Signs	LC-ITP-66		LC-CHK-66	
LC-TP-67	Formation Widening	LC-ITP-67		LC-CHK-67	
LC-TP-68	CS Pipe Culvert	LC-ITP-68		LC-CHK-68	
LC-TP-69	Installation of Road Signs & Guide	LC-ITP-69		LC-CHK-69	
LC-TP-70	Construction of Sidetracks	LC-ITP-70		LC-CHK-70	
LC-TP-71	Longitudinal Drainage	LC-ITP-71		LC-CHK-71	
LC-TP-72	Concrete Base to RCBC	LC-ITP-72		LC-CHK-72	
LC-TP-73	Installation of RCBC	LC-ITP-73		LC-CHK-73	
LC-TP-74	Supply of Quarry Products	LC-ITP-74		LC-CHK-74	
LC-TP-75	Ground Surface Treatment	LC-ITP-75		LC-CHK-75	
LC-TP-76	Removal Demolition of Culverts & Structures	LC-ITP-76		LC-CHK-76	
LC-TP-77	Road Roughness	LC-ITP-77		LC-CHK-77	
LC-TP-78	Grouted Stone Pitching	LC-ITP-78		LC-CHK-78	
LC-TP-79	RCP Culvert End Structures	LC-ITP-79		LC-CHK-79	
(eg) SWMS-01	Site Specific Planning	ITP-01		ITP-01-01	√
	Subcontracted works would be subject to The above applicable Inspection Testing				
	And Check sheets documenting conformance				

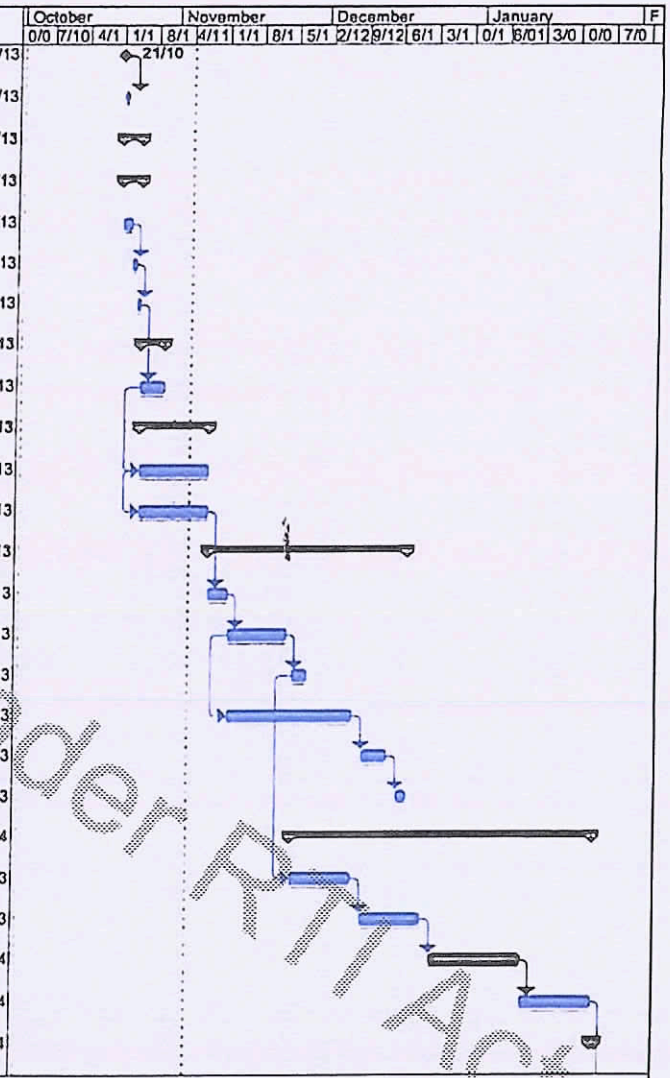
10. Final Acceptance

Inspections and tests for the project shall be carried out as required by the ITPs identified above.

The PM shall convene a meeting with the client's representative at the stage of practical completion. Items discussed and agreed shall be recorded on the Practical Completion Report.

The PM shall convene a meeting with the client's representative at the stage of the defect liability period. Items discussed and agreed shall be recorded on the End Defect Liability Inspection Report.

ID	Task Name	Duration	Start	Finish
1	Fraser Coast Regional Council	0 days	Mon 21/10/13	Mon 21/10/13
2	Kinfisher Parade Toogoom Seawall	1 day?	Mon 21/10/13	Mon 21/10/13
3	PROJECT: CORP 1 - 13/14	4 days?	Mon 21/10/13	Thu 24/10/13
4	QUALITY CONTROL REQUIREMENTS	4 days?	Mon 21/10/13	Thu 24/10/13
5	Public awareness and submissions	2 days	Mon 21/10/13	Tue 22/10/13
6	Relocation and protection of existing services	1 day	Wed 23/10/13	Wed 23/10/13
7	Site Establishment	1 day?	Thu 24/10/13	Thu 24/10/13
8	CONTROL OF EROSION AND SEDIMENTATION	3 days	Fri 25/10/13	Tue 29/10/13
9	Fencing off adjacent properties and dust proofing, Temporary Erosion and Sediment Control	3 days	Fri 25/10/13	Tue 29/10/13
10	CLEARING AND GRUBBING	10 days	Fri 25/10/13	Thu 7/11/13
11	Tree felling and mulching	10 days	Fri 25/10/13	Thu 7/11/13
12	Dig out buried trees along beach front Load and cart to the dump	10 days	Fri 25/10/13	Thu 7/11/13
13	EARTHWORKS	29 days	Fri 8/11/13	Tue 17/12/13
14	Stripping and stockpiling topsoil	2 days	Fri 8/11/13	Mon 11/11/13
15	General Earthworks - Cut to Fill (eastern and western ends of seawall footprint and place to wider	10 days	Tue 12/11/13	Sat 23/11/13
16	General Earthworks - place topsoil and mulch to 10m property frontages to provide site access/ha	3 days	Mon 25/11/13	Wed 27/11/13
17	General Earthworks - Excavate to profile	20 days	Tue 12/11/13	Fri 6/12/13
18	Acid Sulphate treatments	5 days	Mon 9/12/13	Fri 13/12/13
19	Supply and Placement of Geofabric - Table drains (PROVISIONAL)	2 days	Mon 16/12/13	Tue 17/12/13
20	SUPPLY AND PLACE ROCK	44 days	Mon 25/11/13	Thu 23/01/14
21	Supply and place Secondary armour	10 days	Mon 25/11/13	Fri 6/12/13
22	Supply and place armour	10 days	Mon 9/12/13	Fri 20/12/13
23	Christmas Shutdown	14 days	Mon 23/12/13	Thu 9/01/14
24	Supply and place Capping Stones	10 days	Fri 10/01/14	Thu 23/01/14
25	Finishing	1 day?	Fri 24/01/14	Fri 24/01/14



Project: Program.mpp
Date: Mon 4/11/13

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

ID	Task Name	Duration	Start	Finish
26	Bridge structure	1 day?	Fri 24/01/14	Fri 24/01/14
27	SIGNPOSTING	2 days?	Fri 24/01/14	Mon 27/01/14
28	Supply, Delivery & Erection of Signs	1 day?	Fri 24/01/14	Fri 24/01/14
29	Supply, Delivery & Erection of Sign Support Structures	1 day?	Mon 27/01/14	Mon 27/01/14
30	PRACTICAL COMPLETION	0 days	Mon 27/01/14	Mon 27/01/14

Project: Program.mpp
Date: Mon 4/11/13

Task | Milestone | External Tasks
Split | Summary | External Milestone
Progress | Project Summary | Deadline

DIAL BEFORE YOU DIG www.1100.com.au

Job No 6840754

Phone: 1100
www.1100.com.au

Caller Details

Contact:	Mr Robin Wylucki	**Caller Id:**	776662	**Phone:**	0741942100
Company:	Lanson Civil P/L	**Mobile:**	0457796917	**Fax:**	0741942122
Address:	Lot 36 Lot 26 Navelina Ct DUNDOWRAN QLD 4655	**Email:**	rob.wylucki@lansoncivil.com.au		

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

User Reference: Toogoom Seawall
Working on Behalf of: Private

Enquiry Date:	**Start Date:**	**End Date:**
01/11/2013	06/11/2013	31/12/2013

Address: Kingfisher Pde
Toogoom QLD 4655

Job Purpose: Excavation
Onsite Activity: Mechanical Excavation
Location of Workplace: Both
Location In Road: Footpath,Nature Strip

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:
We are going to be working on the 'Kingfisher Parade Toogoom Seawall'.....we need to know if there are any services near the wall. Thanks

Your Responsibilities and Duty of Care

- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at **www.1100.com.au**
- **For more information on safe excavation practices, visit www.1100.com.au**

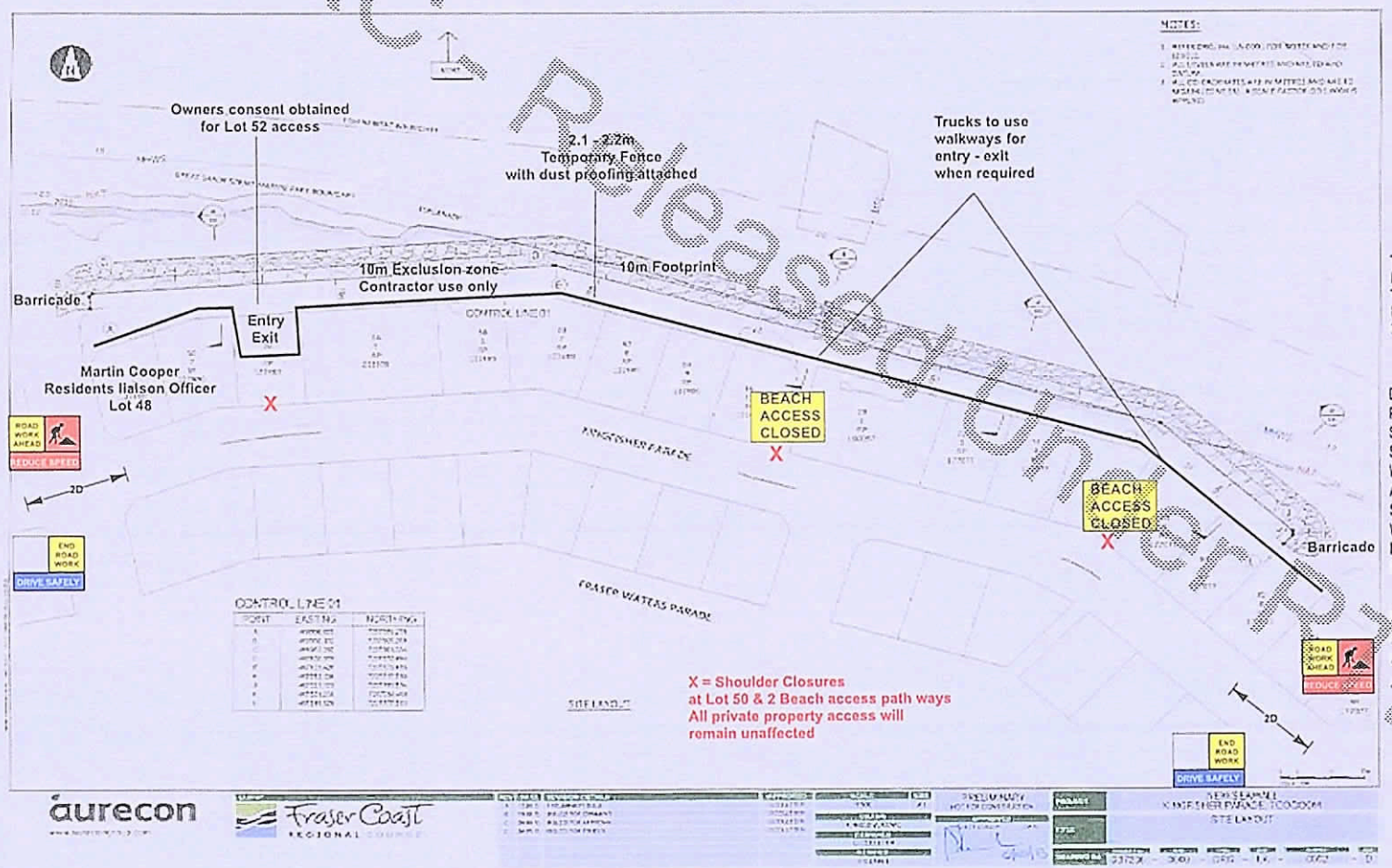
Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Dial Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.
** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.
# Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
31309023	Ergon Energy, Maryborough	131046	NOTIFIED
31309024	Telstra QLD, Regional	1800653935	NOTIFIED
31309025	Wide Bay Water Corporation	0741947625	NOTIFIED

END OF UTILITIES LIST

NEW SEAWALL
KINGFISHER PARADE - TOOGOOM
FRASER COAST REGIONAL COUNCIL



Truck Route :
Plalba - Burrum Heads Road
Toogoom Road
Lorikeet Avenue
Kingfisher Parade

D = 10 to 15m
Plan not to scale
Signs to be 1m clear of travel path
Signs to erected permantely 1.5m off the ground
Workman to be covered or removed when no works in progress
Any conflicting signs to be covered or removed
Signs to be checked and logged daily
Working hours 0630 to 1730hrs Mon - Sat
No working on Sunday
Duration of works approx 12wks

Plan refers to diagram 10
MUTCD Part 3 -2010
Shoulder Closure All Roads
Author: Robin Wylucki
Lanson Civil P/L
0457796917 - 41942100
08.11.2013 - Version 1
Level: 2 - 3 - 4

aurecon

Fraser Coast REGIONAL COUNCIL

Plant Location Details - Form

To:	Mr Robin Wylucki	DBYD Inquiry/Referral No: 31309023	
Company:	Lanson Civil P/L	Date: 1/11/2013 12:36:00 PM	
Address:	Lot 36 Lot 26 Navelina Ct	From: Ergon Energy Region Ergon WB	
Fax No:	0741942122	Telephone: 13 10 46	

THIS RESPONSE IS APPLICABLE ONLY FOR ERGON ENERGY ELECTRICITY

Our search has revealed there is existing and planned Ergon Energy Underground Plant within the defined search area. There is a possibility the planned assets may have been installed prior to your enquiry. Please see attached plan.

It is important that you note:

1. ***That in addition to underground cables marked on attached plan there maybe underground Substation earth conductors, M.E.N. Conductors, S.W.E.R. Substation Earth Conductors, HBS Earth Mats, or Consumers Mains in the vicinity.***
2. ***If further information or a physical cable location is required, please refer to the contact number nominated above.***
3. ***This advice does not identify the presence of private underground cables that may run from Ergon Energy mains to consumer's premises***
4. ***You may need to arrange for a cable location by a certified contractor when locating cables that are not assets of Ergon Energy from the point of supply.***

Further Comments:

In response to your application, Ergon Energy provides the attached copy of existing records showing the approximate location of known Ergon Energy plant within the vicinity of:

Location address: Kingfisher Pde
Intersection:
Distance:
Private/Road/Both: B

Suburb/Town: Toogoom QLD 4655
UBD Map/Ref: Q659_13_21,Q659_13_22,Q659_13_23
Activity Code: 15
Start Date: 6/11/2013 12:00:00 AM

"Duty of Care" for everyone

RESPONSIBILITIES WHEN WORKING IN THE VICINITY OF ERGON ENERGY PLANT

Everyone has a legal *"Duty of Care"* that must be observed, particularly when working in the vicinity of electrical plant. Electrical plant includes underground cables; conduits and other associated underground equipment. When discharging this *"Duty of Care"* in relation to Ergon Energy plant, the following points must be considered:

1. It is the responsibility of the architect, consulting engineer, developer, and head contractor in the project planning stages to design for minimal impact on and protection of Ergon Energy plant. Ergon Energy will provide free plans showing the presence of its underground plant to assist at this design stage.

2. It is the constructor's responsibility to:
   a) Anticipate and request plans of Ergon Energy plant for a particular location at a reasonable time before construction begins.
   b) Visually locate Ergon Energy plant by hand digging where construction activities may damage or interfere with Ergon Energy plant.
   c) Contact Ergon Energy's Operations Department (see details above) if Ergon Energy plant is wholly or partly affected by planned construction activities.

Ergon Energy Corporation Limited ABN 50 087 646 062
Ergon Energy Queensland Pty Ltd ABN 11 121 177 802

Plant Location Details - Form

As well as the above, it will be necessary for the developer or constructor to provide Ergon Energy with a written Work Method Statement for all works in the vicinity of, or involving Ergon Energy plant. This Work Method Statement should form part of the tendering documentation and work instruction. All Work Method Statements shall be approved by Ergon Energy prior to the commencement of site civil works.

CONDITIONS OF SUPPLY OF INFORMATION – PLEASE READ

- Ergon Energy agrees to provide free plans if an Ergon Energy plant location request is made to Free call "1100" (Dial before You Dig – DBYD) only on the basis that at least 2 business days notice given and the applicant agrees to the terms of this agreement.
- Ergon Energy retains copyright in all plans and details provided in connection with your request.
- Plans and or details provided by Ergon Energy are current for ***four weeks*** from the date of dispatch and should be disposed of by shredding or any other secure disposal method after use.
- Ergon Energy plans or other details are provided for the use of the applicant, its servants, or agents, for the sole purpose of the applicant's responsibilities in relation to Ergon Energy plan and shall not be used for any other purpose.
- Ergon Energy plans are circuit diagrams only and indicate the presence of plant in the general vicinity of the geographical area shown. Exact ground cover and alignments cannot be given with any certainty; as such levels can change over time.
- On receipt of plans and before commencing excavation work or similar activities near Ergon Energy plant, ***carefully locate this plant first by using the above mentioned method*** to avoid damage.
- Ergon Energy, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Ergon Energy against any claim or demand for any such loss or damage to the applicant, its servants, or agents or to any third party.
- The constructor is responsible for all plant damages when works commence prior to obtaining Ergon Energy plans, or at any time after that for failure to follow agreed instructions contained in this document or any other advice provided by Ergon Energy.
- By undertaking any work, you acknowledge that Ergon Energy has rights to recover compensation for any loss or damage to Ergon Energy caused by interference or damage, including consequential loss and damages to its cable network or other property.

REMOTE OR ON-SITE LOCATION ADVICE

This service shall be provided at Ergon Energy's discretion:

- Ergon Energy may provide either remote over the phone or on-site location advice to assist in the location of Ergon Energy plant, including how to visually locate and protect the plant when excavating.
- If the constructor is unable to locate Ergon Energy plant within 2.5 m of nominal plan locations, they should arrange with the Operations Department for on-site engineering advice.
- Where on-site location advice is provided, the constructor is responsible for all pot-holing to visually locate and expose Ergon Energy plant.

WHEN WORKING IN THE VICINITY OF ERGON ENERGY PLANT, YOU MUST OBSERVE THE FOLLOWING CONDITIONS

Records
The first step before any excavation commences is to obtain records of Ergon Energy plant in the vicinity of the work. For new work, records should be obtained during the planning and design stage. The records provided by Ergon Energy must be made available to all construction groups on site. Where plant information is transferred to plans for the proposed work, care must be exercised to ensure that important detail is not lost in the process.

Location of Cables
Examining the records is not sufficient, as reference points may change from the time of installation. Records must also be physically proven when working in close proximity to them. The exact location of plant likely to be affected shall be confirmed by use of an electronic cable locater followed by ***careful excavation to the level of cover slabs or conduits. Pot-holing must be used in advance of motorised excavators.*** In any case, where any doubt exists with respect to interpretation of cable records, you must contact the Ergon Energy Operations Department for further advice. For after hours enquires, Ergon Energy should be contacted using the emergency contact number listed below.

Electrical Cable Covers
Most of Ergon Energy cables have warning covers of either:

1. Clay paving bricks or tiles marked "Electricity" or similar (also unmarked)
2. Concrete or PVC cover slabs
3. PVC, A/C or fibro conduit, fibre reinforced concrete, iron or steel pipe
4. Concrete encased PVC or steel pipe
5. Thin plastic marker tape
6. Large pipes housing multiple ducts
7. Multiple duct systems, including earthenware or concrete 2-, 4-, and 6-way ducts and shamrocks

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Ergon Energy Queensland Pty Ltd ABN 11 121 177 802

Plant Location Details - Form

Note: Some cables are known to be buried without covers or identification markers.

Excavating Near Cables
For all work within 2.5 m of nominal location, the constructor is required to pot-hole and exposes the plant, hence proving its exact location before work can commence. *YOU MUST BE VERY CAREFUL AS THE CABLE COULD BE LIVE AND YOU MUST TAKE PRECAUTION TO AVOID THE RISK OF ELECTRIC SHOCK.*

Excavating Parallel to Cables
If construction work is parallel to Ergon Energy cables, then pot-hole at least every 4 m is required to establish the location of all cables, hence confirming nominal locations before work can commence. Generally, there is no restriction on excavating parallel to Ergon Energy cables to a ***depth not exceeding that of the cable.*** If an ***excavation exceeds the depth of the cables*** and it is likely that the covers or bedding material around the cables/pipes will move, ***Ergon Energy must be contacted.***

Note: Cable depths may vary suddenly.

Excavating Across Cables
A minimum clearance of ***500 mm*** above and below cables shall be maintained. A standard clearance between services shall be maintained as set down by the individual authorities. If the width or depth of the excavation is such that the cables will be exposed or unsupported, then Ergon Energy must be contacted to determine whether the cables should be taken out of service, or whether they need to be protected or supported. In no case shall a cable cover be removed without approval. A cable cover may only be replaced under the supervision of an Ergon Energy officer. Protective cover strips when removed must be replaced under Ergon Energy supervision and under no circumstances are they to be left without the full protective cover.

Heavy Machinery Operation Over Cables
Where heavy "Crawler" or "Vibration" type machinery is operated over the top of cables a minimum cover of ***450 mm*** to the cable protective cover must be maintained using load bearing protection whilst the machinery is in operation.

Directional Boring Near Cables
When boring parallel to cables, it is essential that trial holes are carefully pot-holed at regular intervals to prove the actual location of the conduits/cables/pipes before using boring machinery. Where it is required to bore across the line of cables, the actual location of the cables shall first be proven by potholing. A trench shall be excavated one metre from the side of the cables where the auger will approach to ensure a minimum clearance of ***500 mm*** for cables can be maintained.

Explosives
Explosives must not be used within 5 metres of cables, unless an engineering report is provided indicating that no damage will be sustained.

Damage Reporting
All damage to cables, conduits and pipes must be reported no matter how insignificant the damage appears to be. Even very minor damage to cable protective coverings can lead to eventual failure of cables through corrosion of metal sheaths and entry of moisture.
All work in the vicinity of damaged plant should cease and the area should be made safe and vacated until a clearance to continue work has been obtained from an Ergon Energy Officer.

24 Hours Emergency Contact Phone 13 22 96 (Electricity)

PLANT SOLUTIONS AND ASSISTANCE

If plant location plans or visual location of Ergon Energy plant by pot-holing reveals that the location of Ergon Energy plant is situated wholly or partly where the developer or constructor plans to work, then Ergon Energy's Operations Department must be contacted to arrange for possible engineering solutions.

If Ergon Energy is required or finds it necessary to relocate or protect works, then payment to Ergon Energy for the cost of this work shall be the responsibility of the principal developer or constructor. Ergon Energy will provide an estimated quotation for work on receipt of the developer's or constructor's order number before work proceeds.

Ergon Energy Corporation Limited ABN 50 087 646 062
Ergon Energy Queensland Pty Ltd ABN 11 121 177 802

ERGON ENERGY

31309023-6840754

Sheet: Index Layer: All Layers

Created by: DBYD Autoplot

Created date: 01/11/2013 11:37:37

Scale: 1:4400

LEGEND

DBYD
DBYD Request
DBYD Request (Area)
DBYD Request (Ergon Search Area)

DCDB
Land Parcel
Land Parcel (Area Geom)

Land Parcel Large
Land Parcel Large (Area Geom)

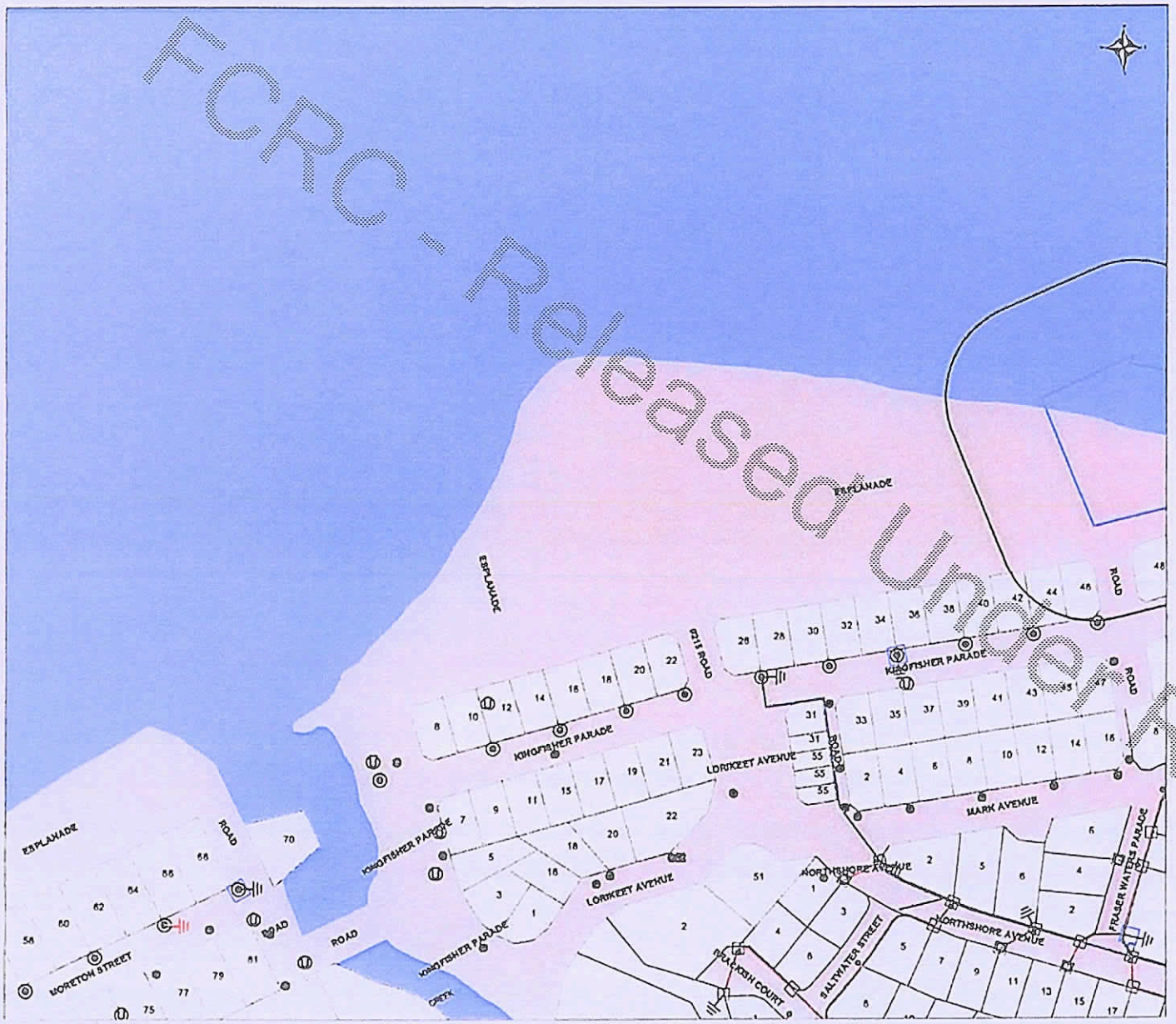
Land Parcel Medium
Land Parcel Medium (Area Geom)

Road Coverage
Road Coverage (Area Geom)

Water Boundary
Water Boundary (Line Geom)

Water Coverage
Water Coverage (Area Geom)

Unregistered Plan
URP Lot
URP Lot (Geometry)



ERGON ENERGY

31309023-6840754

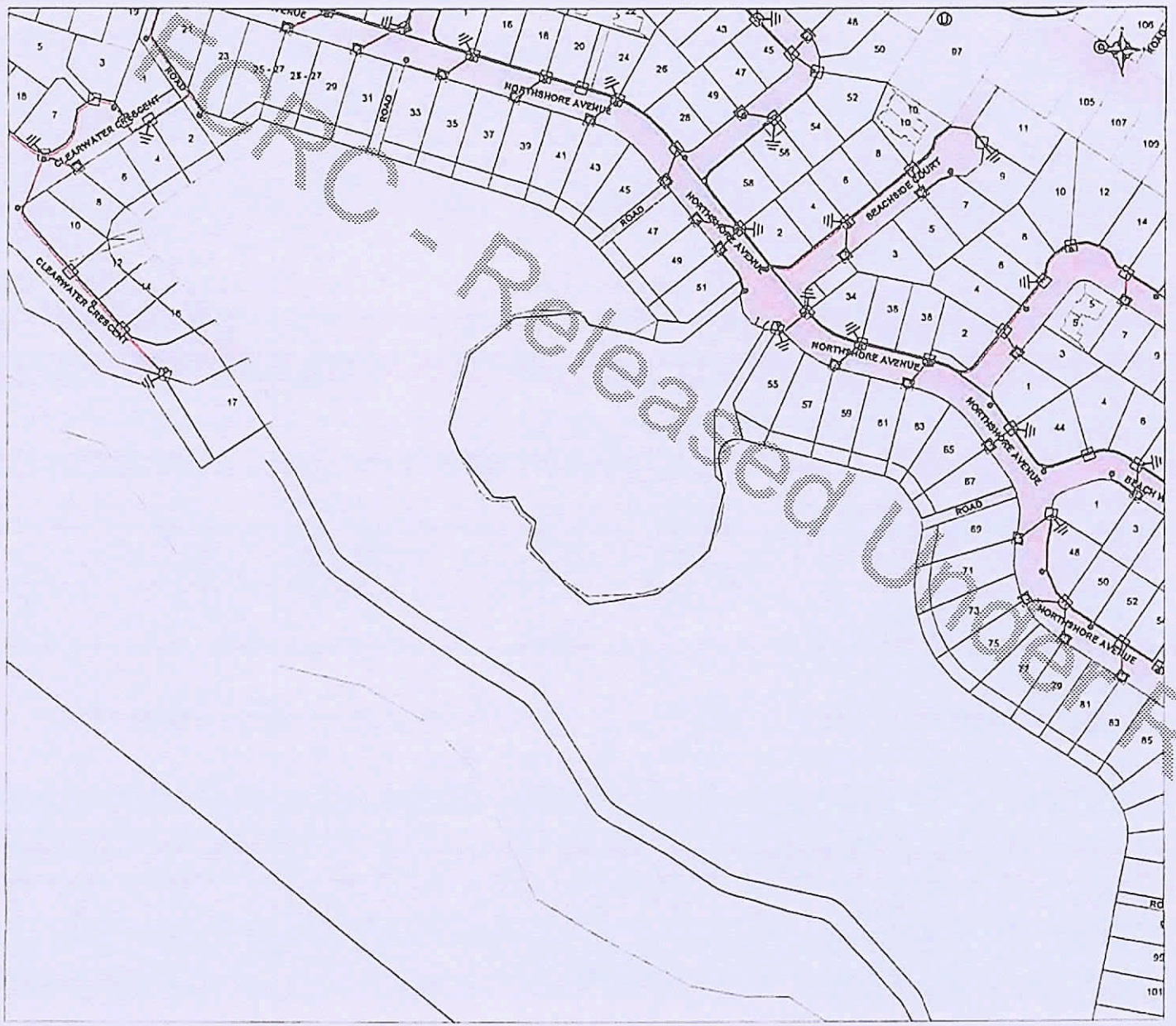
Sheet: 1 Layer: All Layers

Created by: DBYD Autoplot

Created date: 01/11/2013 11:37:41

Scale: 1:2000

LEGEND



ERGON ENERGY

31309023-6840754

Sheet: 2 Layer: All Layers

Created by: DBYD Autoplot

Created date: 01/11/2013 11:37:46

Scale: 1:2000

LEGEND

Electricity
- Duct - as constructed
- Earth - as constructed
- Pillar - Link Pillar
- Pillar - Cross Road Pillar
- Pillar - Normal Pillar
- Pole - SL
- Pole - HV/LV
- Pole - Unknown
- Substation - Ground

Low Voltage
- LV Cable - as constructed (240v)
- LV Cable - as constructed (415v)

High Voltage
- HV Cable - as constructed (11kv)

DBYD
DBYD Request
- DBYD Request (Ergon Search Area)

DCDB
Land Parcel
- Land Parcel (Area Geom)

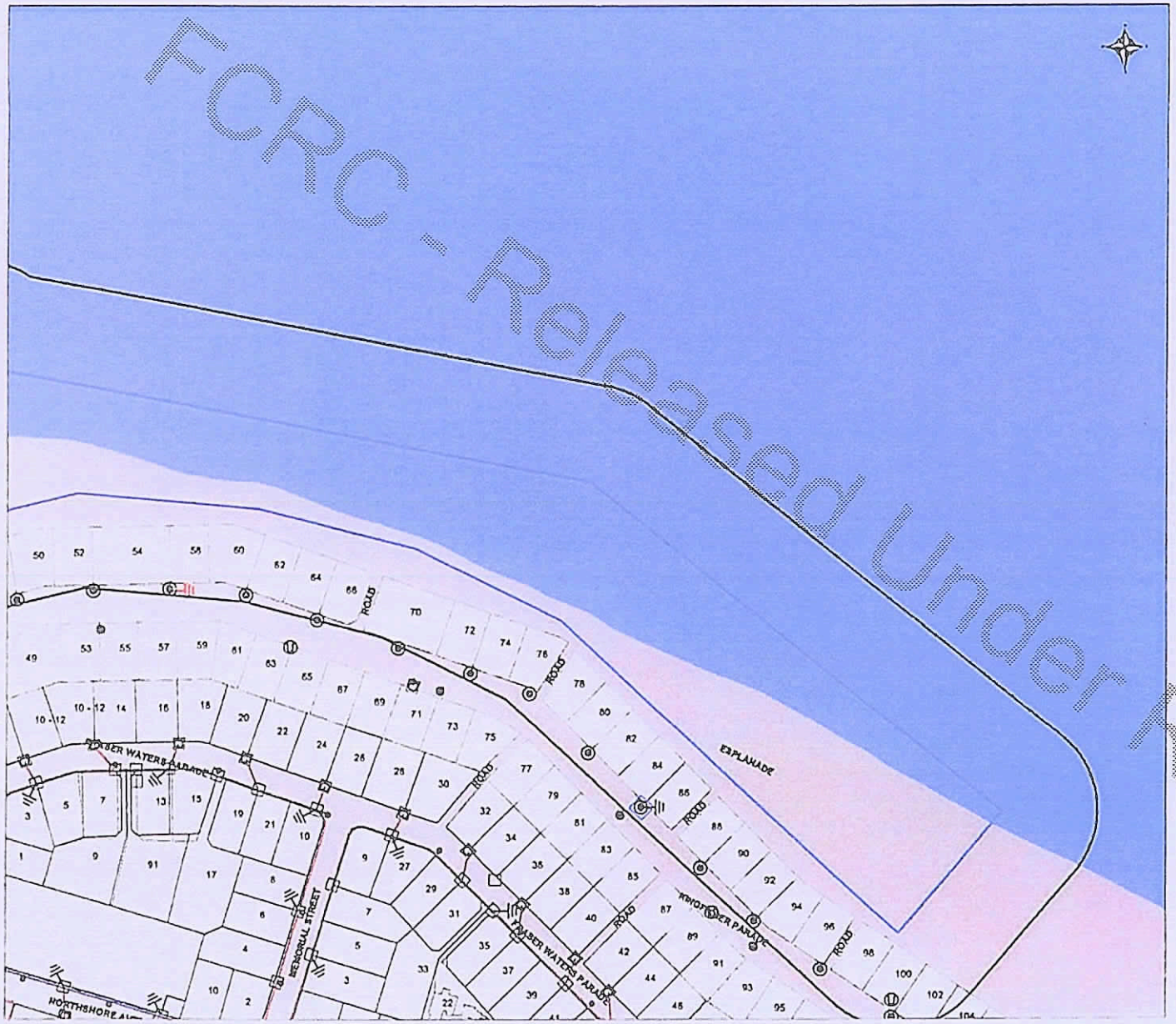
Land Parcel Large
- Land Parcel Large (Area Geom)

Land Parcel Medium
- Land Parcel Medium (Area Geom)

Easement
- Easement (Area Geom)

Road Coverage
- Road Coverage (Area Geom)

Unregistered Plan
URP Lot
- URP Lot (Geometry)



ERGON ENERGY

31309023-6840754

Sheet: 3 Layer: All Layers

Created by: DBYD Autoplot

Created date: 01/11/2013 11:37:50

Scale: 1:2000

LEGEND

Electricity
- Duct - as constructed
- Earth - as constructed
- Pillar - Cross Road Pillar
- Pillar - Normal Pillar
- Pole - SL
- Pole - LV
- Pole - HV/LV
- Pole - Unknown
- Substation - Unknown

Low Voltage
- LV Cable - as constructed (240v)
- LV Cable - as constructed (415v)

High Voltage
- HV Cable - as constructed (11kv)

DBYD
DBYD Request
- DBYD Request (Area)
- DBYD Request (Ergon Search Area)

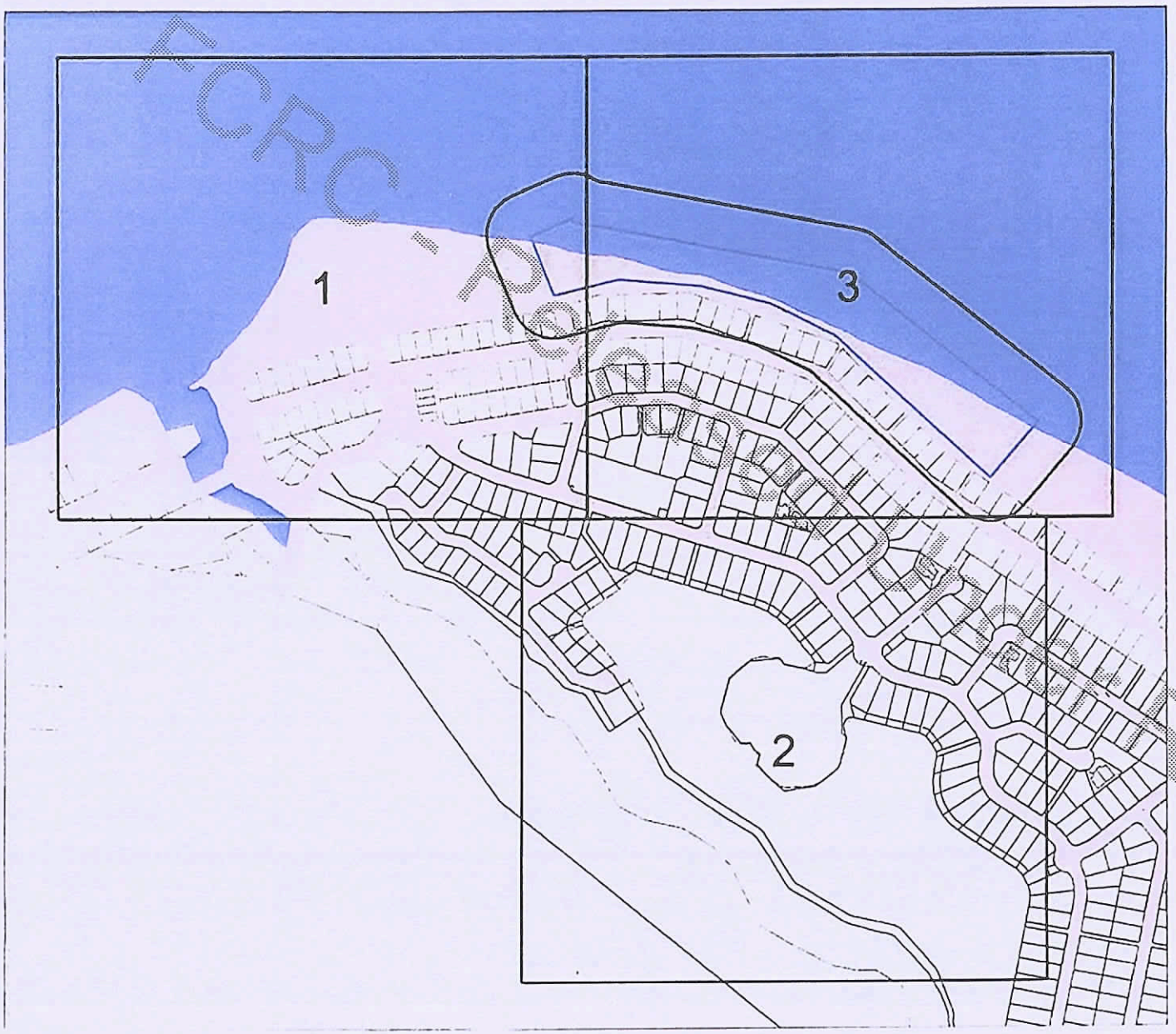
Network_other
Planned Asset
- Planned Asset - earth

DCDB
Land Parcel
- Land Parcel (Area Geom)

Road Coverage
- Road Coverage (Area Geom)

Water Coverage
- Water Coverage (Area Geom)

Unregistered Plan
URP Lot
- URP Lot (Geometry)



ERGON ENERGY

31309023-6840754

Sheet: Index Layer: Planned Assets

Created by: DBYD Autoplot

Created date: 01/11/2013 11:38:06

Scale: 1:4400

LEGEND

DBYD
DBYD Request
DBYD Request (Area)
DBYD Request (Ergon Search Area)

DCDB
Land Parcel
Land Parcel (Area Geom)

Land Parcel Large
Land Parcel Large (Area Geom)

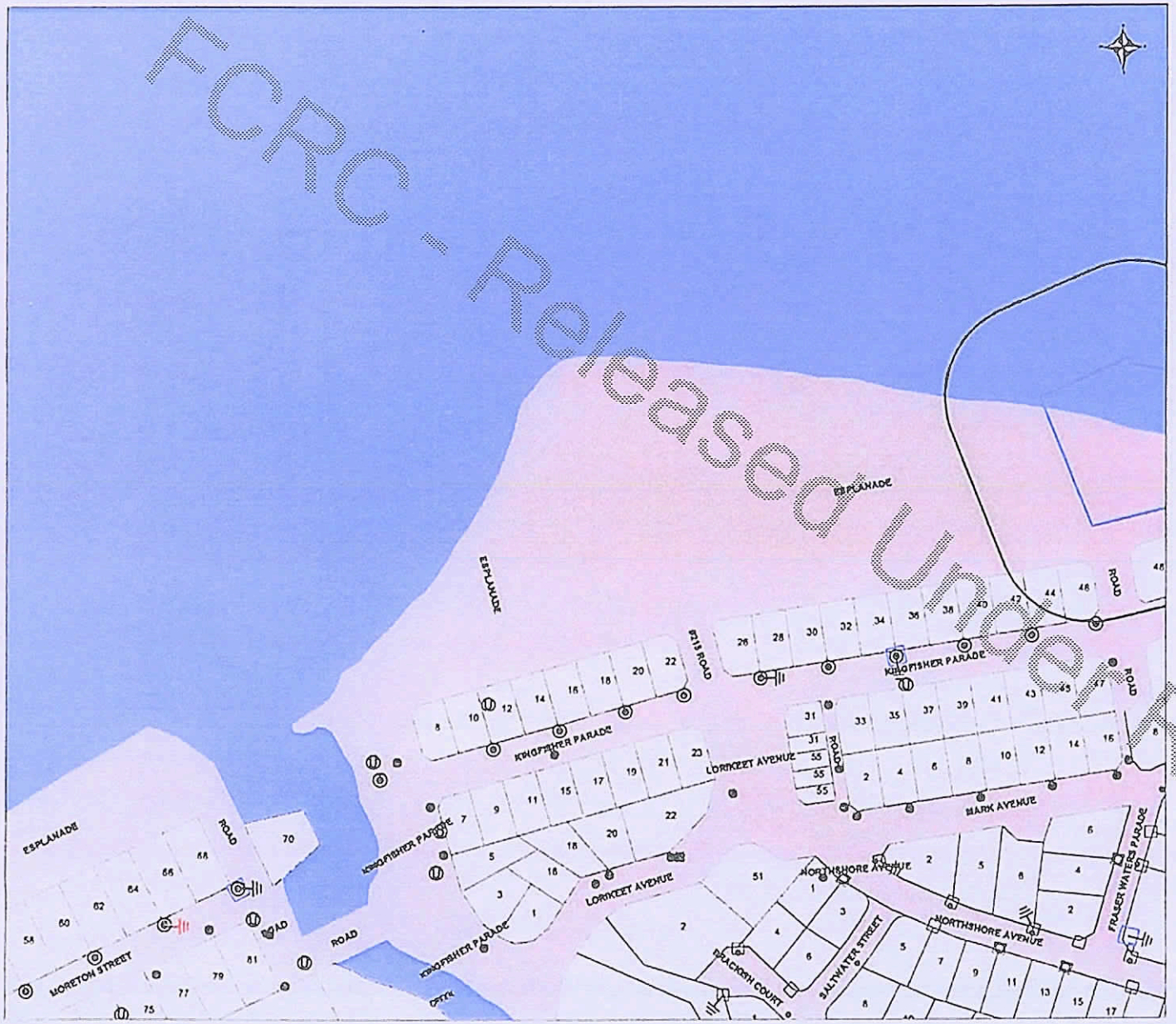
Land Parcel Medium
Land Parcel Medium (Area Geom)

Road Coverage
Road Coverage (Area Geom)

Water Boundary
Water Boundary (Line Geom)

Water Coverage
Water Coverage (Area Geom)

Unregistered Plan
URP Lot
URP Lot (Geometry)



ERGON ENERGY

31309023-6840754

Sheet: 1 Layer: Planned Assets

Created by: DBYD Autoplot

Created date: 01/11/2013 11:38:09

Scale: 1:2000

LEGEND

Electricity
- Earth - as constructed
- Pillar - Cross Road Pillar
- Pillar - Normal Pillar
- Pole - SL
- Pole - Bollard
- Pole - Unknown
- Pole - HV/LV
- Pole - LV
- Substation - Unknown
- Substation - Ground

DBYD
DBYD Request
- DBYD Request (Area)
- DBYD Request (Ergon Search Area)

Network_other
Planned Asset
- Planned Asset - earth

DCDB
Land Parcel
- Land Parcel (Area Geom)

Land Parcel Medium
- Land Parcel Medium (Area Geom)

Road Coverage
- Road Coverage (Area Geom)

Water Coverage
- Water Coverage (Area Geom)

Unregistered Plan
URP Lot
- URP Lot (Geometry)

ERGON ENERGY

31309023-6840754

Sheet: 2 Layer: Planned Assets

Created by: DBYD Autoplot

Created date: 01/11/2013 11:38:12

Scale: 1:2000

LEGEND

Electricity
- Earth - as constructed
- Pillar - Link Pillar
- Pillar - Cross Road Pillar
- Pillar - Normal Pillar
- Pole - SL
- Pole - HV/LV
- Pole - Unknown
- Substation - Ground

DBYD
DBYD Request
- DBYD Request (Ergon Search Area)

DCDB
Land Parcel
- Land Parcel (Area Geom)

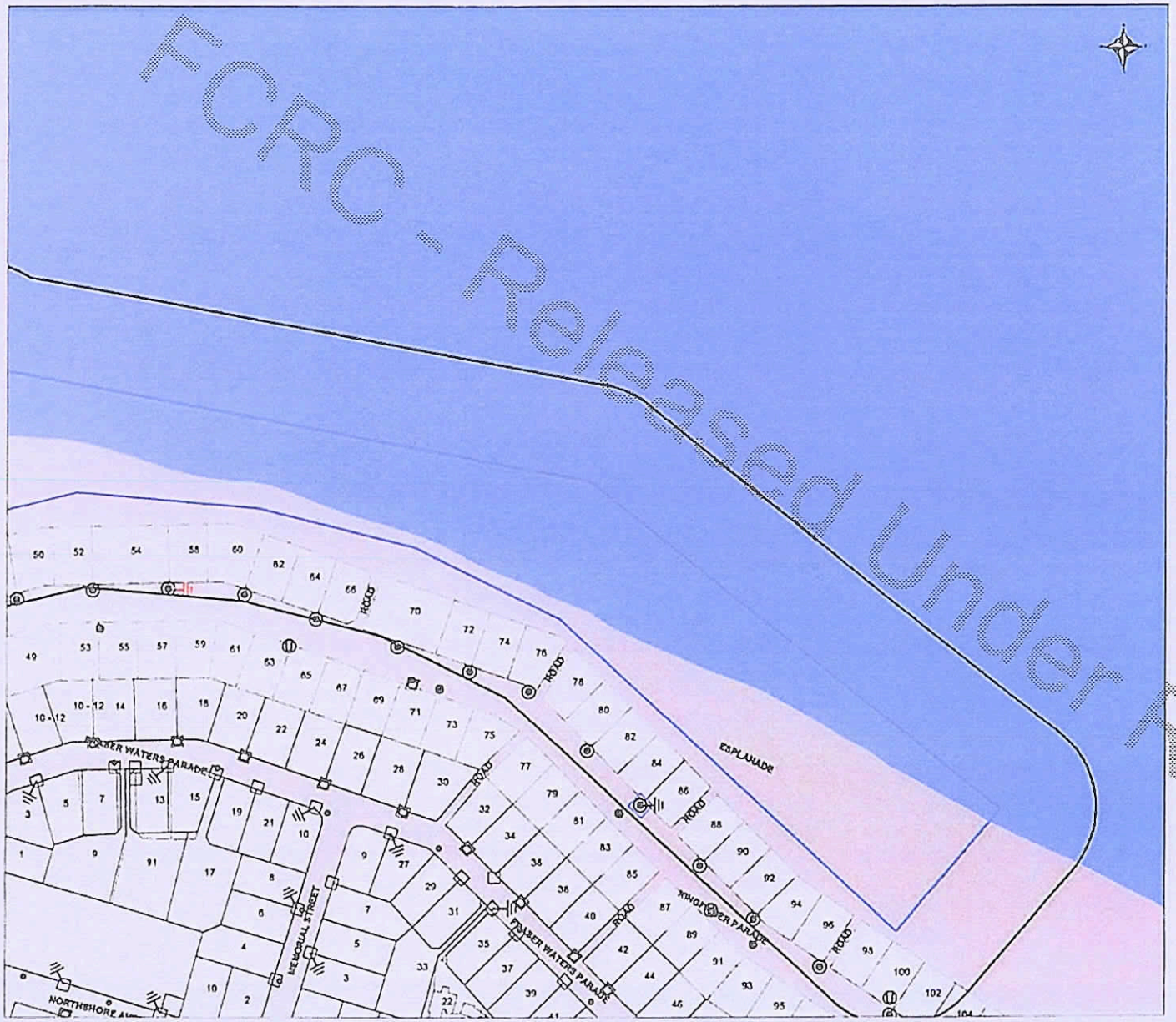
Land Parcel Large
- Land Parcel Large (Area Geom)

Land Parcel Medium
- Land Parcel Medium (Area Geom)

Easement
- Easement (Area Geom)

Road Coverage
- Road Coverage (Area Geom)

Unregistered Plan
URP Lot
- URP Lot (Geometry)



ERGON ENERGY

31309023-6840754

Sheet: 3 Layer: Planned Assets

Created by: DBYD Autoplot

Created date: 01/11/2013 11:38:17

Scale: 1:2000

LEGEND

Electricity
- Earth - as constructed
- Pillar - Cross Road Pillar
- Pillar - Normal Pillar
- Pole - SL
- Pole - LV
- Pole - HV/LV
- Pole - Unknown
- Substation - Unknown

DBYD
DBYD Request
- DBYD Request (Area)
- DBYD Request (Ergon Search Area)

Network_other
Planned Asset
- Planned Asset - earth

DCDB
Land Parcel
- Land Parcel (Area Geom)

Road Coverage
- Road Coverage (Area Geom)

Water Coverage
- Water Coverage (Area Geom)

Unregistered Plan
URP Lot
- URP Lot (Geometry)

This message has been replied to or forwarded.

From: Evans, Peter [Peter.L.Evans@team.telstra.com]
Sent: Thu 11/07/2013 11:16 AM
To: [redacted]
Cc: Nowakowski, Martin
Subject: RE: Project Ref: QN1-0374 SOW Request

Hi Martin,

This email confirms my findings after my site visit on Monday 8/7/2013 that the cable (70/0.050 20 cead) that is approx 300.0 meters along the area concerned is DEAD and cut away in many places. It pleases me to say you can build over this ceble as it is now run pillar 1 30/064 in-between lot 66 to 70 Kingfisher parade.

Thanks

Peter. L .Evans Network Integrity
Operations | Service Delivery Northern | Telstra Operations
P: 07 56564632 | M: 0428 169 931 | E: Peter.L.Evans@team.telstra.com | http://www.in.telstra.com.au/ism/org710/index.asp

IT'S HOW
WE CONNECT

DUTY OF CARE

TELSTRA CORPORATON ACN 051 775 556

IMPORTANT:

Please read and understand all the information and disclaimers provided below.
Sketches and Plans provided by Telstra are circuit diagrams only and indicate the presence of telecommunications plant in the general vicinity of the geographical area shown; exact ground cover and alignments cannot be given with any certainty and cover may alter over time. Telecommunications plant seldom follow straight lines and careful on site investigation is essential to uncover and reveal its exact position.
Due to the nature of Telstra plant and the age of some cables and records, it is impossible to ascertain the location of all Telstra plant. The accuracy and/or completeness of the information cannot be guaranteed and, accordingly Telstra plans are intended to be indicative only.

"DUTY OF CARE"

When working in the vicinity of telecommunications plant you have a legal "Duty of Care" that must be observed.

It is the responsibility of the owner and any consultant engaged by the owner, including an architect, consulting engineer, developer, and head contractor to design for minimal impact and protection of Telstra plant. Telstra will provide plans and sketches showing the presence of its network to assist at this design stage.

It is the owner's (or constructor's) responsibility to:-

a) request plans of Telstra plant for a particular location at a reasonable time before construction begins. If you have any doubts as to the exact location of Telstra Plant, we strongly recommend that you engage an Accredited Plant Locator in your area;

b) visually locate Telstra plant by hand digging or using non destructive water jet method (pot holing) where construction activities may damage or interfere with Telstra plant (see "Essential Precautions and Approach Distances" section for more information); and

c) contact Telstra's Plan Services (see below for details) if Telstra plant is wholly or partly located near planned construction activities.

DAMAGE TO TELSTRA'S NETWORK MUST BE REPORTED TO 132203 IMMEDIATELY.

The owner is responsible for all plant damage when works commence prior to obtaining Telstra plans, or failure to follow agreed instructions.
Telstra reserves all rights to recover compensation for loss or damage to its cable network or other property including consequential losses.

Important note: *The construction of Telstra's network dates back over many years. Some of Telstra's pits and ducts were manufactured from asbestos-containing cement. You must take care in conducting any works in the vicinity of Telstra's pits and ducts. You must refrain from in any way disturbing or damaging Telstra's network infrastructure when conducting your works. We recommend that before you conduct any works in the vicinity of Telstra infrastructure that you ensure your processes and procedures eliminate any possibility of disturbing, damaging or interfering in any way with Telstra's infrastructure. Your processes and procedures should incorporate appropriate measures having regard to the nature of this risk.*

EMERGENCY SITUATIONS - RECEIVING TELSTRA PLANS

Telstra's automated mapping system will provide a fast response for emergency situations. (faster than an operator can provide manually). Automated responses are normally available 24/7.

To receive a fast automated response from Telstra your request must -

- be a web request lodged at DBYD (www.1100.com.au) The request will be then forwarded directly to Telstra.
- contain your email address so you can receive the automated email response.
- be for the purposes of 'mechanical excavation' or other ground breaking DBYD activity. (requests with activity types conveyancing, planning & design or other non digging activities may not be responded to until the next business day).
- be for an area less than 350 metres in size to obtain a PDF map. (over 350 metres will default to DWF due to size)
- be for an area less than 2500 metres in size to obtain a DWF map

NATURAL DISASTERS

Natural Disasters include (amongst other things) earthquakes, cyclones, floods and tsunamis.

In the case of such events, urgent requests for plans or information relating to the location of Telstra network can be made directly to Telstra Network Integrity Team Managers as follows:

NSW - Joe Palucci 0419 496 015

QLD - Shaun Walliss 0419 638 150

VIC/TAS - David Povazan 0417 300 947

SA/NT/WA - Dave Ballard 0419 807 901

TELSTRA PLAN SERVICES

For all Telstra DBYD (Dial Before You Dig) map enquiries please contact Telstra Plan Services

email - **Telstra.Plans@team.telstra.com**

fax - **(02) 4961 3714**

phone - **1800 653 935** (for urgent, onsite or optic fibre enquiries)

Please note - to make an enquiry the plans must be current (within 60 days of issue). If your plans have expired you will need to submit a new request via DBYD.

ASSET RELOCATIONS

You are not permitted to relocate or alter any Telstra assets or network under any circumstance.
For all enquiries relating to the relocation of Telstra assets please phone
1800 810 443 or email F1102490@team.telstra.com

DATA EXTRACTION FEES

In some instances a data extraction fee may be applicable for the supply of Telstra information. Typically a data extraction fee may apply to large projects, requests to be supplied in non standard formats, excessive hardcopy printing or requests for non digging purposes. Further details can be obtained by contacting Telstra Plan Services.

PRIVACY NOTE

Your information has been provided to Telstra by DBYD to enable Telstra to respond to your DBYD request. Telstra keeps your information in accordance with its privacy statement entitled "Protecting Your Privacy" which can be obtained from Telstra either by calling 1800 039 059 or visiting our website at www.telstra.com.au/privacy

CONCERNING TELSTRA PLANS:

Please note the following:

- For plans of Telstra locations contact **Dial Before You Dig** at least 2 business days prior to digging. (www.1100.com.au)
- Fast response can be provided by Telstra if an email address is supplied. (If posted, this may take up to one week or longer to receive plans)
- Telstra plans and information provided are valid for 60 days from the date of issue.
- Telstra owns and retains the copyright in all plans and details provided in conjunction with the applicant's request. The applicant is authorised to use the plans and details only for the purpose indicated in the applicant's request. The applicant must not use the plans or details for any other purpose. The plans and details should be disposed of by shredding or any other secure disposal method after use.
- Telstra plans or other details are provided only for the use of the applicant, its servants, or agents. The applicant may not give the plans or details to other parties, and may not generate profit from commercialising the plans or details.
- Please contact Telstra Plan Services (see above for details) immediately should you locate Telstra assets not indicated on these plans.
- Telstra, its servants or agents shall not be liable for any loss or damage caused or occasioned by the use of plans and or details so supplied to the applicant, its servants and agents, and the applicant agrees to indemnify Telstra against any claim or demand for any such loss or damage.

Please ensure Telstra plans and information provided remains on-site at all times throughout your construction phase.

ESSENTIAL PRECAUTIONS and APPROACH DISTANCES:

NOTE: If the following clearances cannot be maintained, please contact Telstra Plan Services (see above for details) for advice on how best to resolve this situation.

1. On receipt of plans and sketches and before commencing excavation work or similar activities near Telstra's plant, **carefully locate this plant first** to avoid damage. Undertake prior manual exposure such as potholing when intending to excavate or work **closer** to Telstra plant than the following approach distances.

Where Telstra's plant is in an area where road and footpaths are well defined by kerbs or other features a minimum clear distance of 600mm must be maintained from where it could be reasonably presumed that plant would reside.

In non established or unformed reserves and terrain, this approach distance must be at least 1.5 metres.

In country/rural areas which may have wider variations in reasonably presumed plant presence, the following minimum approach distances apply:

a) Parallel to major plant: 10 metres (for IEN, optic fibre and copper cable over 300 pairs)
b) Parallel to other plant: 5 metres

NOTE: Even manual pot-holing needs to be undertaken with extreme care, commonsense and employing techniques least likely to damage cables. For example, orientate shovel blades and trowels parallel to the cable rather than digging across the cable.

If construction work is parallel to Telstra plant, then careful hand digging or using non destructive water jet method (pot-holing) at least every 5m is required to establish the location of all plant, hence confirming nominal locations before work can commence.

2. Maintain the following minimum clearance between construction activity and **actual location** of Telstra Plant.

Jackhammers/Pneumatic Breakers	*Not within 1.0m of **actual location**.*
Vibrating Plate or Wacker Packer Compactor	*Not within 0.5m of Telstra ducts.* *300mm compact clearance cover before compactor can be used across Telstra ducts.*
Boring Equipment (in-line, horizontal and vertical)	*Not within 2.0m of **actual location**.* *Constructor to hand dig or use non-destructive water jet method (pot-hole) and expose plant.*
Heavy Vehicle Traffic (over 3 tonnes)	*Not to be driven across Telstra ducts (or plant) with less than 600mm cover.* *Constructor to check depth via hand digging.*
Mechanical Excavators, Farm ploughing and Tree Removal	*Not within 1.0m of **actual location**.* *Constructor to hand dig or use non-destructive water jet method (pot-hole) and expose plant.*

All Telstra pits and manholes should be a minimum of 1.2m in from the back of kerb after the completion of your work.

All Telstra conduit should have the following minimum depth of cover after the completion of your work:-

Footway 450mm

Roadway 450mm at drain invert and 600mm at road centre crown

For clearance distances relating to Telstra pillars, cabinets and RIMs/RCMs please contact Telstra Plan Services (see above for details).

FURTHER ASSISTANCE:

Assistance can be obtained by contacting Telstra Plan Services

Where on-site location is provided, the owner is responsible for all hand digging or use non-destructive water jet method (pot-holing) to visually locate and expose Telstra plant.

If plant location plans or visual location of Telstra plant by digging reveals that the location of Telstra plant is situated wholly or partly where the owner plans to work, then Telstra's Network Integrity Group must be contacted through Telstra Plan Services to discuss possible engineering solutions.

NOTE:

If Telstra relocation or protection works are part of the agreed solution, then payment to Telstra for the cost of this work shall be the responsibility of the principal developer or constructor. The principal developer or constructor will be required to provide Telstra with the details of their proposed work showing how Telstra's plant is to be accommodated and these details must be approved by the Regional Network Integrity Manager prior to the commencement of site works.

RURAL LANDOWNERS - IMPORTANT INFORMATION

Where Telstra owned cable crosses agricultural land, Telstra may provide a once-off free on-site electronic cable location. The Telstra Plan Services operator will provide assistance in determining whether a free on-site location is required.

Please note:

- The exact location, including depth of cables can only be verified by pot holing, which is not covered by this service.
- This service is only available to assist private rural land owners.
- This service covers one hour on-site only. Additional time can be purchased directly from the Accredited Plant Locator.

For further information including terms and conditions, please contact Plan Services on **1800 653 935**.

LEGEND

Exchange
(major cable present)

Footway access chamber
(can vary from 1-lid to 12-lid)

Roadway access chamber

or Pillar/cabinet
(above the ground / free standing)

Above ground complex equipment housing (eg RIM)
Please Note: This equipment is powered by 240V electricity.

PT Public telephone
Please Note: This equipment is powered by 240V electricity.

Direct buried cable

Cable jointing pit
(number indicating pit type)

Buried cable jointing pit
(number indicating pit type)

Elevated cable joint
(above ground joint on buried cable)

Cable loop (direct buried)

Telstra Plant in shared utility trench

Aerial Cable
(above ground)

Aerial Cable
(attached to joint use pole e.g. power)

SMOF Optical fibre cable direct buried

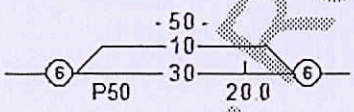
or or or P100
Single to multiple round conduit
Configurations 1, 2, 4, 9 respectively
(Attached text denotes conduit type and size)

or or or E85
Multiple square conduit
Configurations 2, 4, 9 respectively
(Attached text denotes conduit type and size)

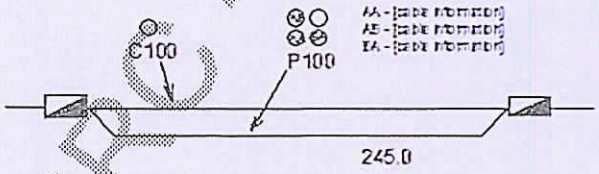
Some examples of conduit type and size:
A - Asbestos cement, P - PVC / plastic, C - Concrete, GI - Galvanised iron, E - Earthenware.
Conduit sizes *nominally* range from 20mm to 100mm

P50	50mm PVC conduit
P100	100mm PVC conduit
A100	100mm asbestos cement conduit
E 85	85mm square earthenware conduit

Some examples of how to read Telstra plans:



One 50mm PVC conduit (P50) containing a 50-pair and a 10-pair cable between two 6-pits, 20.0m apart, with a direct buried 30-pair cable along the same route.



Two separate conduit runs between two footway access chambers (manholes) 245m apart. A nest of four 100mm PVC conduits (P100) containing assorted cables in three ducts (one being empty) and one empty 100mm concrete duct (C100) along the same route.

WARNING: Telstra's plans show only the presence of cables and plant. They only show their position relative to road boundaries, property fences etc. at the time of installation and Telstra does not warrant or hold out that such plans are accurate thereafter due to changes that may occur over time.
DO NOT ASSUME DEPTH OR ALIGNMENT of cables or plant as these vary significantly.
The customer has a DUTY OF CARE when excavating near Telstra cables and plant. Before using machine excavators TELSTRA PLANT MUST FIRST BE PHYSICALLY EXPOSED BY SOFT DIG (potholing) to identify its location.
Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.

ELECTRONIC PLANS - PDF AND DWF MAPS

If you have received Telstra maps via email you will have received the maps as either a PDF file (for smaller areas) or DWF file (for larger area requests). If you are unable to launch any one of the softcopy files for viewing and printing, you may need to download and install one or more of the free viewing and printing products such as Adobe Acrobat Reader (for PDF files) or Autodesk Design Review (for DWF files) available from the internet.

PDF files

PDF is the default softcopy format for all requests for areas up to approx *350m in length (*depends on geographic location of request). The PDF file is formatted to A3 portrait sheet however it can be printed on any size sheet including from A4 to AO, either as the full sheet or selected areas to suit needs and legibility. (to print a selected area zoom up and print "current view"). If there are multiple layers of Telstra network you may receive up to 2 sheets in the single PDF file attachment supplied. There are three types or layers of network normally recorded - local network, mains cables or a combined layer of local and mains (usually displayed in rural or semi rural areas). If mains cable network is present in addition to local cables (i.e. as separate layer in a particular area), the mains will be shown on a separate sheet. The mains cable information should be read in conjunction with the local cable information.

DWF files

This is the default softcopy format for all requests for areas that are over 350m in length. Maximum length for a DWF automated response is approx 2500m - depending on geographic location of request (manually-processed plans may provide larger coverage). The DWF files differ from PDF in that DWF are vector files made up of layers that can be turned on or off and are not formatted to a specific sheet size. This makes them ideal for larger areas and for transmitting over email etc.

How to view Telstra DWF files -

Telstra DWF files come with all layers turned on. You may need to turn individual layers on or off for viewing and printing clarity. Individual layer names are CC (main cable/conduit), DA (distribution or local area network) and sometimes a combined layer - CAC. Layer details can be viewed by either picking off the side menu or by selecting 'window' then 'layers' off the top menu bar. Use 'layers' to turn individual layers off or on. (double click or right click on layer icon.)

How to print Telstra DWF files -

DWF files can be printed on any size sheet. They can be printed in their entirety or by selected areas of interest. Some DWF coverage areas are large and are not suited to printing legibly on a single A4 sheet - you may need several prints if you only have an A4 printer. Alternatively, an A3, A1 or larger printer could be used. To print, zoom in or out and then, by changing the 'print range' settings, you can print what is displayed on your screen to suit your paper size. If you only have a small printer, e.g. A4, you may need to zoom until the text is legible on your screen for it to be legible on the print. (which is why you may need several prints). To print what is displayed on your screen the 'view' setting should be changed from 'full page' to 'current view'. The 'current sheet' setting should also be selected. You may need to print layers separately for clarity and legibility. (details above on how to turn layers on or off)

How to change the background colour from white to black (when viewing) Telstra DWF files -

If using Autodesk Design Review the background colour can be changed by selecting "Tools" then "options" then "sheet". Tick the box "override published paper colors" and select the colour required using the tab provided.

Telstra Automated Mapping System

Telstra provides an automated plan response for the majority of DBYD requests received.

Requestors must supply a current email address on their request to DBYD and must also be able to accept a standard format of PDF or DWF. An automated response can be provided much faster than the alternative of a mailed hardcopy, and can avoid unnecessary delays in waiting for plans to arrive. Being softcopy, it can easily be sent directly to a worksite and can be available 7 days a week. The automated system can be configured for individual requestors to receive either PDF/DWF (where small requests are PDF and larger requests are DWF) or, alternatively, all in DWF (both small and large requests). Please contact Plan Services for further details or to have your preferences updated. Please note that all requests over *350m (approx.) in size can only be supplied in DWF format and there are size limits on what can be provided. (* actual size depends on geographic location of requested area)

ACCREDITED PLANT LOCATORS (For your area)

On-site assistance should be sought from an Accredited Plant Locator (Telstra accredited), if the telecommunications plant cannot be located within 2.5 metres of the locations indicated on the drawings provided.

On-site advice should be obtained from the Telstra Accredited Plant Locator who is highly skilled in locating Telstra plant. In the case where Telstra plant is outside a recognised road reserve Telstra recommends that Telstra Plan Services are contacted for assistance prior to engaging an Accredited Plant Locator.

Telstra does not permit external parties (non-Telstra) to conduct work on our network. Only Telstra staff or Telstra contractors are allowed to enter our manholes, open our pits, ducts, etc.

Please note it is a criminal offence under the *Criminal Code Act 1995* (Cth) to tamper or interfere with communication facilities owned by a carrier. Heavy penalties may apply for breach of this prohibition, and any damages suffered, or costs incurred by Telstra as a result of any such unauthorised works may be claimed against you.

Should your projects require Telstra network location, any asset Plant Locator used MUST be Telstra accredited to be able to access and locate Telstra network. (a list of which is provided with the Dial Before You Dig plans). Alternatively you may seek your own Telstra accreditation through our registered training partner Coates Hire Training which is the only approved training provider for Plant Location accreditation for Telstra's network. You may contact Coates Hire Training on

1300 657 867 or visit *www.coateshire.com.au*

For the assistance of customers an accredited Asset Plant Locator can perform any of the following activities if requested to do so by the owner:

- review Telstra's plans to assess the approximate location of Telstra plant;
- advise owners of the approximate location of Telstra plant according to the plans;
- advise owners of the best method for locating Telstra plant;
- advise owners of the hazards of unqualified persons attempting to find the exact location of Telstra plant and working in the vicinity of Telstra plant without first locating its exact position; and
- perform trial hole explorations by hand digging (pot-holing) to expose Telstra plant with a high degree of skill, competence and efficiency and utilising all necessary safety equipment.

A list of Accredited Plant Locators operating in your area is attached. Accredited Plant Locators are certified by Telstra to perform the tasks listed above. Owners may engage Accredited Plant Locators to perform these services, however Telstra does not give any warranty in relation to these services that Accredited Plant Locators are competent or experienced to perform any other services.

The attached list provides the names and contact details for Accredited Plant Locators who service your area and can provide you with assistance in locating Telstra plant on site. These organisations have been able to satisfy Telstra that they have a sound knowledge of telecommunications plant and its sensitivity to disturbance; appropriate equipment for locating telecommunications plant and competent personnel who are able to interpret telecommunications plans and sketches and understand safety issues relevant to working around telecommunications plant. They are also able to advise you on the actions which should be taken if the work you propose will/could result in a relocation of the telecommunications plant and/or its means of support.

We recommend that you engage the assistance of one of these Accredited Plant Locators as a step towards discharging your Duty of Care obligations when seeking the location of Telstra's telecommunications plant.

Please Note:

- Optic fibre cable locations must be performed by a locator with Telstra optic fibre cable location accreditation. (not all copper accredited locators have optic fibre accreditation). The locators with additional optic fibre cable location accreditation are indicated by a 'yes' in the column headed 'Fibre'.

- Each Accredited Plant Locator is NOT permitted to provide depth of communications plant unless physically exposed by hand digging.
- The details of any contract, agreement or retainer for site assistance to locate telecommunications plant shall be for you to decide and agree with the organisation engaged. Telstra is not a party to any contract entered into between an owner and an Accredited Plant Locator. The Accredited Plant Locators are able to provide guidance concerning the extent of site investigations required.
- Payment for the site assistance will be your responsibility and payment details should be agreed before the engagement is confirmed.
- Telstra does not accept any liability or responsibility for the performance of or advice given by an Accredited Plant Locator. Accreditation is an initiative taken by Telstra towards the establishment and maintenance of competency standards. However, performance and the advice given will always depend on the nature of the individual engagement.
- Each Accredited Plant Locator has been issued with a certificate which confirms the Accreditation. Every 2 years Telstra will reassess the accreditation and where appropriate will issue a letter confirming the accreditation for the next 2 years. You have the right to request the organisation you engage to show evidence of their ID card.
- Neither the Accredited Plant Locator nor any of its employees are an employee or agent for Telstra and Telstra is not liable for any damage or loss caused by the Accredited Plant Locator or its employees.
- The attached list contains the current names and contact details of Accredited Plant Locators who service your area, however, these details are subject to change.

IDEA FOR CONSIDERATION:

Telstra offer free Cable Awareness Presentations & Advanced Cable Reading Presentations, if you believe you or your company would benefit from this offer please contact Network Integrity on 1800 810 443 or F1102490@team.telstra.com

Telstra Accredited Plant Locators - Queensland Regional

Regions - Far North, North, Central, South

If a physical location is required please contact a Telstra accredited locator from the list below. (fees apply)

*Optic fibre cable locations must be performed by a locator with Telstra optic fibre location accreditation. Locators with Telstra optic fibre cable location accreditation are indicated by a 'yes' in the 'Fibre' column.

Far North Qld

Name & areas covered	*Fibre	Contact details
Aussie Drill Kings Pty Ltd - *Smithfield.* *Cairns & Remote Areas*		(07) 4037 0604 or 0420 300 656 Fax: (07) 07 4037 0634
Barry & Jill Henderson Plumbing - *Mareeba* *Mareeba, Mt Molloy, Dimbulah, Atherton*	Yes	(07) 4092 2756 or 0419 796 434 Fax: (07) 4092 2756
BJS Plumbing & Civil Contracting - *Atherton Tablelands*		0419 975 928 Fax: (07) 4091 3239
Cairns Cable Locators - *Cairns*	Yes	0447 562 283
Cairns Underground Service Locators - *Earlville* *Cairns, Cardwell to Cape York*		0402 234 967 Fax: (07) 4054 4797
Chris Page Pipe & Cable Pty Ltd - *Thuringowa* *Townsville, Ingham, Cardwell, Ayr, Charters Towers, Bowen, Home Hill and surrounding areas*	Yes	Ph: 07 4788 8976 or 0419 720 278 Fax (07) 4788 8397
IFind PIPES 'N' CABLES Pty Ltd – *Winnellie* *WA Kimberly region, all of the NT & the QLD gulf region*		0419 612 476 Fax: 08 8941 2615 Email k.phelps1970@hotmail.com
NQ Civil Pty Ltd – *Gordonvale*		0458 561 572 (07) 4056 1984
Online Communications - *Yungaburra* *All Areas*	Yes	0428 775 655
Rex Petersen's Bobcat Hire - *Mareeba*		0407 159 727 Fax (07) 4092 7659
Samark North Pty Ltd – *Bungalow*		Ph: (07) 4054 6511 Fax (07) 40546533
Shamrock Civil - *Birkdale*		(07) 3727 1100
TDC Water/Vacuum Truck Hire – *Elimbah*		Ph: (07) 5496 7194 or 0428 648 149 Fax: (07) 5496 7194 Email: charden@westnet.com.au

Name & areas covered	*Fibre	Contact details
Techdrill Civil Service Pty Ltd – *Upper Coomera*		(07) 5573 1578 or 0407 319 997 Fax (07) 5665 7233

North Qld

Name & areas covered	Fibre	Contact details
'A one' Locations & Consulting - *Wulgurn, Townsville Townsville, Thuringowa, Ingham, Burdekin, Bowen, Charters Towers and their surrounding Districts*	Yes	(07) 4778 1413 or 0407 405 845 Fax (07) 4778 1461
A.U.S. Locators Pty Ltd - *Forest Lake*		(07) 3271 6494 or 0408 857 024 ausneil@msn.com
Aussie Drill Kings Pty Ltd - *Smithfield Cairns & Remote Areas*		(07) 4037 0604 or 0420 300 656 Fax: (07) 07 4037 0634
Chris Page Pipe & Cable Pty Ltd - *Thuringowa Townsville, Ingham, Cardwell, Ayr, Charters Towers, Bowen, Home Hill and surrounding areas*	Yes	Ph: 07 4788 8976 or 0419 720 278 Fax (07) 4788 8397
Ernst Communications P/L - *Cloncurry*		0429 421 746 Fax: (07) 4742 1747)
NQ Civil Pty Ltd - *Gordonvale*		0458 561 572 (07) 4056 1984
QDP Directional Boring - *Garbutt*		(07) 4728 5569
Samark North Queensland Pty Ltd - *Bungalow*		(07) 4054 6511 Fax (07) 4054 6533
SaraJaw Pty Ltd - *Hermit Park*		0434 146 564 Fax (07) 4779 9638
Shamrock Civil - *Birkdale*		(07) 3727 1100
Subsite Locators - *Mackay Bowen Basin Mines*		0401 444 911
Terrascan - *Mackay Central Qld*		(07) 4952 5332 or 0422 991 064 Fax: (07) 4952 6701
TDC Water/Vacuum Truck Hire - *Elimbah*		(07) 5496 7194 or 0428 648 149 Fax (07) 5496 7194 Email: charden@westnet.com.cu
Techdrill Civil Services Pty Ltd – *Upper Coomera*		(07) 5573 1578 or 0407 319 997 Fax (07) 5665 7233

Name & areas covered	Fibre	Contact details
Vernon Constructions Pty Ltd - *Bohle* *Townsville*		(07) 4774 3131 or 0417 776 523 Fax (07) 4774 3151 Email: admin@vernonconstructions.com.au

Central Qld

Name & areas covered	Fibre	Contact details
1300 Locate Pty Ltd - *Caboolture*		07 5499 3350 or 0407 570 441 Fax (07) 5499 3353
ABC Locators Pty Ltd - *Toowoomba* *Darling Downs, Southern Downs, Burnett, Lockyer Valley, Brisbane Valley, South East QLD, Southern QLD, Northern NSW*	Yes	(07) 4632 3499 or 0407 423 499
Abletech Underground - *Doonan* *South East Qld, Northern NSW, Rockhampton, Gladstone, Roma, Goondiwindi, Toowoomba, Charleville, Cunnamulla*		(07) 5449 1382 or 0418 511 767 Fax (07) 5471 0872
Accredited Cable Locating - *Yeppoon* *Central Queensland - all areas including Mines area.*		(07) 4939 5615 0417 616 314
A.U.S. Locators Pty Ltd - *Forest Lake*		(07) 3271 6494 or 0408 857 024 ausneil@msn.com
Bsure Locations - *Bundaberg*		0488 520 688
Capvac - *Rockhampton*		0418 579 612 Fax: (07) 4927 9544
Central Qld Cable & Pipe Locations - *Gladstone* *Bundaberg to Mackay, West to Longreach*	Yes	(07) 4978 5571 or 0427 311 317 Fax (07) 4978 7571
Copp & Co Plant Hire - *Proserpine* *Bowen, Proserpine, Whitsundays and surrounding areas*		(07) 4945 3169 or 0409 776 277 Fax: (07) 4945 4783
Find and Seek Locating - *Coomera* *All Areas, Remote Destinations*	Yes	0407 510 289
Georadar Australia Pty Ltd - *Emerald* *Alpha, Anakie, Barcaldine, Blackall, Blackwater, Bluff, Capella, Clermont, Comet, Dingo, Dysart, Emerald, Gem Fields, Hail Creek, Middlemount, Moranbah, Nebo, Oaky Ck, Rolleston, Roma, Rubyvale, Sapphire, South Blackwater, Springsure, Tambo, Tierra, Tieri*		0411 725 724 payney@georadar.net.au www.georadar.net.au
Hydrovac Excavations (Aust) Pty Ltd - *Morayfield*		(07) 5433 1811 Fax: (07) 5433 1911
Jackos Back-O Hire - *Pleystone* *Mackay & District Areas*		(07) 4954 0760 or 0429 158 788 Fax: (07) 4954 0760
Jal-Cor Communications Solutions - *Eimeu*		(07) 4954 9905 or 0438 556 096 Fax: (07) 4954 9844

Name & areas covered	Fibre	Contact details
Outback Vac - *Longreach* *Western Queensland*	Yes	(07) 4658 0013 or 0429 820 702 Fax: (07) 4658 1003
Safe Dig Vacuum Excavation - *Mackay*		0408 880 262
Shamrock Civil - *Birkdale*		(07) 3727 1100
Subsite Locators - *Mackay* *Bowen Basin Mines*		0401 444 911
Terrascan - *Mackay* *Central Qld*		(07) 4952 5332 or 0422 991 064 Fax: (07) 4952 6701
TDC Water/Vacuum Truck Hire - *Elimbah*		(07) 5496 7194 or 0428 648 149 Fax: (07) 5496 7194 charden@westnet.com.au
Techdrill Civil Services Pty Ltd – *Upper Coomera*		(07) 5573 1578 or 0407 319 997 Fax: (07) 5665 7233
Vac-U-Digga Pty Ltd - *Ambrose* *Bundaberg, Gladstone, Rockhampton*	Yes	1300 822 834 Mob: 0447 466 718 Fax: 07 3807 5599

South Qld

Name & areas covered	Fibre	Contact details
1300 Locate Pty Ltd - *Caboolture*		07 5499 3350 or 0407 570 441 Fax (07) 5499 3353
AAA Locating - *Toowoomba* *Darling Downs, Western Downs, Lockyer Valley, Northern NSW, Burnett, Brisbane Valley, Maryborough, Gladstone*	Yes	0418 718 449 Fax (07) 4630 1748
ABC Locators Pty Ltd - *Toowoomba* *Darling Downs, Southern Downs, Burnett, Lockyer Valley, Brisbane Valley, South East QLD, Southern QLD, Northern NSW*	Yes	(07) 4632 3499 or 0407 423 499
Abletech Underground - *Doonan* *South East Qld, Northern NSW, Rockhampton, Gladstone, Roma, Goondiwindi, Toowoomba, Charleville, Cunnamulla*		(07) 5449 1382 or 0418 511 767 Fax (07) 5471 0872
Accurate Service Locators - *Morayfield*		(07) 5498 5020 or 0413 742 911 Fax (07) 5498 5402
Ace Cable Locations - *Maryborough* *Maryborough, Hervey Bay, Childers, Biggenden, & Wide Bay-Burnett*	Yes	0431 517 837 Fax: (07) 4122 4428
All Underground Pipe & Cable Location - *Beerwah*	Yes	0437 687 709

Name & areas covered	Fibre	Contact details
Alpha Plant Locations - *Camira* *SE Qld, S Qld, NSW - NTH*	Yes	0429 968 812 Fax: (07) 3818 6595
Anton Seng Plumbing - *Toowoomba* *Toowoomba, the Downs region*		(07) 4634 2427 0408 716 821
A.U.S. Locators Pty Ltd - *Forest Lake*		(07) 3271 6494 or 0408 857 024 ausneil@msn.com
Bsure Locations - *Bundaberg*		0488 520 688
Cardno Australian Underground Services - *Loganholme*		(07) 3209 8877 or 1300 224 664 or 0408 705 341 Fax: (07) 3806 5711 cardnoaus@cardno.com.au
D. C. Locators Pty Ltd - *Redbank Plains* *Ipswich, Boonah, Gatton, Aratula, Beaudesert, Esk, Laidley*	Yes	(07) 3389 2313 or 0439 379 741 Fax (07) 3424 2370
Dingo Home & Rural Services - *Moogerah* *South East Queensland, Boonah, Beaudesert, Warwick, Ipswich, Amberley*	Yes	(07) 5463 5504 or 0418 769 149
Find and Seek Locating - *Coomera* *All Areas, Remote Destinations*	Yes	0407 510 289
Hydrovac Excavations (Aust) Pty Ltd - *Morayfield*		(07) 5433 1811 Fax: (07) 5433 1911
Ian Johnson Leak Detection - *Highland Park*		0427 305 773
IRT Plumbing & Locating Pty Ltd - *Bribie Island*	Yes	(07) 5497 6345 or 0417 668 069
Katacole - *Greenbank*		(07) 3297 6090 or 0438 873 683 Fax: (07) 3297 7068
Lambert Locations - *Gold Coast* *South East Queensland, Northern NSW*		1300 150 035 or 0418 150 035
Locom Locations - *Nambour* *Brisbane, Sunshine Coast, Gympie*		0439 983 520 Fax (07) 5441 3168
Look-N-Locate - *Ashgrove*		0418 745 562 Fax: (07) 3366 0233
Lost Pipe & Cable Pty Ltd - *Everton Park*		0438 747 500
M & K Farmer Enterprises - *Goondiwindi*	Yes	(07) 4671 2443 or 0429 622 897
National Tapping Service Pty Ltd - *Ashmore*		(07) 5564 7788 Fax: (07) 5564 9931
Network Locations - *Gympie* *Cooroy, Eumundi, Gympie, Maryborough, Pomona, South Burnett*		0407 758 165
Orbital Underground Service Location - *Morayfield*		1300 672 482 or 0423 006 286 Fax (07) 5497 8384

Name & areas covered	Fibre	Contact details
Outback Vac - *Longreach* *Western Queensland*	Yes	(07) 4658 0013 or 0429 820 702 Fax: (07) 4658 1003
Patriot Tankers - *Ormeau* *Gold Coast, Brisbane, Ipswich, Sunshine Coast*		1800 Patriot or 0414 493 904 Fax: (07) 3287 5987
Pipeline Locators Australia Pty Ltd - *Greenbank*		(07) 3200 0340 or 0418 183 858 Fax: (07) 3200 0170
Protec Cable Locations - *Nambour* *Nambour, Sunshine Coast & Hinterland, Mary Valley, Gympie*		0417 607 515 Fax (07) 5441 7048
Safe Dig Vacuum Excavation - *Greenbank*		0439 220 076 or 0408 880 262 Fax: (07) 3297 6639
Scan Man Pty Ltd - *Towen Mountain* *All of Qld*		1800 SCANMAN (1800 722 6626) or 0420 307 226 Emails: info@scanman.com.au www.scanman.com.au
Shamrock Civil - *Birkdale*		(07) 3727 1100
Subsite Locators – *Mackay* *Bowen Basin Mines*		0401 444 911
TDC Water/Vacuum Truck Hire - *Elimbah*		(07) 5496 7194 or 0428 648 149 Fax: (07) 5496 7194 charden@westnet.com.au
Techdrill Civil Services Pty Ltd - *Upper Coomera*		(07) 5573 1578 or 0407 319 997 Fax: (07) 5665 7233
The Johnson Family Trust - *Mudgeeraba* *Northern NSW & South East QLD*		(07) 5530 5773 or 0407 555 167
Tipper Vacuum Excavations - *Park Ridge South*		0408 855 617 Fax: 07 3297 0009
Utility Location Services – *Stapylton* *Brisbane Gold Coast & Sunshine Coast*		(07) 3907 3552 or 0414 775 500 Fax: (07) 3807 9899
Vac-U-Digga Pty Ltd - *Beenleigh* *Gold Coast, Brisbane, Toowoomba, Dalby, Chinchilla, Roma, Sunshine Coast*	Yes	1300 822 834 Mob: 0447 466 288 Fax: 07 3807 5599

WIDE BAY water
CORPORATION

31 Ellengowan St, PO Box 5499
Hervey Bay Queensland 4655
t 1300 808 888 f 07 4125 5118
e wbw@widebaywater.qld.gov.au
w www.widebaywater.qld.gov.au
abn 98 380 729 010

Infrastructure Location Enquiry

Customer Details

Contact:	Mr Robin Wylucki
Company:	Lanson Civil P/L
Postal Address:	Lot 36 Lot 26 Navelina Ct Dundowran 4655
Phone (W):	0741942100
Phone (H):	
Mobile:	0457796917
Fax:	0741942122
Email:	rob.wylucki@lansoncivil.com.au

Enquiry Details

Search Title:	Dial Before You Dig (DBYD)
SEQ ref:	31309025
Request Date:	1/11/2013 12:36:00 PM
Address:	Kingfisher Pde, Toogoom
Activity:	Mechanical Excavation
Commencement:	6/11/2013
Completion:	31/12/2013

RE: Request for location of Wide Bay Water Corporation underground infrastructure, Dial Before You Dig (DBYD) Reference: SEQ# 31309025 - Kingfisher Pde, Toogoom

Dear Mr Robin Wylucki

In response to your above enquiry, based on the current information available to Wide Bay Water Corporation (WBWC), the attached map/s provide the approximate location of any underground water and/or sewer infrastructure that WBWC is aware of within the boundary of your enquiry.

Please note the attached PDF map/s will not show water or sewer service connection pipework to properties.

WARNING - Due to the nature of WBWC underground infrastructure and the age of some pipes and records, it is not considered possible to ascertain the precise location of all WBWC infrastructure from supplied records. The map/s are indicative only and WBWC does not guarantee that the information shown is accurate and accepts no responsibility for any inaccuracy.

It is your responsibility to locate any WBWC underground infrastructure by careful hand digging or pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

WIDE BAY WATER CORPORATION WILL SEEK COMPENSATION FOR ALL LOSS CAUSED BY DAMAGE TO ITS INFRASTRUCTURE.

For water or sewer emergencies, phone 4194 7600.

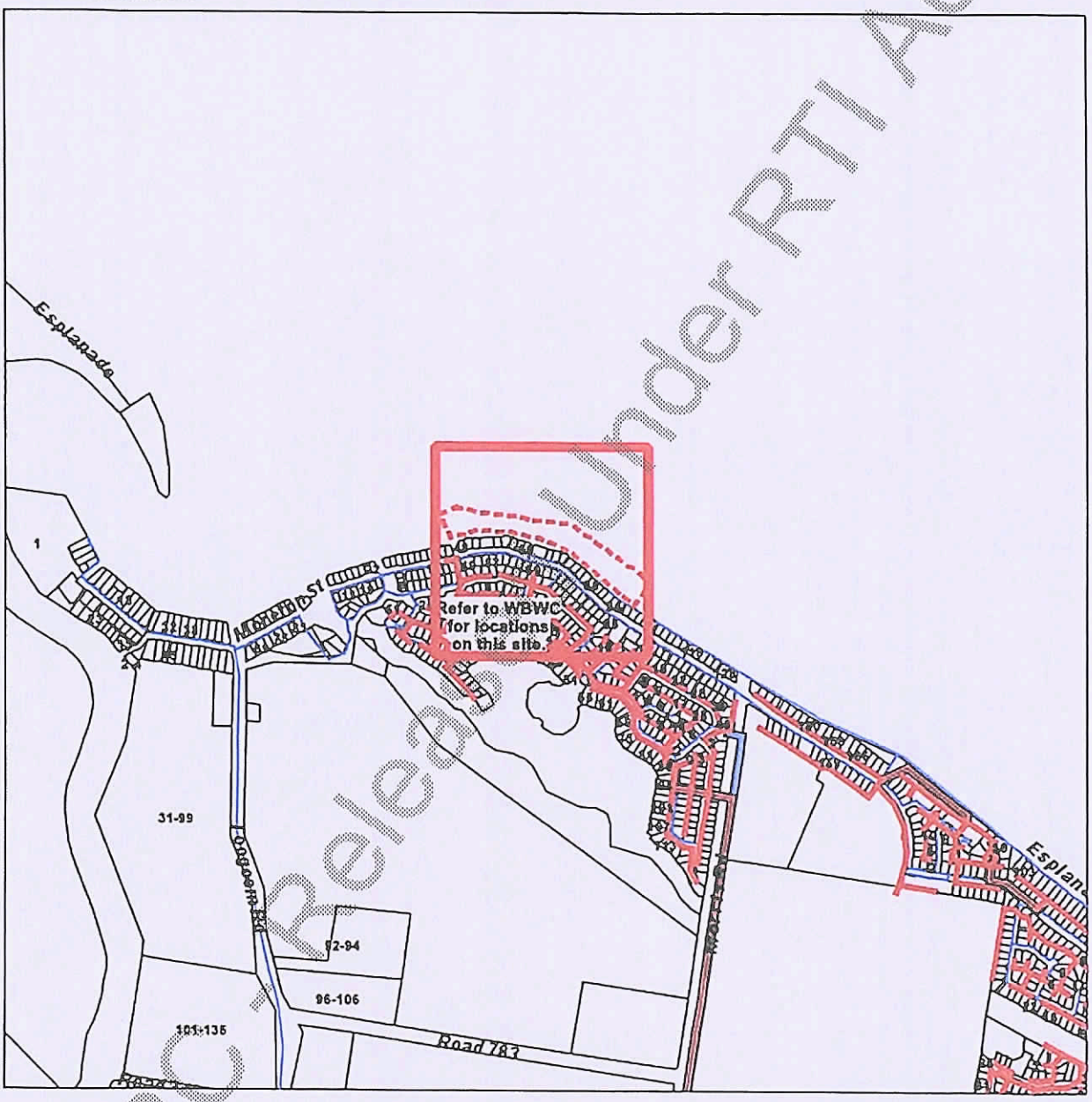
The attached map is valid for 30 days. If this timeframe has elapsed, please request a new map.

Daniel Griffiths
Customer Service Officer
t 07 4194 7615
e daniel.griffiths@widebaywater.qld.gov.au

WIDE BAY water
CORPORATION
29-31 Elengowan St
Urangan, Hervey Bay, Qld
Ph 1300 808 888 Fax 07 4125 5118
www.widebaywater.qld.gov.au

This map is not a precise survey document. The accuracy of the information shown here is not guaranteed and may not show all water or sewer service connection pipework to properties.
It is your responsibility to locate WBWC underground infrastructure by careful hand digging or pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.
Wide Bay Water Corporation will seek compensation for all loss caused by damage to it's infrastructure
This map is valid for 30 days from the date of issue. Request a new map if the expiry date has passed

Map Expiry Date: 01 Dec 2013



WBWC Infrastructure Locations
Key Map
SEQ# 31309025 - Kingfisher Pde, Toogoom

For **WATER OR SEWER EMERGENCIES - 07 4194 7600**

water today • water tomorrow

WIDE BAY water
CORPORATION
29-31 Ellengowan St
Urangan, Hervey Bay, Qld
Ph 1300 808 888, Fax 07 4125 5118
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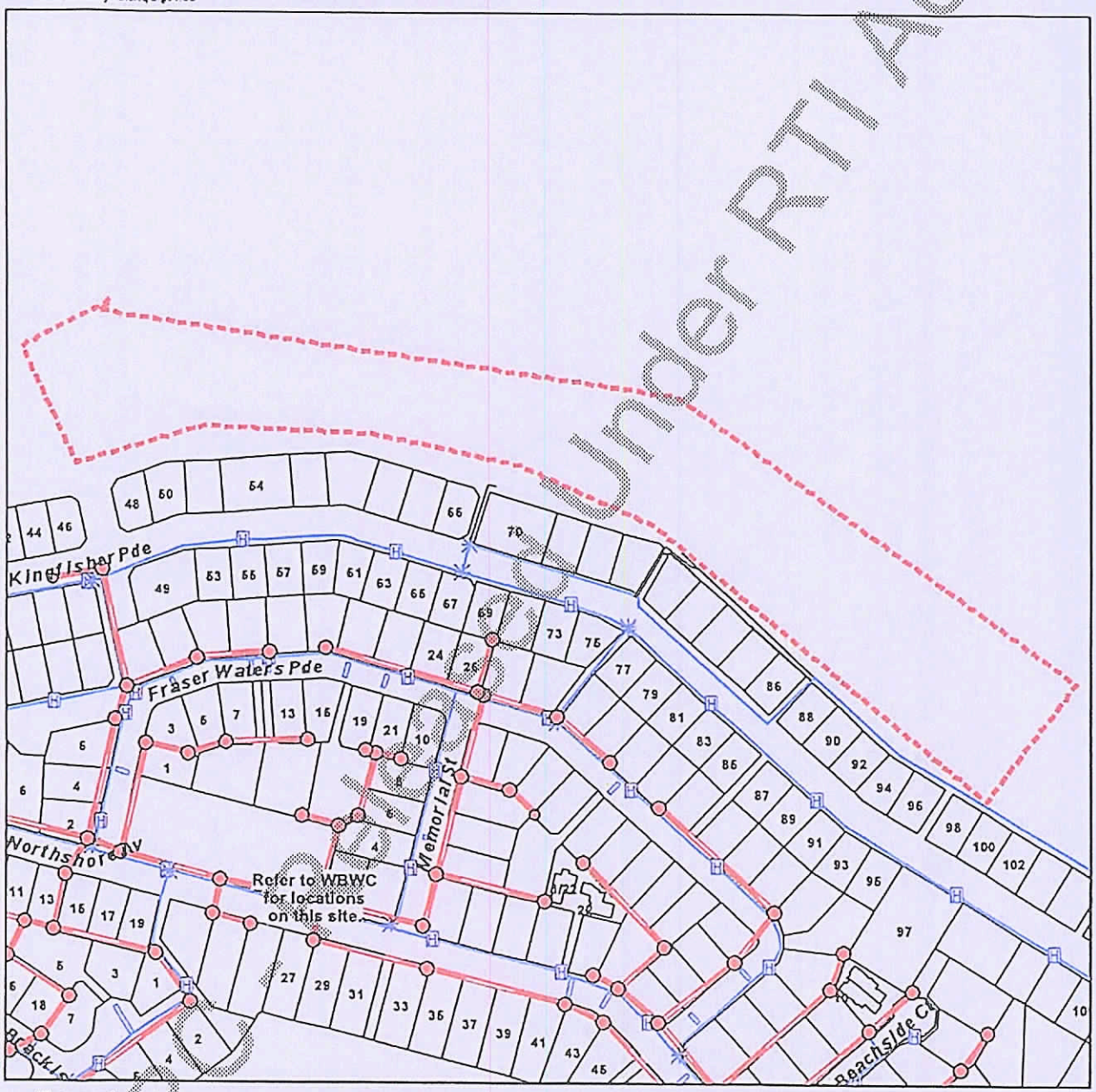
This map is not a precise survey document. The accuracy of the information shown here is not guaranteed and may not show all water or sewer service connection pipework to properties.
It is your responsibility to locate WBWC underground infrastructure by careful hand digging or pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.
Wide Bay Water Corporation will seek compensation for all loss caused by damage to it's infrastructure.
This map is valid for 30 days from the date of issue. Request a new map if the expiry date has passed.

Map Expiry Date: 01 Dec 2013



WBWC Infrastructure Locations
SEQ# 31309025
Kingfisher Pde, Toogoom

For **WATER OR SEWER EMERGENCIES - 07 4194 7600**

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26 Navelna Ct
Dundowran Qld 4655
ABN 77 113 061 943

CONSTRUCTION SAFETY PLAN

KINGFISHER PARADE TOOGOOM SEAWALL
#CORP 01-13/14

TABLE OF CONTENTS

1. Project Description

Construction Site Address	KINGFISHER PARADE, TOOGOOM	
Type of Construction Work	CONSTRUCTION OF ROCK ARMOUR SEAWALL	
Health & Safety Officer	YES ☒ NO ☐	Name: Mr Rob Wylucki
Health & Safety Committee	YES ☐ NO ☒	Committee Contact:
Duration of works	Start Date: TBA	Est Completion Date:
Hazards/Risks	See appendix 'Hazard/Risk Register'	
Inductions		
Traffic Management	Traffic Management Plan(s) required? YES ☒ NO ☐ If 'YES', see appendix 'Traffic Management Plan'	
Hazardous Substances/ Dangerous Goods	Exposure to hazardous substances will be controlled as described in Work Method Statements. See appendix 'Hazardous Substance Register'	

Common Plant	Maintenance checks

Signature of Principal Contractor	

2. Authorities and Responsibilities

Project Manager Responsibilities	The Project Manager is responsible for identifying hazards connected with the work at the planning stage and for approving control measures to mitigate the risks associated with those hazards.
Site Supervisor Responsibilities	As a person in control of a workplace, the Site Supervisor has the following legal obligations: • to ensure the risk of injury or illness from a workplace is minimised for persons coming onto the workplace to work; • to ensure the risk of injury or illness from any plant or substance provided by the person for the performance of work by someone other than the person's workers is minimised when used properly; • to ensure there is appropriate, safe access to and from the workplace for persons other than the person's workers. In order to meet these obligations, the Site Supervisor shall ensure that control measures outlined in Work Method Statements and Safe Operating Procedures are properly implemented.
Self-employed persons	Self-employed persons (subcontractors) have responsibility to: • Ensure his or her own safety and the safety of others is not affected by the way the work is performed; • Submit a current work method statement in accordance with the current WH&S Act and Regulations when requested by the Principal Contractor; • Ensure that all work performed complies with their Work Method Statements.
Workers and others	Workers and others (visitors) have responsibility to: • Comply with all safety instructions by the employer / principal contractor at the workplace. • Not place at risk the WH&S of any person at the workplace • Not willfully or recklessly interfere with or misuse anything provided for the WH&S • Not willfully injure themselves • Use PPE if the equipment is provided by the employer and the worker has been properly instructed in its use • If a worker considers that PPE is necessary to safely undertake a job, or required by law, or if the worker has not been properly instructed in the use of any safety equipment, the worker is under an obligation to immediately bring such concern to the attention of the relevant employer.

3. Site Rules

- All personnel carry out their duties in a safe and appropriate manner to minimise the potential risk of accidents or injuries to the workforce and the general public.
- Signage providing direction in relation to hazardous activities and PPE must be obeyed.
- Safe access must be maintained to all work areas.
- Timber ramps must be appropriately constructed and safe to use. Single scaffold planks and unsupported plywood sheets shall not be used as access ramps.
- Barricades are to be erected around all excavations.
- All portable electric tools and associated devices shall be tested and tagged 3 monthly.
- Extension leads must be adequate to carry the required current. Extension leads must not be joined together. No double adapters are to be used. All leads are to be placed in positions where they are protected from damage.
- Extension leads are to be connected to power boxes through the openings in the bottom, and secured to the insulated tie-bar.
- Helmets must be worn in all of the following cases:
    - When working in trenches or structures deeper than 1.5 metres
    - When working together with a machine that is able to rotate, lift, carry or load trucks such as excavators, backhoes, track loader, front end loader, crane or forklift. Anybody approaching these machines to talk to the assisting employees or the operator shall wear a helmet.
    - When working under overhead structures such as bridges, buildings or where material may fall from overhead.
    - When working in designated areas where the wearing if helmets is mandatory and sign posted.
    - While engaged in blasting operations
    - Wherever it is a specified condition from the client or authority
- All personal, including visitors, must wear safety footwear within the construction site.
- All personal, including visitors, must wear high visibility clothing or safety vests within the construction site.
- Respiratory protection in the form of respirators or dust masks will be issued when required and must be worn when instructed.
- All personal must dress in an appropriate manner to avoid sunburn and potential skin cancer.
- Safety glasses or face shields must be worn when eye damage is possible.
- Alcohol shall not be consumed on site, any time during working hours prohibited.
- Accidents and incidents shall be reported ASAP to site supervisor and head office.
- Fire extinguishers will be kept on site and workers trained in their use.
- Parking of vehicles / working vehicles will be parked of the road way, traffic signs to be implemented .

4. Inductions

Every person who enters the construction site for the purpose of doing construction work shall be inducted and made aware of the following:

a) whether there is a health and safety committee for the workplace;
b) if there is a workplace health and safety officer appointed—
    - the officer's name and contact details; and
    - a description of the officer's role;
c) the principal contractor's estimate of how long the construction work will take;
d) how the principal contractor proposes to monitor and review the effectiveness of the control measures the principal contractor has used or will use;
e) the site rules;
f) emergency procedures, including the name and contact details of the first aid officer;
g) the common plant and directions about how it is to be used at the workplace.

Site inductions shall be recorded on an Induction Record and registered on the SITE SAFETY INDUCTION REGISTER

5. Emergency Response Plan

The following potential emergencies have been identified on this project:

- Physical injury (minor)
- Physical injury (major)
- Fire (building or mobile plant)
- Hazardous substance spill

In the event of any of these emergencies, follow the Emergency Response Plans identified below.

Physical injury (minor)

- First aid equipment is available at the site office and [*insert here any other first aid location*].

Physical injury (major)

- Injured person to be given first aid treatment at scene of event and not to be moved unless life is threatened.
- Following an injury, a member of the crew is to contact the Site Foreman immediately.
- Two persons to remain with the injured person.
- Site Foreman to arrange Ambulance or medical help. If necessary request "on air" assistance for treating serious injuries.

Fire

- Alert other workers and send someone to alert fire brigade.
- Attend to persons in immediate danger.
- If possible, switch off power / gas supply at main.
- Use fire extinguisher if safe to do so.
- Obey instruction of the Site Foreman.

Hazardous Substance Exposure

- Obtain the relevant MSDS and follow the Accidental Release Measures for the product.

Evacuation

- On Evacuation Signal, proceed to assembly areas as specified in the Evacuation Plan.
- Remain at assembly point until directed otherwise.

Emergency Contact Numbers

Ambulance	0 0 0
Fire Brigade	0 0 0
Police	0 0 0
Poisons Information Centre	13 11 26
Electricity - Loss of Power / Accidents	13 62 62
Dial Before You Dig	1100

6. Safety ITP

The following inspections shall be carried out on this project:

Area of Risk	Purpose	Monitoring Requirements	Remedial Action	Responsibility
Mobile plant	Ensure plant is safe to use	Daily Inspection	Report faults	Plant Operator
Construction site	Ensure site hazards are controlled	Weekly Worksite Inspection Report	Correct and report category (A) faults	Site Foreman

PROJECT MANAGEMENT PLAN
LANSON
A NEW DIRECTION

STEP 1. RISK IDENTIFICATION, ASSESSMENT AND CONTROL MEASURES

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
1. Manual Handling	1-5 ☐	6-9 ☐	10-17 ☑	18-25 ☐	1. Use scaffold with adjustable height work platforms. 2. Use mechanical means (cranes etc.) to assist in lifting. 3. Use mechanical means (earthmoving equipment) to minimise manual work. 4. Vary tasks to reduce exposure to bending and lifting. 5. When lifting, bend legs and hold load close to body. 6. Instruct workers to get help to lift heavy materials. 7. Require workers to report back injuries.	☐ ☑ ☑ ☐ ☑ ☑ ☐	Foreman C. SIBBONS	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				
2. Hearing & Noise	1-5 ☐	6-9 ☐	10-17 ☑	18-25 ☐	1. Select equipment with silencers etc. 2. Isolate noise source. 3. Rotate workers. 4. Use PPE (eg: ear muffs)	☑ ☐ ☐ ☑	✓	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				

PROJECT MANAGEMENT PLAN
LANSON
A NEW DIRECTION

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
3. Eye Protection	1-5 ☐	6-9 ☐	10-17 ☑	18-25 ☐	1. Use Class 1 lasers where possible. 2. Isolate persons from laser beams where possible. 3. Provide training. 4. Erect warning signs. 5. Use PPE (eg: appropriate safety glasses) .	☑ ☐ ☐ ☑ ☑	FOREMAN C. GIBSON	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				
4. Head Protection	1-5 ☐	6-9 ☐	10-17 ☑	18-25 ☐	1. Keep people clear of loads being lifted over trench. 2. Erect overhead protection. 3. Install warning signs. 4. Barricade hazardous material. 5. Use PPE (eg; hard hats)	☐ ☐ ☑ ☐ ☑	✓	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				
5. Operation of Plant / Plant Overturn	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☑	1. Use plant with ROPS. 2. Wear Seat Belts. 3. Comply with manufacturer's gradient requirements for use.	☑ ☑ ☑	✓	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				

PROJECT MANAGEMENT PLAN
LANSON
A NEW DIRECTION

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
6. Working with Plant	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☑	1. Separate work activities. 2. Use warning devices. 3. Implement traffic controls. 4. Use PPE (eg: high visibility garments.	☑ ☑ ☑ ☑	FOREMAN C. GIBBONS	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				
7. Working in Trenches	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Choose a different work method that does not require persons to enter the excavation if possible. 2. Batter/Bench/Shore. 3. Keep water out of trench. 4. Keep machinery, material and soil heaps at sufficient distance to avoid collapse of sides of trench. 5. Implement routine inspection by experienced person	☐ ☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
8. Exc / Trench Protection	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Choose a different work method that does not require persons to enter the excavation if possible. 2. Batter/Bench/Shore. 3. Keep water out of trench. 4. Keep machinery, material and soil heaps at sufficient distance to avoid collapse of sides of trench. 5. Implement routine inspection by experienced person.	☐ ☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
9. Traffic Hazard	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☑	1. Traffic Management Plan	☑	FOREMAN C. GIBBONS	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				
10. Work with Lifting Plant	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Use plant with FOPs. 2. Fully enclosed edge protection. 3. Barricade area. 4. Lanyards for equipment. 5. Penetration covers, etc.	☐ ☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
11. Plant Under Powerlines	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. De-energise power lines. 2. Install "tiger tails". 3. Barricade protection around mobile plant from contacting lines and electrical equipment. 4. Use plant that can maintain safe working distance of 3m from all overhead powerlines	☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
12. Ultra-violet Protection	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☑	1. Sun Hats. 2. Sunscreen. 3. Protective Clothing	☑ ☑ ☑	✓	1-5 ☑	6-9 ☐	10-17 ☐	18-25 ☐				

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
13. Hazardous Minor Tools & Equipment	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Select equipment with silencers etc. 2. Isolate noise source. 3. Rotate workers. 4. Use PPE (eg: ear muffs). 5. Use residual current devices (RCDs). 6. Maintain tools and leads. 7. Protect leads from damage. 8. Use mechanical means to minimize manual exposure	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
14.Contact with Electricity	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Use residual current devices (RCDs). 2. Maintain tools and leads. 3. Protect leads from damage. 4. De-energise power lines. 5. Install "tiger tails". 6. Barricade protection around mobile plant from contacting powerlines and electrical equipment. 7. Use plant that can maintain safe working distance of 3m from all overhead powerlines.	☐ ☐ ☐ ☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
15. Contact with High Pressure	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Ensure service locations are correctly verified. 2. Isolate services. 3. Ensure emergency procedures are established.	☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
16. Contact with Chemicals	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Identify hazardous substances on site. 2. Obtain the appropriate MSDS. 3. Follow instructions given by the manufacturer. 4. Complete Hazardous Substances Register.	☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
17. Contact with Radiation	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Identify hazardous substances on site 2. Obtain the appropriate MSDS 2. Follow instructions given by the manufacturer. 3. Complete Hazardous Substances Register	☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				
18. Struck by Falling Object	1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐	1. Fully enclosed edge protection. 2. Barricade area. 3. Lanyards for equipment. 4. Penetration covers, etc.	☐ ☐ ☐ ☐		1-5 ☐	6-9 ☐	10-17 ☐	18-25 ☐				

PROJECT MANAGEMENT PLAN

LANSON

A NEW DIRECTION

Potential Hazard Arising From Work Activity	Initial Hazard Score *Prior to Control Measures* Use Hazard / Risk Assessment Score Chart below and Tick where applicable				Risk Control Measures *Discuss at Toolbox Meeting*	Tick Risk Control Measures to be used	How Risk Control Measures Will Be Implemented *Discuss at Toolbox Meeting* Insert name + position of person responsible for implementation.	Residual Hazard Score *After Control Measures* Use Hazard / Risk Assessment Score Chart Below				Review of Control Measures *Complete monthly and as required* Are we using effective risk control measures? (Insert Date Reviewed)			
19. Fall from Height	1-5	6-9	10-17	18-25	1. Fully enclosed edge protection (EG guard rails, Mid rails, toe boards). 2. Penetration covers, mesh. 3. Tethering. 4. Fall arrest. 5. Inspection and maintenance procedures in place			1-5	6-9	10-17	18-25				
20. Caught between Operating and Moving Plant	1-5	6-9	10-17	18-25 ✓	1. Separate work activities. 2. Use warning devices. 3. Implement traffic controls. 4. Use PPE (eg: high visibility garments)	✓ ✓ ✓ ✓	FOREMAN C. SIBBALD	1-5 ✓	6-9	10-17	18-25				
21. Asbestos Hazards	1-5	6-9	10-17	18-25	1. Identify hazardous substances on site. 2. Obtain the appropriate MSDS. 3. Follow instructions given by the manufacturer. 4. Complete Hazardous Substances Register.			1-5	6-9	10-17	18-25				
22.Biological Hazards	1-5	6-9	10-17	8-25	1. Identify hazardous substances on site. 2. Obtain the appropriate MSDS. 3. Follow instructions given by the manufacturer. 4. Complete Hazardous Substances Register			1-5	6-9	10-17	18-25				

HAZARD/RISK ASSESSMENT SCORE CHART

Likelihood	Impact/Consequences				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	10	16	20	23	25
Likely	7	11	17	21	24
Possible	4	8	12	18	22
Unlikely	2	5	9	14	19
Rare	1	3	6	13	15

Score	Level of Risk	Urgency of Action Needed
18 to 25	High	Immediate action required
10 to 17	Significant	Senior management attention needed urgently
6 to 9	Moderate	Management responsibility must be specified and actioned
1 to 5	Low	Manage by routine procedures

LANSON
A NEW DIRECTION
26 Navelina Court
Dundowran Qld 4655

ABN 77 113 061 943

ENVIRONMENTAL MANAGEMENT PLAN

KINGFISHER PARADE TOOGOOM SEAWALL #CORP 01-13/14

TABLE OF CONTENTS

1. Project Description

Construction Site Address	KINGFISHER PARADE, TOOGOOM	
Type of Construction Work	CONSTRUCTION OF THE ROCK ARMOUR SEAWALL	
Duration of works	Start Date: T2A	Est Completion Date:
Aspects/Impacts	See appendix 'Environmental Risk Register'	
Signature of Principal Contractor		

2. Authorities and Responsibilities

Project Manager Responsibilities	The Project Manager is responsible for: • identifying the environmental aspects connected with the work and their potential impacts at the planning stage and for approving control measures to mitigate the risks associated with those aspects; • upon becoming aware of an instance of serious or material environmental harm, immediately give written notice to the administering authority of the event, its nature and the circumstances in which it happened.
Site Supervisor Responsibilities	As a person in control of a workplace, the Site Supervisor has an obligation to: • ensure the risk of environmental harm is minimised for the workplace. In order to meet this obligation, the Site Supervisor shall ensure that control measures outlined in Environmental Instructions are properly implemented. • report instances of serious or material environmental harm to the Project Manager.
Self-employed persons	A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the ***general environmental duty***). Self-employed persons (subcontractors) have responsibility to: As soon as reasonably practicable after becoming aware of an event involving environmental harm, notify the Site Foreman or Project Manager of the event, its nature and the circumstances in which it happened.
Workers and others	A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm (the ***general environmental duty***). Workers and others (visitors) have responsibility to: As soon as reasonably practicable after becoming aware of an event involving environmental harm, notify the Site Foreman or Project Manager of the event, its nature and the circumstances in which it happened.

3. Inductions

Every person who enters the construction site for the purpose of doing construction work shall be inducted and made aware of the following:

a) the principal contractor's estimate of how long the construction work will take;
b) the Environmental Instructions relevant to the work;
c) how the principal contractor proposes to monitor and review the effectiveness of the control measures the principal contractor has used or will use;
d) the site rules;
e) emergency procedures, including the name and contact details of the first aid officer;

Site inductions shall be recorded on an Induction Record and registered on the SITE SAFETY INDUCTION REGISTER

4. Environmental Instructions

a) Sediment Control

Objective

The objective is to protect open drains and natural drainage lines from sedimentation deposits by minimising erosion of lands and transportation of sediments during construction.

Control Measures

The following measures should be undertaken to minimise erosion.

- Set up silt traps to stop sediment laden rainwater going into drains. When sediment traps are up to 1/3 full of silt, the silt should be removed.
- All sediment laden water is not to be discharged to drains.
- Keep exposed soil to a minimum
- Avoid highly erodible soils and steep slopes
- Revegetation progressively as each section of works is completed.
- Minimise vehicles going into exposed soil areas
- Divert clean stormwater by small levees away from those parts of site where the soil is exposed.
- Cover or revegetate stockpiles as soon as practicable.
- Where practicable, all trenches should be backfilled at the end of the working day.
- Machine activity is to be kept to an absolute minimum.
- Construction Plant and machinery is to remain within the construction site for the duration of the contract thus limiting the transfer of mud from the site and also the transportation of weeds.
- All drainage channels carrying stormwater runoff are to be stabilised.
- All dirty water caused by washing paint brushes, rollers must be captured and disposed of in appropriate waste disposal facility.

Best Practice / References

Through compliance with regulations, environment protection will be achieved.

EPA Publication 275 Construction Techniques for Sediment Pollution Control

EPA Publication 480 Environment Guidelines for Major Construction Sites

Department of Land & Water Conservation NSW "Urban Erosion and Sediment Control Field Guide" May 1996 (The Red Book)

The Institution of Engineers, Australia (QLD) Soil erosion and Sediment Control, Engineering Guidelines for Queensland Construction Sites". June 1996

b) Dewatering of Work sites

Objective

To ensure that dewatering operations do not result in turbid water entering natural waterways.

Control Measures

Treat turbid water to remove sediment prior to being pumped into stormwater system or natural waterway. Treatment may be done by placing turbid water into dam or tank to allow sediment to settle.

De-water by pumping water, wherever practicable on to vegetated areas of sufficient width to remove suspended soil or to sediment control devices.

Best Practice / References

Draft Best Practice Environmental Management Guidelines for Urban Stormwater

Australia New Zealand Environment Conservation Council, " Guidelines for Groundwater protection in Australia"

Australia New Zealand Environment Conservation Council, " Australian Water Quality Guidelines for Fresh and Marine Waters", Nov 1992

Analysis of Water Quality indicators such as suspended solids, Ph, and Oil/grease by a NATA accredited laboratory.

Turbidity & pH field-testing using site gauges.

c) Erosion & Dust Control

Objective

To minimise / avoid the health risks or loss of amenity due to emission of dust to the environment and the loss of soil from the environment.

Control Measures

- Ensure that the area of cleared land is minimised during the drier months of the year when dust generation is at its greatest.
- Implement dust suppression measures such as promptly watering exposed areas when visible dust is observed.
- Use geotextile fabrics to cover stock piles and unvegetated areas.
- Locate stockpiles where they are protected from wind.
- Minimise the number of stockpiles, the areas and the time stockpiles are exposed.
- Smooth surfaces should be deep ripped and left rough and cloddy to reduce wind velocity at the soil surface.
- All sediment laden water is not to be discharged to drains.
- Keep on-site vehicle speeds at less than 10km/h

Best Practice / References

Dust measurement is to be by observation of the site and by comment from affected residents.

Review of complaint register used to assess whether objective has been met.

EPA Publication 480 Environmental Guidelines for Major Construction Sites

d) Air Quality (Plant Emissions and Other Discharges to Air)

Objective

To ensure there is no health risk or loss of amenity due to emission of exhaust gases or other discharges to air.

Control Measures

Vehicles and machinery to be maintained regularly and serviced to the manufacturers specifications.

All vehicles, plant & machinery to be fitted with appropriate emission control equipment.

Generally if smoke is visible after 10 to15 seconds of engine start-up or during normal operation, the vehicle may need to be serviced.

Vegetation, building materials (such as timbers) must not be burned off. Vegetation should be mulched. Constructions materials such as timber should be recycled.

Best Practice / References

If plant or machinery is emitting visible smoke continuously for longer than 10 -15 seconds, during normal operation, then it will be serviced or replaced.

All vegetation is mulched and all construction timber is recycled.

e) Noise and Vibration

Objective

To ensure that nuisance from noise and vibration does not occur.

Control Measures

Working hours to be in keeping with the local By-laws and EPA Noise Guidelines.

Limit rock breaking operations to the hours of 8am to 4.30pm Monday to Friday.

Advise local residents when blasting should commence and expected time that blasting should continue.

Advise local residents when unavoidable out of hours work should occur.

Fit and maintain appropriate mufflers on earthmoving and other vehicles on site.

Best Practice / References

No damage to buildings/ structures

Zero complaints from residents, public, client, council or EPA

f) Construction Waste Management

Objective

To minimise generation of solid wastes from construction activities and to appropriately dispose of generated solid waste.

Control Measures

- All solid wastes should be placed in appropriately designed storage areas during construction.
- As part of Progressive rehabilitation of areas any solid waste or spoil material should be removed from site and disposed of appropriately. Work and surrounding areas should be maintained in a tidy condition.
- There should be no vegetation burning. All waste vegetation should be chipped or mulched on-site and reused or appropriately disposed of.
- Weeds are to be disposed of off site in appropriate disposal facilities.
- Wastes should be collected for recycling and or disposal at Local Government designated sites.
- Maintain a high quality of housekeeping and ensure that materials are not left where they can be washed or blown away to become litter.
- Sending waste concrete from demolition to a concrete recycler instead of landfill.
- Using overburden to construct temporary noise barriers.
- Collecting lubricating oil from the construction vehicle fleet and sending it to a recycler.
- Collect steel, timber, concrete and plastic waste into recycling bins and arrange to be sent to recycler.

Best Practice / References

Once targets for waste minimisation have been set maintain data and convert this to cost savings where possible.

g) Storage of Fuels & Chemicals on Site

Objective

To ensure that chemicals and fuel storage is safe, and that any materials that escape do not cause environmental damage such as groundwater or soil contamination.

Control Measures

Minimise chemicals and fuel stored on site.

Store dangerous chemicals in a roofed and bunded area with an impervious floor, separated and signed as required by relevant codes and standards.

- Minimise chemicals and fuels on site.
- Store fuels and other hazardous materials in appropriately bunded structures away from creeks and drainage lines.
- Bunds should be impervious to prevent spilled product from escaping.
- Any spillage should be cleaned up immediately.
- Where possible store each type of chemical/ fuel in a separate area so that spilled product can be retrieved and re-used (providing that it has not been contaminated with water or other debris).
- Maintain a list of chemicals and other potentially hazardous materials and Material Safety Data Sheets.
- Restrict the area in which hazardous materials can be stored during construction works.
- No plant maintenance to be carried out on site.

Best Practice / References

Australian Standard 1940 – The Storage and Handling of Flammable and Combustible Liquids.

Implement a contingency plan to handle spills, so that environmental damage is avoided.

h) Dirty Roads

Objective

To ensure that roads are kept clean of soil.

Control Measures

- Prevention of soil being deposited on roads is preferable to cleaning them afterwards.
- All loads of soil being transported for off-site disposal should be covered.
- If required, install litter traps lined with filter cloth in entry pits.
- If required, roads are to be swept or washed down.
- Clean vehicles prior to site exit.

Best Practice / References

Nil

i) Management of Stockpiles

Objective

To manage soil stockpiles so that dust and sediment in run-off is minimised.

Control Measures

- Minimise the number of stockpiles, and the area and the time stockpiles are exposed.
- Locate stockpiles away from drainage lines at least 10m away from natural waterways and where they should be less susceptible to wind erosion.
- Ensure that stockpiles have slopes no greater than 2:1 (horizontal: vertical).
- Stabilise stockpiles if left more than 28 days by covering with anchored fabric or by seeding.
- Establish sediment controls around unstabilised stockpiles.
- Suppress dust generation from stockpiles as circumstance demand.
- Stockpiles should not be located under the drip line of trees or across drainage lines or gutters.

Best Practice / References

EPA Publication 275 Environmental Guidelines for Major Construction Sites

j) Vegetation

Objective
To protect indigenous vegetation and habit in construction works area and to reinstate vegetation and habitat as the works progress.

Issues
- Weed contamination in construction works area
- Soil compaction especially under tree canopy
- Protection of indigenous vegetation
- Protection of topsoil

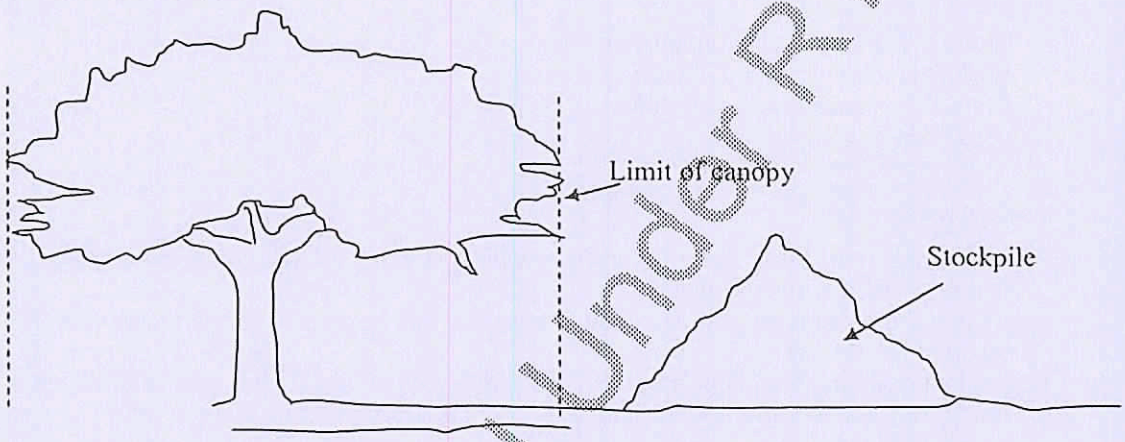
Control Measures
- Check site to assess if there are noxious weeds. Contact EPA or visit www.weeds.gov.au to find out what are noxious weeds.
- If there are noxious weeds, you must ensure that any noxious weed part or seed is not taken out of the site.
- To control weed contamination of site, trucks and other construction plant should not move from areas where there is significant weed contamination to areas where there is minimal weed contamination.
- Prior to commencing work on site, all construction equipment and trucks shall be free of weed contamination.
- Works to be programmed to minimise the potential for weed contamination. Trucks should start work in minimal weed contaminated areas and move to areas where there is a higher degree of weed contamination.
- All construction vehicles to be prevented from travelling too close to trees or under a tree canopy (see picture below).
- Vehicular traffic should be prevented from travelling close to trees by placing some star pickets and webbing around the tree
- Appropriate treatment and disposal of removed vegetation.
- Implementation of a rehabilitation program of land that has been disturbed by construction activities.
- Program to include landscaping using a diversity of local and indigenous plant/grass species.
- Topsoil should be stockpiled and returned to the site from which it was removed with the original contours.
- If you are working in an area where there is a risk of bushfires, we must take measures to prevent your activities causing a bushfire.
- If soil compaction has occurred the soil should be loosened to ensure that plant growth is not inhibited and that infiltration of water to the soil layer can occur.
- In pasture or recreation areas, grasses should be sown appropriate to the use of the site in consultation with the local council and landowners.
- Materials for rehabilitation should be from areas which are not infested with weeds or other exotic flora.
- The sources should be checked for weeds prior to transportation to site.
- The works are programmed to ensure that weed-infested soil, vegetation and chipped mulch does not get transported to other parts of site during the course of the works.
- Define work and exclusion areas ie fencing.

Best Practice / References

"Bush regeneration", Buchanan, 1989

"Flora of Melbourne – A Guide to the Indigenous Plants of the Greater Melbourne Area" Compiled by Society for Growing Australian Plants Maroondah Inc

Clearance from tree:



k) Protection of Fauna

Objective

To protect native vertebrate fauna from being trapped.

Control Measures

- All open trenches should be inspected prior to commencement of work each day for trapped vertebrate fauna such as frogs, reptiles, birds or mammals.
- If it is found that there are trapped vertebrate fauna in open trenches then an appropriate shelter for animals should be contacted to remove it from the trench.
- Wherever possible ensure that all trenches are backfilled each night.
- All shafts should be covered at the end of each working day to prevent vertebrate fauna from entering.
- Before excavating or dumping soil check if there are any animals such as lizards or frogs.

Best Practice / References

Seek expert advice from Department of Natural Resources and Environment and the RSPCA

l) Heritage & Archaeology

To prevent damage or loss to heritage places and objects which would result in loss of cultural, historic and educational value to the community.

Control Measures

- Fence heritage or archaeological site
- Place signs to indicate area is a "no go" area
- Ensure that the appropriate permits / authorisations have been received prior to commencing work
- Protection of scar trees

Best Practice / References

Not to lose, destroy or deface any sites of historical or archaeological significance

VicRoads, "Guidelines for the Conduct of Archaeological Surveys" 1996

m) Energy Use

To minimise the use of non-renewable energy.

Control Measures:

- Do not leave machinery or vehicle engines on when this is not necessary.
- Switch off lights when rooms are not used.
- In carrying out your project, work out the best way to carry out your activities that uses least amounts of energy. For example: use smaller plant if it can do the just as well as bigger plant.

n) Concrete and Masonry

To minimise pollution of drains or soil from concreting operations.

Control Measures:

- Concrete Pumps operating on roads or near drains must set up bunds to stop any potential spills.
- Dirty water from washing concrete mixers or from concrete or masonry cutting machines must not be allowed to flow into drains. It must be captured and allow sediment to settle. Sediment is then disposed in appropriate waste treatment facility.

5. Corrective Action

All environmental incidences and breaches must be recorded and reported on an NCR.

6. Emergency Response Plan

The following potential emergencies have been identified on this project:

- Fire (building or mobile plant)
- Hazardous substance spill

In the event of any of these emergencies, follow the Emergency Response Plans identified below.

Fire

- Alert other workers and send someone to alert fire brigade.
- Attend to persons in immediate danger.
- If possible, switch off power / gas supply at main.
- Use fire extinguisher if safe to do so.
- Obey instruction of the Site Foreman.

Hazardous Substance Exposure

- Obtain the relevant MSDS and follow the Accidental Release Measures for the product.

Evacuation

- On Evacuation Signal, proceed to assembly areas as specified in the Evacuation Plan.
- Remain at assembly point until directed otherwise.

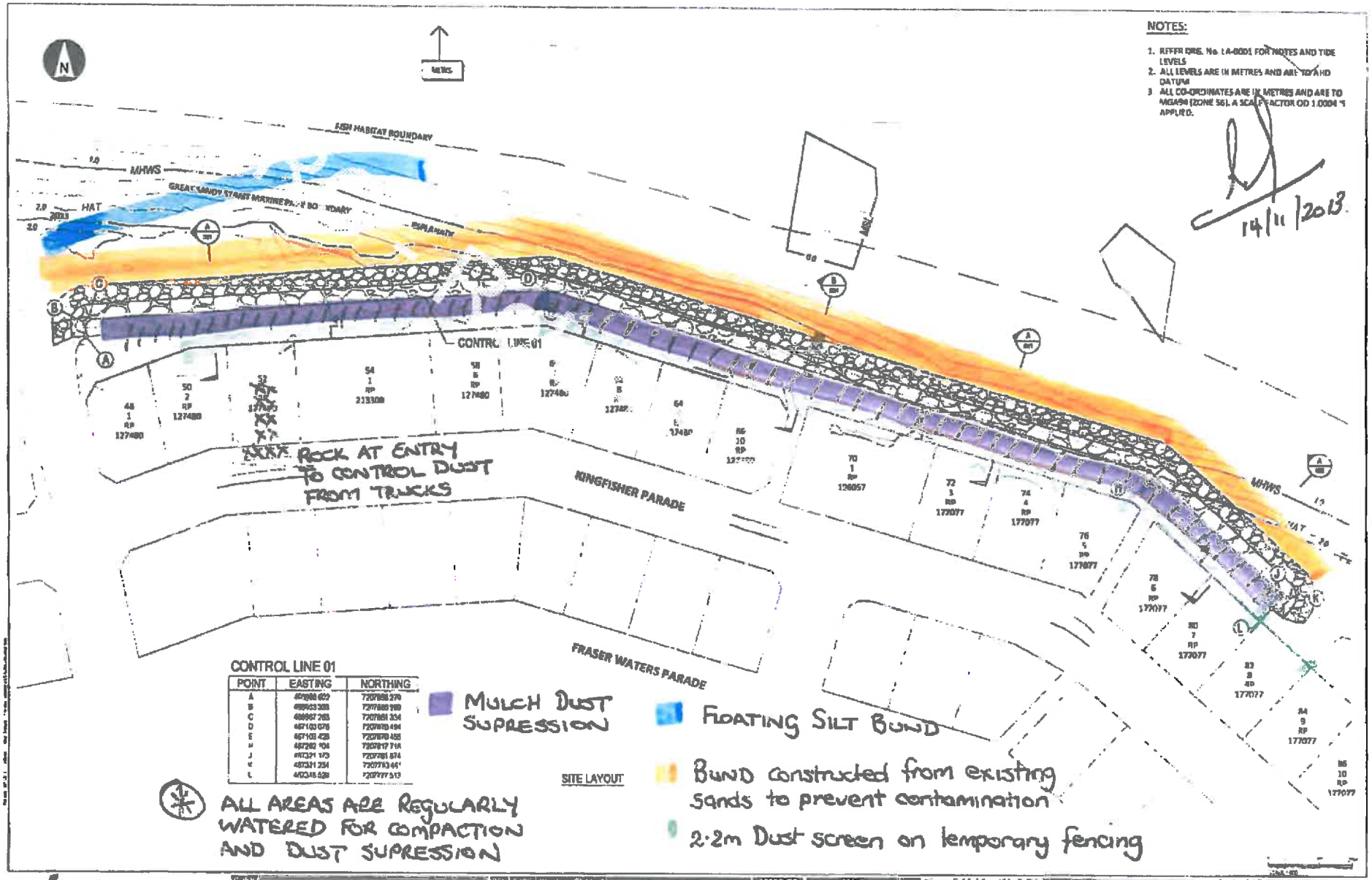
Emergency Contact Numbers

Ambulance	0 0 0
Fire Brigade	0 0 0
Police	0 0 0
Poisons Information Centre	13 11 26
Electricity - Loss of Power / Accidents	13 62 62
Dial Before You Dig	1100

7. Environmental ITP

Area of Risk	Purpose	Monitoring Requirements	Remedial Action	Responsibility
Noise & Vibration	Keep noise and vibration nuisance to a minimum for local residents.	Check daily. Inspection to be recorded weekly on Worksite Inspection Report.	Review and enhance noise & vibration control measures. Amend Environmental Instruction as required.	Site foreman
Erosion & Dust Control	Determine whether a dust nuisance exists	Daily during dry weather. Inspection to be recorded weekly on Worksite Inspection Report	Improve controls on dust emissions as required. Amend Environmental Instruction as required.	Site foreman
Dewatering Of Worksite & Sedimentation Controls	Determine whether the installation is operating effectively	Twice daily during dewatering operations. Inspections to be recorded weekly on Worksite Inspection Report	Improve maintenance on system. Redesign type of sedimentation control used.	Site foreman
Construction Waste	Ensure construction waste and litter is not a nuisance.	Daily before end of work day. Inspection to be recorded weekly on Worksite Inspection Report	Ensure bins for litter are available. Empty bins regularly. Clean up litter daily. Speak to employees about litter disposal.	Site foreman
Dangerous Goods (Fuels) and Hazardous Substances	Ensure Dangerous Goods and Hazardous Substances are stored and used correctly to prevent a spill.	Daily before end of work day. Inspection to be recorded weekly on Worksite Inspection Report	Clean up any contamination and place in regulated waste. Ensure appropriate bunding.	Site foreman
Dirty Roads	Prevent soil on roads.	Daily before end of work day. Inspection to be recorded weekly on Worksite Inspection Report	Ensure that trucks taking soil off site are covered. Maintain rumble strip. Implement program for cleaning of roads if required.	Site foreman

ENVIRONMENTAL PLAN



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WIDE BAY GEOTECHNICAL SERVICES PTY. LTD.

SOIL & CONCRETE TESTERS

A.C.N. 006 482 051
A.B.N. 70 006 482 051

Email: wbgs@bigpond.net.au

HERVEY BAY:
107 Old Maryborough Rd,
(P.O. Box 380)
Hervey Bay Q 4655
Telephone: (07) 41 243677
Fax: (07) 41 283284

LTH:KMC
H7475

6 January 2014

Lanson Civil
PO Box 816
Pialba QLD 4655

RE: ACID SULPHATE SOIL SAMPLES - TOOGOOM ROCK WALL FOUNDATION
SAMPLE DATE 11/12/13

Dear Sir

Please find attached the verification results from the sample which were sampled from the foundation of the Toogoom Rock Wall (refer to chain of custody attached). The sample was sent to the external laboratory, Bio-Track Pty Ltd for verification.

The results indicate that **NO** acid sulphate soils are present. Please refer to attached certificate of analaysis.

We thank you for your instructions to undertake this work. Should you require any further information in this regard, please contact the writer.

Yours faithfully

LEX T HEWITT OMIE Aust
(Institute of Engineers Aust. No. 774321)
(DSA Site Classifier Licence No. 1001730)

DETERMINATION OF ACID SULFATE SOIL PROPERTIES

CERTIFICATE OF ANALYSIS

Analysis By: Bio-Track Pty Ltd ABN 91 056 237 975

781 Mt. Glorious Road Highvale, Brisbane, Australia, 4520 Ph. 07 3289 7179 Fx. 07 3289 7155

LAB REFERENCE LR131213.451 DATE OF REPORT 24 DECEMBER 2013 @10:09:04
CLIENT NAME Lex Hewitt c/o Wide Bay Geotechnical Services P.O Box 380 Hervey Bay 4655
PROJECT NAME Toogum Rock Wall-Lanson Civil YOUR PROJECT/JOB REFERENCE X7475
SAMPLING DATE NUMBER OF SAMPLES 1 Samples supplied by client SAMPLE TYPE:Soil
DATE RECEIVED 13/12/2013 9:53:32 AM PACKAGING Plastic Bag Ground Oven Dry Samples DISPOSED ON 451

Sample ID as received. METHODOLOGY: As per (DNR QASSIT May 2004), oven dried (85°C), >1000 um shell removed, fine grind. All reported values gravimetric, dry mass.
%sEQ (equivalent sulphur) calculated as moles TAA/62% + %S Cr + %sNAS - sANC BT (sNAS included irrespective of pH).
LIME1 rates calculated to neutralise TPA (or TAA if >TPA)+ aS_RAS -ANC_BT/1.5 LIME2 rates calculated to neutralise TAA + aS_POS or S_Cr + aS_RAS -ANC_BT/ 1.5
NB. Lime rates assume 97% lime neutralisation but DO NOT include any safety factors. Suggested factor=1.5-2. Rates are kg/ton. Multiply by bulk density to convert to kg/m3.
Fineness Factor (FF)=1.5 CBN POS= moles carbonate alkalinity released by oxidation assuming (Ca POS - Ca KCl) + (Mg POS - Mg KCl) is due to carbonate solution.
Blanks represent unmeasured values, zeros & <0.x represent measured values. If pH KCl>4.5 then s-RAS (calculated from acid extract) may be zero for undisturbed soil. Ca NAS is the acid reactive calcium calculated as the difference between 1 M KCl and 4 M HCl soluble Ca.

ID. DEPTH	pH	pH	TAA	TPA	TSA	S KCl	S P	S POS	S Cr	s-NAS	s EQ	Ca KCl	Ca P	Mg KCl	Mg P	CBN POS	LIME1	LIME2	sANC BT	Ca NAS
None	KCL	ox	m/t	m/t	m/t	%	%	%	%	%	%	mg/kg	mg/kg	mg/kg	mg/kg	m/t	kg/t	kg/t	%	mg/kg
Analytical Method Codes	23A	23B	23F	23G	23H	23Ce	23De	23Ee	22B	s20Je	s	23Vh	23Wh	23Sm	23Tm	a23U&X			s19A2	20E
Toogum Rock Wall	6.89		0			0.05			0.59	<0.01	0.589	839		1047				18		1850

Signatory

For and on behalf of Bio-Track Pty Ltd

WIDE BAY GEOTECHNICAL SERVICES PTY LTD **ACID SULPHATE FIELD INVESTIGATION** WBGS101a

CLIENT: Lanson Civil TEST PROCEDURE: QASSIT 10.3 TESTED BY:: LTH DATE: 11/12/13

PROJECT DETAILS: Toogoom Rock Wall - Foundation

Sampling method: 2 AS Type of water: demineralised pH meter: TRS pH buffer check carried out on buffer solutions: YES

pH of hydrogen peroxide prior to adjustment with NaH: 2.6 pH of adjusted hydrogen peroxide: 5.0

Test No.	Location	Depth(m)	Material description				pH of soil in water	pH of soil in hydrogen peroxide	Reaction
#1	LAB	FOUNDATION	Gravel ☐ Sand ☐ Sand is Grain size ☐ Gravel is grain size ☐ Gravel shape is ☐☐	Silt ☑ Clay ☑ Shade 2/☐ Dry Consistency ____ (Moist) Wet ____	Colour 2 ☑ Mottled ☐ Additional information	MPS LL P75 ( )	7.00	6.50	Nil to very slight

Grain size:
Fine to coarse 1☐ Coarse 4☐
Medium to coarse 2☐ Fine 5☐
Fine to medium 3☐ Medium 6☐

Gravel shape:
Angular 1☐
Sub Angular 2☐
Sub Rounded 3☐
Rounded 4☐

Shade:
Very pale VP
Pale P
Dark D
Very dark VD

Colour:
White 1☐ Red 5☐
Grey 2☐ Green 6☐
Yellow 3☐ Brown 7☐
Orange 4☐ Blue 8☐
Black 9☐
Purple 10☐

Reaction description:
Nil = no reaction
X = slight reaction
XX = Moderate
XXX = Highly
XXXX = Violent
XXXXX = Volcanic

Chain of Custody & Laboratory Test Request

12.12.13

Bio-Track Pty Ltd

Please send this form with your samples.

Please refer to the Bio-Track schedule of tests for test names, test codes & prices.

SEND TO – 781 Mount Glorious Road; Highvale Brisbane 4520

TEL 07 3289 7179

email pe@biotrack.com.au

Results will be sent as a PDF to the nominated person. The hard copy, chain of custody and invoice will be sent by mail.
Do you need results sent by email using a CSV format for spreadsheet importing? (Y / N)

Notes

Person to Report	Lex Hewitt	Firm	Wide Bay Geotech
Project Title	Toogoom Rock Wall	Email	wbgsc@bigpond.net.au
Postal Address	P O Box 380 H/Bay	Post Code	4655
Job Number	H 7475	Phone/Fax	07 41 243677
Order Number	34.	Courier	Aust Post
Consignment #	-	Date Dispatched	12.12.13
Date of Sampling	11.12.13	Number of Samples	1

	Sample Name/ID	Test Code #	Tests Required
1	Toogoom Rock Wall – Foundation	2	Chromium Reduction Suite (Verification of Acid Sulphate
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
14			
16			
17			
18			
19			
20			

SENDER TO KEEP

MQ1091051

Note: Please ring/fax the lab prior to dispatch so we can check if samples are late. Eskies will be returned to the sender. For esky returns outside of the Brisbane metropolitan area please attach a consignment note for your courier firm or make other arrangements with us.

Thank you for using Bio-Track.