



Kooragang Coal Terminal Construction Surface Water Management Plan

120Mtpa Capacity Project

March 2008



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Prepared by

Umwelt (Australia) Pty Limited

on behalf of



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1.0 Introduction

Port Waratah Coal Services Limited (PWCS) owns and operates the Carrington and Kooragang Coal Terminals in the Port of Newcastle in New South Wales (NSW). These terminals receive, assemble and load Hunter Valley coal onto ships for export to customers around the world.

Kooragang Coal Terminal (KCT) operations are located on Kooragang Island on the lower reaches of the Hunter River approximately 2 kilometres north of Newcastle (refer to **Figure 1.1**). As shown on **Figure 1.1**, the nearest urban areas are Fern Bay located approximately 1.7 kilometres to the east; the suburb of Stockton (North), located approximately 1.5 kilometres to the south-east of the site; and Mayfield located 1.7 kilometres to the south-west. The former BHP steelworks and current OneSteel operations are located to the south and south-west, across the South Arm of the Hunter River.

PWCS was granted Project Approval from the Minister for Planning on 13 April 2007 for the increase in throughput capacity of KCT from the approved 77 Million tonnes per annum (Mtpa) to a nominal 120Mtpa (Project Approval). The works associated with the approved increase to the throughput capacity will be undertaken as part of the 120Mtpa Capacity Project (the Project).

Condition 7.3(a) of the Project Approval requires the preparation and implementation of a Construction Surface Water Management Plan (CSWMP) for construction activities associated with the Project. This condition is outlined in **Table 1.1** and includes an indication of where the specific requirements have been addressed in this CSWMP.

Table 1.1 – Condition 7.3(b) of KCT Project Approval

Condition Number	Condition Detail	Section of Plan
7.3	As part of the Construction Environmental Management Plan for the project required under condition 7.2 of this approval, the Proponent shall prepare and implement the following:	
	a) a Construction Surface Water Management Plan to detail how surface water and stormwater will be managed on the Site during the construction. The Plan shall include use of appropriately-sized stormwater controls, in accordance with <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom, 2004). The Plan shall include specific measures to avoid sediment-laden stormwater from entering wetland areas or the Hunter River, and a monitoring program for stormwater leaving the Site;	Whole of Plan



Legend

 Kooragang Coal Terminal

FIGURE 1.1

Location of Kooragang Coal Terminal

1.1 Construction Activities

PWCS has identified ways to increase its throughput by optimising operational activities and associated upgrading of plant and equipment using demonstrated technology. Optimisation design indicates that the approved KCT facilities have the capacity for throughput to increase from 77 Mtpa to a nominal 120 Mtpa. This will be achieved essentially by operational efficiencies and the implementation of a range of conveyor and drive changes both for approved plant and equipment yet to be constructed and retrofitting of existing plant and equipment with upgraded components. All of these capacity improvement initiatives are located internally within the major approved coal terminal facilities.

The increase in capacity will be achieved by the following operational improvements:

1. An increase in the throughput capacity of the three receival and four stacking streams.
2. An increase in the throughput capacity of the coal reclaim system.
3. An increase in the throughput capacity of the shiploading system.

Increased throughput capacities will be achieved by:

- installing new low noise drives of higher power and increased speed;
 - increasing the coal profile on the belt;
 - changing to higher capacity transfer chutes and introducing soft flow design for more efficient movement of the coal; and
 - changes to operational activities and practices.
4. Upgrade works on services including power supply and control systems.

The Construction activities associated with the Project will be undertaken on a progressive basis during the normal operation of KCT. Construction activities will be undertaken in small steps (campaigns) over an extended period of time by appropriately small teams to suit equipment availability and the anticipated coal demand and will primarily consist of the following construction activities:

- Conveyor upgrades – replacement of conveyor drives and pulleys and changes to transfer chutes to increase flow rates.
- Reclaimer and Stacker upgrades.

Implementing the capacity throughput increase will not require mobilisation of a major construction workforce. The major types of equipment that will be on site during construction activities includes cranes and boom lifts, elevated work platforms, loaders, heavy vehicles (delivery of equipment), and miscellaneous vehicles utilised at KCT.

At times, construction activities will be undertaken over a 24 hour per day 7 day per week basis. In accordance with Condition 2.7 of the Project Approval (refer to **Section 2.2**), construction activities that would generate any audible noise at residential receivers will be restricted to between 7.00 am and 6.00 pm seven days per week, except where construction activities are undertaken in response to a direction from police or other relevant authority for safety or emergency reasons.

1.2 Management Plan Context

The Construction Surface Water Management Plan has been developed as a supplementary management plan to the Kooragang Coal Terminal Construction Environmental Management Plan for the Project. The context of this CSWMP in relation to KCT environmental management policy and systems is outlined in the Construction Environmental Management Plan.

1.3 Purpose and Scope

This CSWMP has been prepared in accordance with Condition 7. 3(a) of the Project Approval to detail how surface water and stormwater will be managed on site during construction activities associated with the Project. The CSWMP has been prepared in accordance with the requirements of the Guideline for the Preparation of Environmental Management Plans (DIPNR 2004).

1.4 Objectives

The objectives of this CSWMP are to:

- Minimise and control the impact of construction activities on surrounding water bodies.
- Ensure compliance with regulatory and PWCS requirements. This is the minimum requirement.
- Clearly define the responsibilities and actions required to respond to environmental incidents.
- Maintain the relationship that PWCS has established with the local community and regulatory requirements.

2.0 Statutory Requirements

2.1 Approval and Licensing Requirements

The Project Approval specifies a number of conditions that specifically apply to the management of surface water during construction activities associated with the Project. These conditions are outlined in **Table 2.1**, along with an indication of where each of the specific requirements are addressed by this plan.

Table 2.1 – Construction Surface Water Management Conditions Contained in the Project Approval

Condition Number	Condition Title	Condition Detail	Section of Plan
2.14	Construction Soil and Water Management	The Proponent shall take all reasonable measures to prevent soil erosion and the discharge of sediments and pollutants from the Site during construction of the project.	Section 4.0
2.15		The Proponent shall install stormwater drains, stormwater ponds, settlement ponds and/or storage ponds and other erosion, sediment and pollution controls as may be appropriate to manage stormwater on the Site. The Proponent shall maintain all erosion, sediment and pollution control infrastructure at or above design capacity for the duration of construction of the project and until such time as all ground disturbed by the works has been stabilised and rehabilitated so that it no longer acts as a source of sediment.	Section 4.0

3.0 Roles and Responsibilities

Specific responsibilities under the CSWMP are as follows:

PWCS General Manager

- Provide direction for environmental management in accordance with the PWCS Environmental Policy; and
- Provide for the review of the PWCS Environmental Policy.

Senior Project Manager

- Ensure that adequate resources are available to implement the requirements of this CSWMP; and
- Ensure that the CSWMP is relevant to construction activities associated with the Project.

Engineering Manager – Expansion

- Co-ordinate surface water management activities and controls in accordance with this CSWMP; and
- Co-ordinate periodic reviews of the CSWMP.

Specialist Advisor Environment

- Co-ordinate the water management system, community enquiry system and incident reporting program of KCT and notify the Engineering Manager of any breach or failure of the water management system and/or surface water related enquiry or incident associated with construction activities;
- Assist the Engineering Manager in the investigation of any breach or failure of the water management system and/or surface water related enquiry and/or incident associated with construction activities, where required.

Construction Manager

- Design and implement construction activities to ensure control of surface water within site water management systems;
- Respond to potential breaches or failures of surface water management controls;
- Review breaches and/or failures of surface water management controls and modify construction activities as appropriate;
- Report to Engineering Manager – Expansion on response to breaches and/or failures of surface water management controls; and
- Assist the Engineering Manager – Expansion with investigation of breaches and/or failure of surface water management controls and the implementation of any relevant mitigation and controls.

Other Employees and Contractors

All employees and contractors are required to comply with the requirements of this CSWMP.

4.0 Construction Surface Water Management System

PWCS has established a closed water management system to meet the design requirement of a 1 in 100 year design storm event or equivalent. To enable greater water harvesting and reduce dependence on potable water, the water management system for the complete facility (some of which is yet to be constructed) has already been implemented and is operational.

The water management system operates to collect water from all operational activities and to harvest storm water for recycling. All areas of the plant, including the wharf, capture water and channel it back to settling ponds for clarification prior to being held in storage ponds for re-use (refer to **Figure 4.1**).

On site there are two 12 megalitre (ML) settling ponds and two 10 ML clarifying ponds. The ponds are located within the rail loop and are adjacent to large bunded areas (refer to **Figure 4.2**), which provide a further nominal 70 ML of detention capacity when needed during rainfall events. The 70 ML bunded areas are utilised for the capture of storm water from the KCT site and have a design capacity equivalent to the 1 in 100 year design storm event. The water from these additional storage areas can be recovered to the clarified water ponds for re-use.

Once the captured water passes into the clarifying ponds it is available for delivery to the pump house for reticulation across the site for wetting coal and stockpiles to control dust, wash down and clean up, fire fighting systems and landscape irrigation. The water quality is regularly monitored to ensure it is suitable for the purpose of recycling.

As outlined in **Section 1.1**, construction activities associated with the Project includes a range of conveyor and drive changes both for approved plant and equipment yet to be constructed and retrofitting of existing plant and equipment with upgraded components. All of these capacity improvement initiatives are located internally within the major approved coal terminal facilities. As such, all construction activities will be undertaken within the boundaries of the existing KCT water management system. The design of the water management system to a 1 in 100 year design capacity is consistent with the principles outlined in *Managing Urban Stormwater: Soils and Construction*. The KCT water management system is designed to prevent sediment laden run off from entering the wetland areas of the Hunter River up to a 1 in 100 year design rainfall event.

Water may overflow from these ponds during extreme or prolonged wet weather. Overflows are controlled within an existing storm water channel which provides a vegetated flow path to the North Arm of the Hunter River. The location of the rail loop embankment between the storm water channel and the adjacent Kooragang Nature Reserve provides a barrier to protect the Kooragang Nature Reserve in the unlikely event that the capacity of the storm water channel is exceeded. In the unlikely event of an overflow of the water management system due to rainfall in excess of the design event or as a result of prolonged wet weather, PWCS will undertake volume measurement and water quality monitoring at the overflow point. The event and the monitoring results will be reported to the Engineering Manager and the Specialist Advisor Environment..

In addition to the existing KCT water management system, specific controls in relation to spill management and hazardous substance management. These specific activities and controls are outlined in the *Construction Environmental Management Plan*.

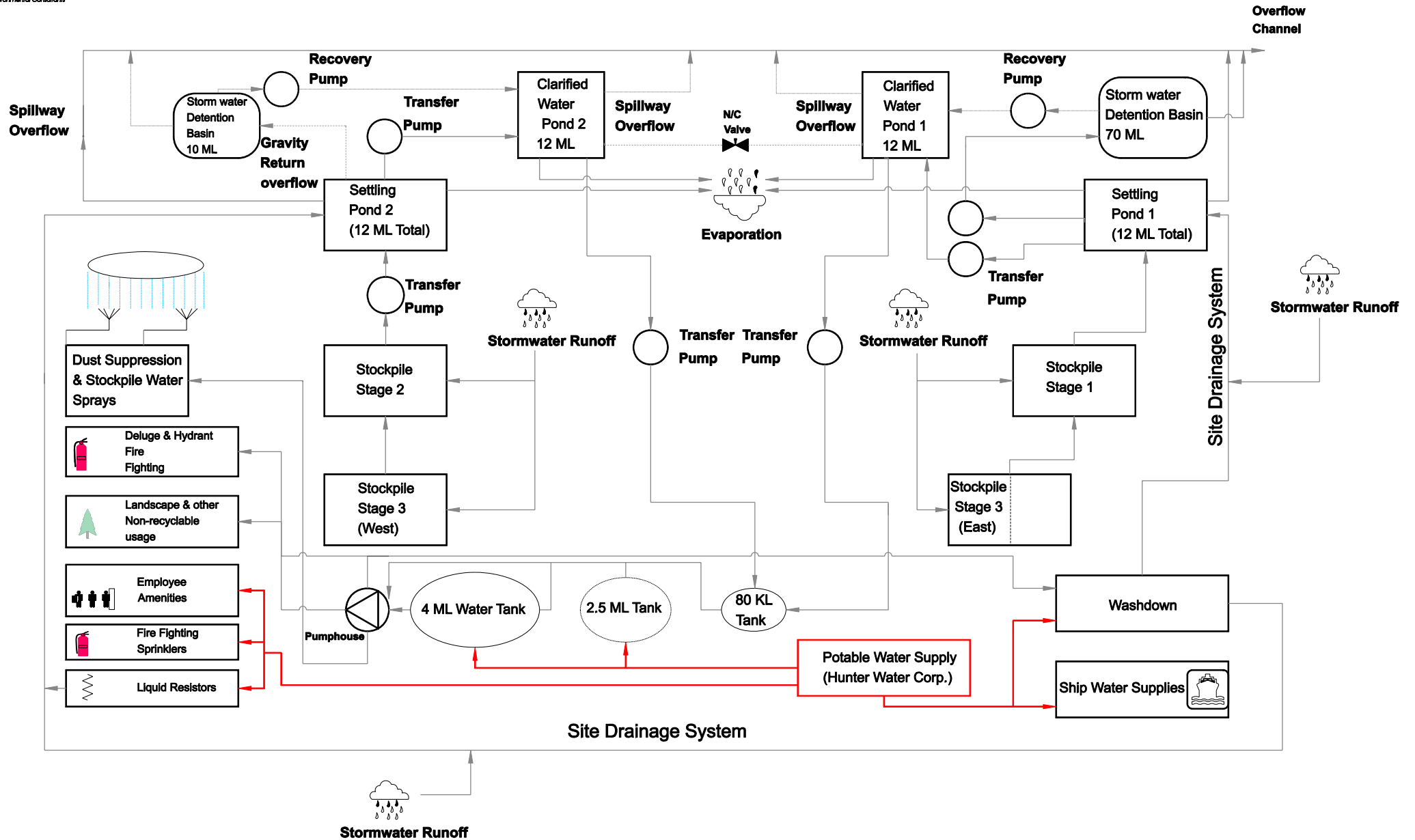
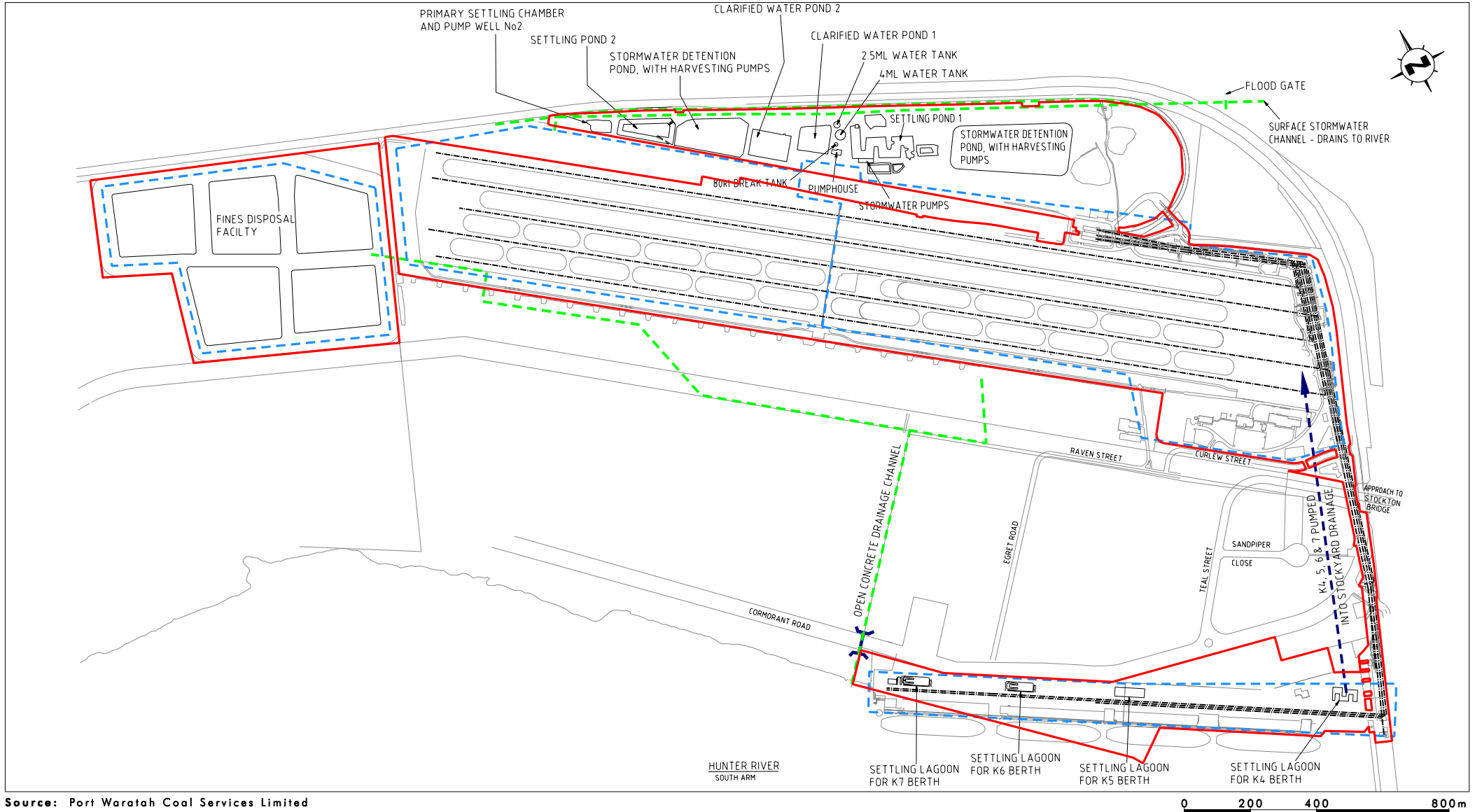


FIGURE 4.1

**Schematic of Water Management System
Kooragang Coal Terminal**



Source: Port Waratah Coal Services Limited

- Legend**
- Kooragang Coal Terminal
 - Pump Delivery Pipeline
 - - - Catchment Boundary
 - Culvert
 - - - Open Channel Drainage

FIGURE 4.2
Plan of Water Management System
Kooragang Coal Terminal

5.0 Review

The CSWMP is to be reviewed at least every year or as otherwise directed by the Director-General of DoP. The review process is to reflect changes in environmental legislation and guidelines and changes in technology or operational procedures.

In accordance with the Project Approval PWCS will commission an Independent Environmental Audit to the satisfaction of DoP on an annual basis. The Audit will include an assessment of the adequacy of the implementation of the CSWMP. Where necessary following the audit, the CSWMP will be updated and action taken to improve performance and management practices.

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