


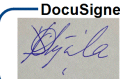

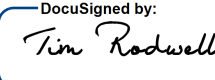


6BF Reline Project

Soil and Water Management Plan

Document No: 6BFR-PRJ-PLN-0033

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Contents

Glossary of Terms and Acronyms	3
1 Introduction	5
1.1 Background	5
1.2 Purpose and Scope of the Soil and Water Management Plan	5
1.3 SWMP Objectives	5
2 Project Description	6
2.1 Project Overview	6
2.2 Site Location	6
2.3 Scope of Work	10
3 Environmental Management System	12
3.1 Environmental Management Documents	12
3.2 Environmental Management Structure and Responsibilities	13
3.3 Legal and Compliance Requirements	16
4 Existing Environment	17
4.1 Soil and Geology	17
4.2 Hydrology	17
4.2.1 Groundwater	17
4.2.2 Surface Water	17
5 Environmental Risk Management	18
5.1 Erosion and Sediment Control Plan	19
5.2 Environmental Monitoring Program	19
5.3 Environmental Inspections and Audits	19
5.4 Corrective and Preventative Actions	20
5.5 Environmental Incident and Emergency Response	20
Appendix 1. Environmental Management Measures	22
Appendix 2. Erosion and Sediment Control Plan	27

Glossary of Terms and Acronyms

Term	Definition
5BF	No.5 Blast Furnace
6BF	No.6 Blast Furnace
Approval	Infrastructure Approval SSI-22545215
bgl	Below ground level
BlueScope	BlueScope Steel (AIS) Pty Ltd
BSL	BlueScope Steel Limited
BTEX	Benzene, Toluene, Ethylene, Xylene
CEMP	Construction Environment Management Plan
CLM Act	Contaminated Land Management Act 1997
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning and Environment
EIS	No.6 Blast Furnace Reline Project Environment Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Agency
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
ha	Hectare
HSE	Health, Safety and Environment
Incident	An incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.
IMED	Ironmaking East Drain
JSEA	Job Safety and Environment Analysis
km	Kilometre
m	Metre
Material Harm	Material harm is harm that: a) Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or b) Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practical measures to prevent, mitigate, or make good harm to the environment.
Non-compliance	A non-compliance is an occurrence or set of circumstances that breach the conditions of the Infrastructure Approval, Environment Protection Licence and/or any other legal requirement
Non-conformance	A non-conformance is a situation or event that does not comply with the safeguards required in this CEMP
PAH	Polyaromatic Hydrocarbons
PIRMP	Pollution Incident Response Management Plan
PKSW	Port Kembla Steelworks
POEO Act	Protection of the Environment Operations Act 1997



Term	Definition
Project	No.6 Blast Furnace Reline Project
SSW	Safe System of Work
SWMP	Soil and Water Management Plan
SWMS	Safe Work Method Statement
T&I SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compounds

1 Introduction

1.1 Background

BlueScope Steel (AIS) Pty Ltd (BlueScope) is one of Australia's leading manufacturers and with its parent company, BlueScope Steel Limited (BSL), is a global leader in finished and semi-finished steel products.

BlueScope's Port Kembla Steelworks (PKSW) currently operates as an integrated iron and steel plant utilising Blast Furnace ironmaking and Basic Oxygen Furnace steelmaking operating model. The plant is co-located with hot rolling mills for plate and coil and has adjacent manufacturing facilities for cold rolling, coated products, flat products and welded beams. The site is licenced and operates in accordance with Environment Protection Licence (EPL) 6092.

This project aims to return the No.6 Blast Furnace (6BF) to service through a reline process to allow operations to continue at PKSW following the end of the current No.5 Blast Furnace (5BF) campaign with minimal disruption to production levels.

On 3 May 2021 the Minister for Planning and Public Spaces declared the Port Kembla Steelworks Blast Furnace No. 6 Reline Upgrade Project (the project) as Critical State Significant Infrastructure (CSSI) in accordance with sections 5.12(4) and 5.13 of the Environmental Planning and Assessment Act, 1979 (EP&A Act).

On 20 September 2022 the Minister for Planning approved the project under section 5.19 of the EP&A Act subject to conditions specified in Infrastructure Approval SSI-22545215 (Approval).

1.2 Purpose and Scope of the Soil and Water Management Plan

This Soil and Water Management Plan (SWMP) has been prepared as part of the Construction Environmental Management Plan (CEMP) to support BlueScope's Environmental Management System for the 6BF Reline Project (the project) and is applicable to the construction phase of the project.

The SWMP describes the strategies and controls that will be implemented to mitigate or minimise the risks associated with the construction activities of the project which have the potential to cause water pollution and soil erosion. The SWMP has been developed in accordance with the Approval Conditions, No.6 Blast Furnace Reline Environment Impact Statement (EIS), and EPL 6092.

1.3 SWMP Objectives

The objectives of the SWMP are to:

- Describe the measures and controls to be implemented to minimise the potential for soil erosion and water pollution during construction;
- Describe the measures and controls to be implemented to manage runoff from the project area; and
- Ensure disturbed materials that have the potential to be contaminated are appropriately managed to minimise the potential impact to the environment.

2 Project Description

2.1 Project Overview

The project involves the reline of 6BF over a period of approximately 3 years to return it to service and commence ironmaking after 5BF ceases operation. Major construction work will be required within the blast furnace and surrounding facilities to deliver the project.

The reline of the furnace initially involves removal of remaining burden material and iron skull, followed by stripping of the staves, refractories and hearth from inside the shell. In places, repairs to the furnace shell will be required. Once stripped, installation of the new hearth, sidewall refractories and staves will be completed, together with repairs/replacement of the tuyeres, tapholes, furnace cooling systems and instrumentation. Significant work will also be required to prepare each of the 6BF ancillary systems for continuous operation across the length of the new campaign.

Following construction and equipment commissioning, 5BF will be ramped down and decommissioned. 6BF will then be hot-commissioned and ramped up for operation. 5BF and 6BF will not operate concurrently.

2.2 Site Location

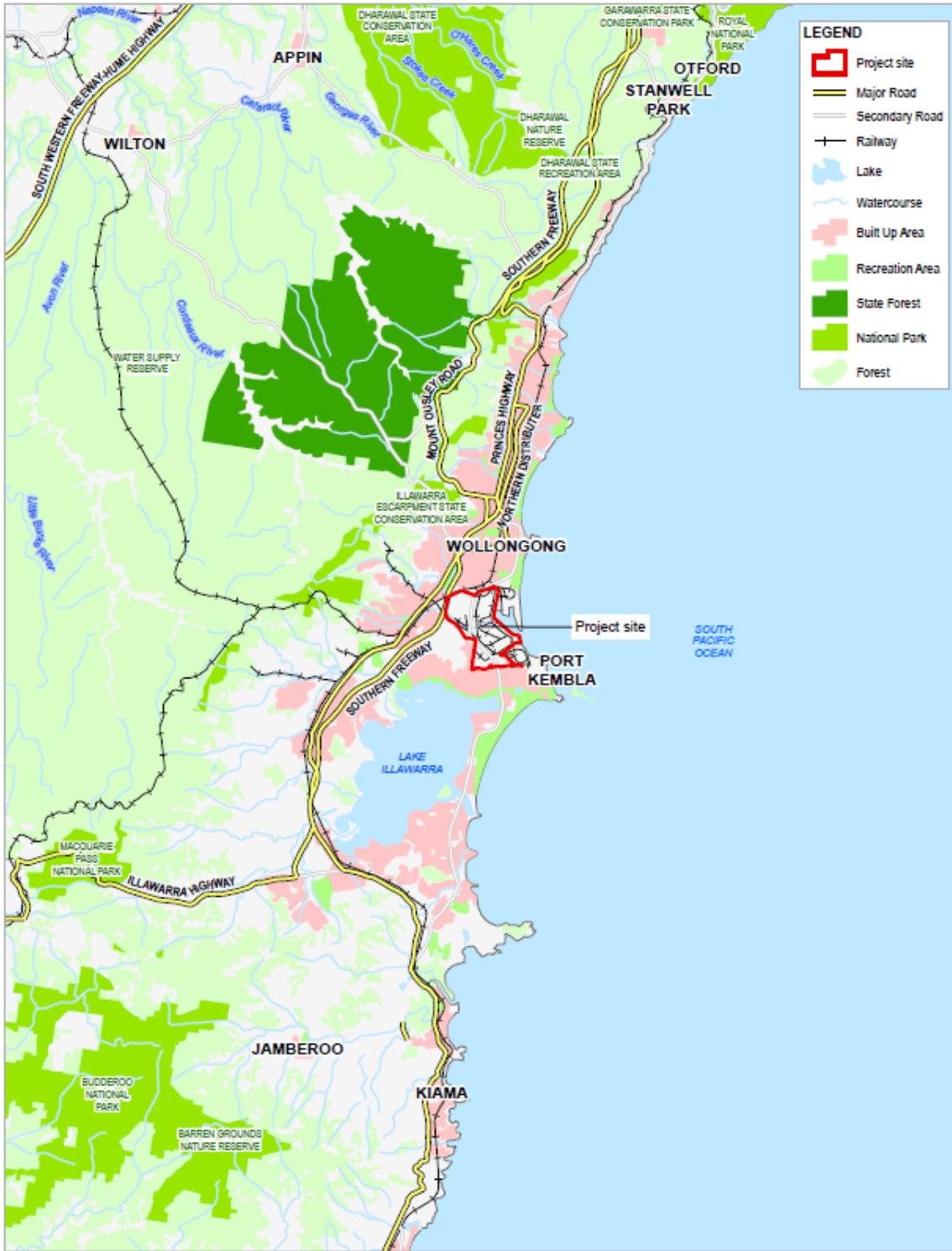
The project is located in Port Kembla in the Wollongong Local Government area and Illawarra region of NSW as shown in Figure 1. Sydney is approximately 80 km to the north of Port Kembla, while the Wollongong Central Business District is approximately 2.5 km to the north, and Lake Illawarra is approximately 3 km to the south. Port Kembla is the main industrial centre of the Illawarra region.

The PKSW site is zoned IN3 – Heavy Industrial under State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP). PKSW and the adjacent Springhill Works together comprise the largest site in the Port Kembla industrial area, occupying approximately 750 ha, and are mostly built around the western and southern side of Port Kembla's Inner Harbour. The PKSW site is a multi-use industrial area which includes storage, manufacturing, port berths, private internal roads and offices. Access to PKSW is provided by Springhill Road, Five Islands Road and Flinders Street, and then private internal roads within PKSW.

The project site is an established (brown-field) site located within the No.2 Works at the PKSW. The land to which this project applies, including all connecting infrastructure and materials handling elements that require upgrades as part of the project, is within the southern section of the No.2 Works, and is part of the ironmaking facilities, located within Lot 1 DP 606434. Ancillary construction facilities will also be required and will be located within the broader PKSW site as shown on Figure 2.

The area surrounding the Port Kembla industrial area is primarily occupied by residential development. These urban areas provide small and large-scale retail outlets, community services (e.g. medical facilities, hospital, schools and sporting facilities) and commercial facilities (e.g. banking and post office). The closest urban developments to PKSW are the suburbs of Cringila, Berkeley, Lake Heights, Warrawong and Port Kembla to the south, Unanderra, Cobblers Hill, Mount St Thomas, Coniston and Figtree to the north and west. The urban areas of Cringila are located adjacent to the No.1 Works and No.2 Works areas and are the nearest to the project site, being approximately 1.2 km to the southwest as shown on Figure 3.

The PKSW has several licenced water discharge points specified in EPL 6092. The locations of these discharge points are shown on Figure 4.



<p>Paper Size ISO A4 0 1.5 3 4.5 6 Kilometres</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1994 Grid: GDA 1994 MGA Zone 56</p>	<p>BlueScope Steel Ltd No.6 Blast Furnace Reline and Operations Environmental Impact Statement</p> <p>Regional Location</p>	<p>Project No. 12541101 Revision No. 0 Date 21/10/2021</p> <p>FIGURE 2-1</p>
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Figure 1: Project Regional Location. Extracted from *Blast Furnace No.6 Reline Project Environmental Impact Statement* (p. 5) GHD, 2022.

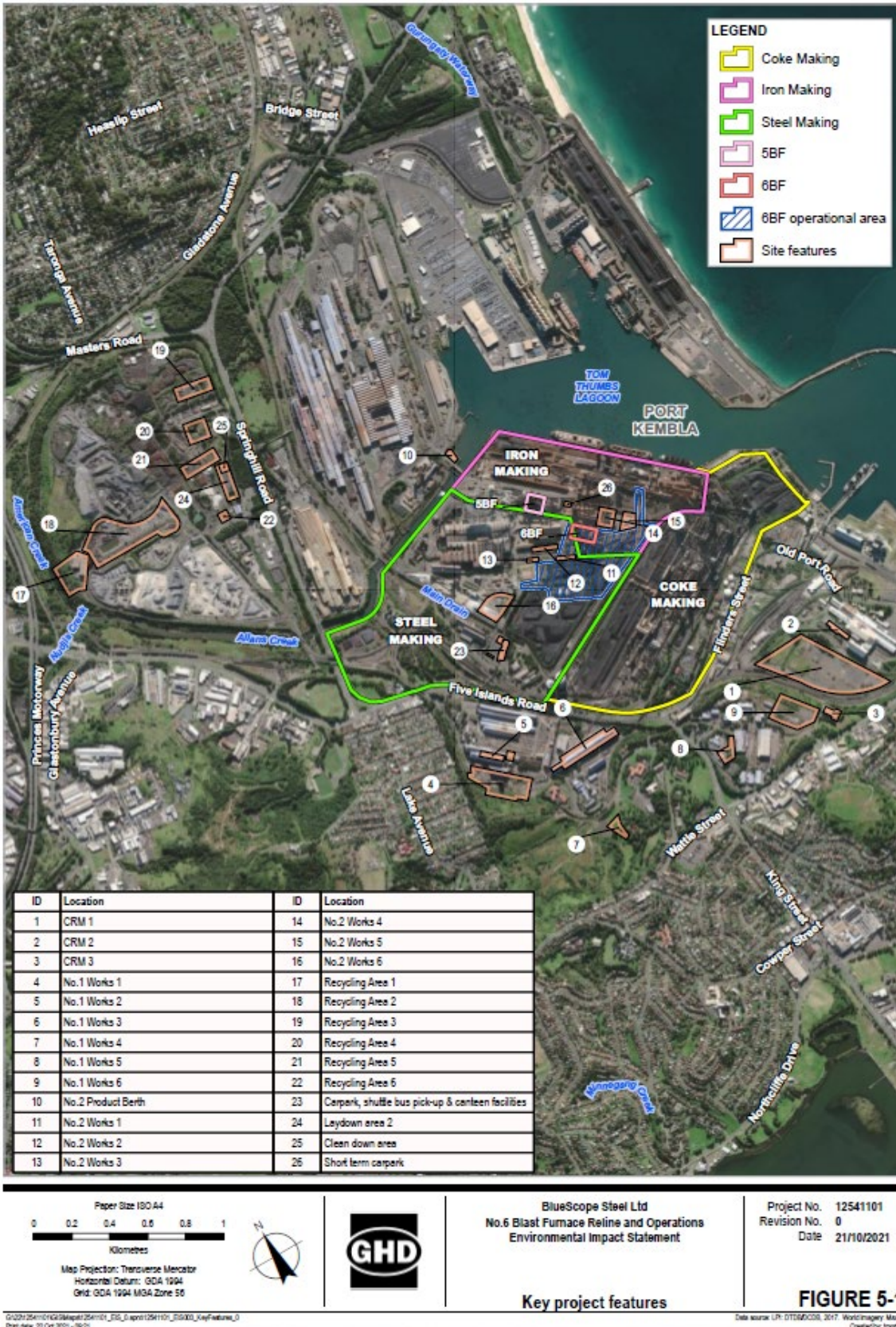


Figure 2: Project site and laydown areas. Extracted from *Blast Furnace No.6 Reline Project Environmental Impact Statement* (p. 28) GHD, 2022.



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Figure 3: Location of Sensitive Receivers. Extracted from *Blast Furnace No.6 Reline Project Air Quality Impact Assessment* (p. 19) GHD, 2022.

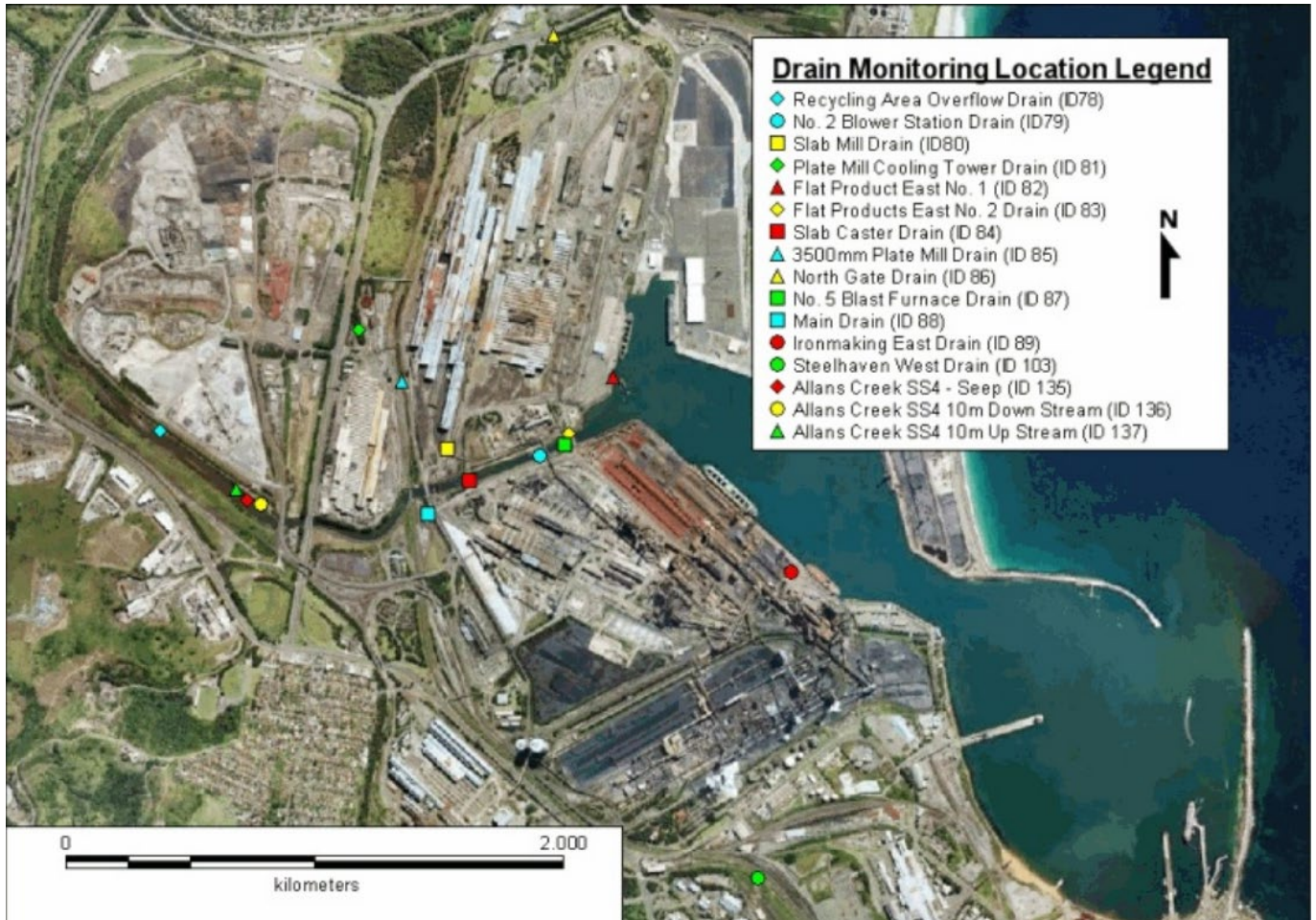


Figure 4: Location of EPL 6092 licenced water discharge points

2.3 Scope of Work

Construction activities will involve the following tasks:

- Removal of the remaining burden materials
- Removal of the iron skull
- Removal of worn carbon block refractories in the hearth
- Removal of worn refractories in the remainder of the vessel
- Demolition of other equipment including:
 - Cooling staves which protect the blast furnace shell
 - Hot Blast Main refractory lining, including the expansion joints
 - Clarifier tank and associated equipment where required
- Repairs to the blast furnace shell where required
- Installation of a new clarifier tank and associated equipment
- Installation of the new hearth, sidewall refractories and staves
- Repair/replacement of tuyeres, tapholes and instrumentation
- Repair, maintenance and/or upgrade of ancillary equipment including:
 - Furnace cooling systems

- Hot Blast system including the stoves, with the addition of a stove Waste Gas Heat Recovery (WGHR) system
- Gas system, with addition of a Top Gas Recovery Turbine (TRT)
- Furnace Top, including the charging equipment, bleeder valves and outrigger crane
- Casthouse Floors and associated equipment
- Stockhouse (raw materials feed system)
- Automation and power systems
- Services
- Installation of a new slag granulation system
- Installation of primary ferrous feed system.

The scope of work for the construction phase of the project includes the following surface disturbing works:

- Excavation;
- Surface grading;
- Piling;
- Concrete pad/slab foundations;
- Installation of access roads; and
- Installation of pavements.

3 Environmental Management System

3.1 Environmental Management Documents

This SWMP forms part of the CEMP for the project. BlueScope's existing environmental management procedures and systems apply to all project activities. These include but are not limited to the procedures and systems listed in Table 1.

Table 1 - BlueScope Environmental Management Procedures and Systems

Document/System	Reference	Purpose
BlueScope's HSEC Policy	BSL-MS-P-01	Identifies BlueScope's commitment to Health, Safety, Environment, and Community
ASP Manufacturing Management Systems Manual	MM.BZ-MS-M-01-01	Describes at the highest level, those systems and processes used by BlueScope Australian Steel Products Manufacturing Businesses to effectively manage its operations
BlueScope's Safety, Environment, and Quality system	SEQ System	A management system for Safety, Environment and Quality that provides access to the SEQ procedures, tools and other resources.
HSE Risk Management	BSL-HSE-SD-03-01	Sets the requirements and mechanisms for implementing the BlueScope Risk Management Standard within a Health, Safety and Environmental (HSE) context.
HSE Incident Management	BSL-HSE-SD-12-01	Sets the requirements for incident management across BlueScope in order to meet the expectations of the BlueScope Health, Safety & Environment (HSE) Management System
Management of Excavated Soil at PKSW	MA-ENV-02-02	Outlines how excavated soil, arising during construction, demolition or maintenance activity, is managed to minimise harm to human health and the environment
Fugitive Dust Management System	MA-ENV-02-02	Describes the system used to monitor and report both fugitive dust emissions and the conditions contributing to the dust emissions from the BlueScope PKSW site
Vegetation Management Plan	MA-ENV-02-08	Identifies the requirements of tree planting, pruning, removal, weed management and disposal
Management of Threatened Species, The Green and Golden Bell Frog, <i>Litoria Aurea</i>	MA-ENV-03-03	Identifies the actions and requirements necessary to promote the development and maintenance of existing sub-populations of the Green and Gold Bell Frogs on the PKSW site.
Stockpile Environment Management Plan	MA-ENV-03-08	Details the how stockpiles and fugitive dust emissions are to be managed at BlueScope's PKSW site
Biodiversity Management Plan	MA-ENV-03-09	Assists with the identification, protection and management of native vegetation and fauna habitats across BlueScope's Illawarra sites
Unexpected Finds Procedure	MA-ENV-03-11	Provides guidance for the management of any unexpected finds including contamination and heritage items on BlueScope Steel licenced sites in New South Wales
Spill Response Guidelines	MA-ENV-11-02	Outlines the necessary steps to be taken by Plant Departments to prepare for or respond to spills reported within their area.
Pollution Incident Response Management Plan for NSW Licenced Premises	MA-ENV-11-04	Details the procedure for the notification of pollution incidents that result in or have the potential to cause material harm to the environment in BlueScope licenced sites across NSW

Document/System	Reference	Purpose
Contact Procedure for Complaints and Enquiries	SP-ENV-07-03	Define actions to be followed by the Environment Department personnel, External Affairs personnel and the PKSW Switchboard in relation to handling complaints and enquiries
Management of Waste Material	DIV-AR-RS-01	Describes the system for waste management within PKSW and for movement of waste materials to and from the PKSW site
SAP Learning Centre	SAP Learning Centre	A repository of training and support materials to assist in the use of the BlueScope SAP systems and processes
Job Safety and Environment Analyses	F.BZ-SEQ-S-03-02.02	A tool used to identify task related hazards and controls based on the sequential job steps or unplanned changes to the job
Safe System of Work	BZ-OHS-S-03-01	Processes that may include procedures, risk assessments, permits, inductions and training, that collectively form a system for undertaking work in a safe manner
Safe Work Method Statement	F.BZ-SEQ-S-09-10.21	A tool used to identify task related hazards and controls based on the sequential job steps or unplanned changes to the job

Specific Environment Management Documents relevant to the construction phase of the project are required in accordance with the conditions of Approval and commitments made in the EIS. Some of the requirements are adequately covered by existing BlueScope procedures, while others have been prepared specifically for the project as outlined in Table 2.

Table 2: Specific Environment Management Plans

6BFR Management Plan	Requirement	Reference
Construction Environmental Management Plan	Approval Condition C2	6BFR-PRJ-PLN-0008
Erosion and Sediment Control Plan	Approval Condition C3, EIS Commitment	Appendix 2 of this document
Construction Traffic Management Plan	Approval Conditions B41, C3, EIS Commitment	6BFR-PRJ-PLN-0020
Unexpected Contamination Procedure	Approval Conditions B47, C3	MA-ENV-03-11
Noise and Vibration Management Measures	Approval Condition C3, EIS Commitment	6BFR-PRJ-PLN-0032
Community Consultation and Complaints Handling	Approval Condition C3	Section 3 6BFR-PRJ-PLN-0004 SP-ENV-07-03
Soil and Water Management Plan	EIS Commitment	6BFR-PRJ-PLN-0033
Dust Management Plan	EIS Commitment	6BFR-PRJ-PLN-0034
6BF Reline Environmental Induction	EIS Commitment	6BF-GEN-PRE-0031
6BF Emergency Response Plan	EIS Commitment	MA-BF6-EMG-01
6BFR Risk Management Plan	Nil	6BFR-PRJ-PLN-0011

3.2 Environmental Management Structure and Responsibilities

All personnel working on the 6BF Reline project must comply with regulatory and BlueScope requirements and must conduct work in a proper and efficient manner to protect the environment.

The Project Director takes primary responsibility for environmental issues and compliance with the CEMP and all associated documents including the SWMP. Environmental advisors within the BlueScope Environment Department will support the Project Director and will assist managers and supervisors fulfill their accountabilities.

Each position in the 6BF Reline management team has defined responsibilities for the management of environmental aspects and issues as defined in the CEMP. Environmental management responsibilities for contractor managers and supervisors working on the project are also defined in the CEMP.

With respect to soil and water management, the environmental responsibilities for the key management and supervision roles include (but are not limited to) those listed in Table 3.

Table 3: Key Management Roles and Environmental Responsibilities

Role	Responsibilities
Project Director	<ul style="list-style-type: none"> Develop a culture in which environmental effects are considered at all times.
Project Manager	<ul style="list-style-type: none"> Develop a culture in which environmental effects are considered at all times. Participate in environmental audits and communication sessions. Provide resources to ensure that actions to address environmental issues are implemented. Ensure that adequate environmental evaluations are made of all modification designs and plant and equipment purchases. Ensure that systems are in place to inform employees, contractors and visitors of pertinent environmental issues. Ensure that meetings are held to discuss environmental issues. Ensure that desktop exercises are carried out to test the effectiveness of Emergency Response Plans. Ensure that there is responsible management of contractors on the site. Ensure that competent and trained, responsible engineers and supervisors exist to manage contractors on the works.
Engineering Manager	<ul style="list-style-type: none"> Ensure that management systems are in place and understood to give environmentally safe design and operation. Ensure that environmental hazards and risks are identified for all plant and major equipment. Ensure that designs are fit for purpose and that adequate consideration has been given to environmental issues. Ensure that all engineering staff are inducted and have received the required training to enable adequate environmental management of site. Promote the involvement of all employees in improving environmental management. Conduct environmental audits to evaluate compliance with environmental management plans and systems as per the audit/inspection schedule. Participate in environment meetings. Identify hazards and risks through analysis and inspection, including personnel, plant and environment. Focus on the elimination of environmentally hazardous acts, and rectify unsafe conditions quickly. Conduct workplace inspections.
Construction Manager	<ul style="list-style-type: none"> Contribute to a positive environmental culture by example. Ensure that management systems are in place and understood to provide an environmentally safe construction workplace. Ensure that environmental hazards and risks are identified on all construction activities. Arrange construction pre-start hazard-analysis studies for all “at risk” operations. Participate in environment meetings. Participate in environmental inspections and serious incident investigations. Participate in environmental audits. Focus on the elimination of environmentally unsafe acts, and rectify unsafe conditions quickly. Ensure that there is responsible management of contractors on the site. Ensure that competent and trained, responsible engineers and supervisors exist to manage contractors on the works.

Role	Responsibilities
HSE Manager	<ul style="list-style-type: none"> • Participate in a pre-start environmental review with the vendors'/Contractor's management to facilitate an Environmental Bridging Document to remove any uncertainty/differences between this CEMP and the vendors'/Contractor's CEMP. <hr/> <ul style="list-style-type: none"> • Contribute to a positive environmental culture by example. • Ensure that meetings are held to discuss environmental issues. • Ensure that management systems are in place for environmentally safe execution of the project. • Report HSEC matters and performance to BlueScope. • Coordinate and participate in drills and exercises to test the effectiveness of Emergency Response Plans. • Review training needs for all employees and provide training as required. • Ensure that proper training is provided to enable an environmentally safe execution of the project. • Ensure that environmental hazards and risks are identified and control measures introduced on all project activities. • Participate in environmental inspections and serious incident investigations. • Participate in environmental audits.
Commissioning Manager	<ul style="list-style-type: none"> • Contribute to a positive environmental culture by example. • Ensure that management systems are in place and understood to provide an environmentally safe workplace. • Ensure that environmental hazards and risks are identified on all commissioning activities. • Arrange commissioning pre-start hazard-analysis studies for all "at risk" operations. • Participate in environment meetings. • Participate in environmental inspections and serious incident investigations. • Participate in environmental audits. • Focus on the elimination of environmentally unsafe acts, and rectify unsafe conditions quickly. • Ensure that there is responsible management of contractors on the site. • Ensure that competent and trained, responsible engineers and supervisors exist to manage contractors on the works.
Area Managers	<ul style="list-style-type: none"> • Ensure that environmental hazards and risks are identified in design stage. • Ensure that management systems are followed to give environmentally safe designs. • Ensure self and others' environmental awareness at all times. • Be aware of environmental hazards and risks in the plant area of activity. • Promote a culture in which environmental effects are considered at all times. • Define and document environmentally safe systems of work and, through consultation, ensure they are applied. • Ensure that all incidents are thoroughly investigated to avoid re-occurrence. • Ensure that there is responsible management of contractors on the site. • Ensure that competent and trained, responsible engineers and supervisors exist to manage contractors on the works. • Ensure that contractors and employees understand any environmental hazards associated with performing tasks. • Promote the involvement of all employees in improving environmental awareness. • Focus on the elimination of environmentally unsafe acts, and rectify unsafe conditions quickly. • Conduct environmental inspections, monitor behaviour on site and participate in audits. • Notify incidents and address environmentally unsafe acts and conditions in accordance with the project's Environment Management System, and follow-up to ensure corrective and preventative actions are timely and effective. • By actions, demonstrate to contractors at all times the commitment of the 6BF Reline team to the highest standards of environmental management. • Participate in accident/incident investigations.

Role	Responsibilities
Environment Advisor	<ul style="list-style-type: none"> • Promote a culture in which environmental effects are considered at all times. • Liaise with regulatory bodies and other external agencies. • Promote the involvement of all employees in improving environmental compliance. • Focus on the elimination of environmentally hazardous acts, and rectify unsafe conditions quickly. • Ensure self and others' environmental awareness at all times. • Participate in accident/incident investigations. • Report to the 6BF Reline Management team on environmental issues • Ensure that all incidents are thoroughly investigated to identify root causes.
Construction Coordinators	<ul style="list-style-type: none"> • Compliance with the requirements of the project's Environmental Management System. • Ensuring environmental aspects are adequately addressed and mitigated during Job Safety and Environment Analyses and execution of Works. • Initiation and completion of environmental audits and inspections. • Reporting all incidents, accidents and non-conformance in accordance with the CEMP. • Participation in relevant investigations of accidents, incidents and non-conformance. • Demonstrating to the vendor / contractor workforce, by their actions, commitment to the highest standards of environmental management. • Provision of appropriate resources to control / mitigate environmental hazards. • Attendance at team's environment meetings. • Pro-active addressing of environmental issues, looking for improvements and looking after themselves and the environment. • Ensuring hazards and controls are addressed and implemented prior to and during the execution of Works

3.3 Legal and Compliance Requirements

Key legislative requirements relevant to soil and water management for the project include:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Protection of the Environment Operations Act 1997 (POEO Act)
- Contaminated Land Management Act 1997 (CLM Act)
- Environment Protection Licence 6092
- Infrastructure Approval SSI-22545215.

4 Existing Environment

4.1 Soil and Geology

The project site was historically low-lying swampland with soils predominantly including silty sands and clay. However, during the 20th century, the site was filled with blast furnace slag, open hearth slag and coal washery rejects to accommodate industrial activities.

The site surface is flat and generally sealed. Any remaining soil or sediments present on the site are highly disturbed thin coverings overlying fill material. Various investigations (Egis, 2001; GHD, 2004; GHD, 2009; JBS&G, 2016) have refined the understanding of the site, and have broadly identified the following underlying geology:

- Fill material 0 to 6 m below ground level (bgl): Variable quality and composition of slag material, dredged sands and coal wash materials of varying thicknesses, generally in the order of 4 to 6 m deep and of high permeability.
- Estuarine sediments 6 to 15 m bgl: including interbedded sands, silts, clays and muds of variable thicknesses.
- Deeper bedrock materials are reported as present at depths from 19 m bgl as weathered latite underlain by sandstone in some areas.

A review of acid sulfate soil risk mapping (DPIE, 2021a) indicates that the project site is classified as disturbed terrain at an elevation of greater than four metres. Estuarine sediments within Allans Creek and the Inner Harbour are mapped as having a high probability of occurrence of acid sulfate soils. As the site contains filled areas resulting from the reclamation of Tom Thumb Lagoon, it is possible that some acid sulphate soil material will be present, particularly in the estuarine sediments underlying fill material.

PKSW is listed as a contaminated site by the EPA and ongoing management of site contamination occurs under EPL 6092. Previous investigations undertaken at the project site have identified it as a moderate contamination risk for heavy metals, total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylenes (BTEX), polyaromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs).

4.2 Hydrology

4.2.1 Groundwater

Previous groundwater investigations indicated that on site groundwater is generally shallow, ranging from approximately 1 to 8 m bgl, and encountered within fill materials overlying the less permeable alluvial deposits. JBS&G (2016) recorded standing groundwater levels near 6BF ranging between 3.5 to 5.6 m bgl. Groundwater flow was inferred to flow northeast, towards Port Kembla Inner Harbour, in line with the local topography

Investigations by GHD in 2009 concluded that the site has two primary aquifers:

- Fill/shallow estuarine aquifer (5 to 10 m bgl): a shallow unconfined aquifer, of variable quality and yield, which may be discontinuous and intermittent.
- Deeper estuarine aquifer (greater than 10 m bgl): a partially confined aquifer underlying fill material and dredged sediments.

Elevated concentrations of heavy metals, TPH, PAHs, VOCs, cyanide, ammonia, nitrate, nitrogen and fluoride have been found within groundwater across the PKSW site. BlueScope has established a network of groundwater monitoring wells across the PKSW site with wells nearest to the project site located to the east and west of the proposed 6BF Slag Handling Area and to the north of 6BF Stockhouse.

4.2.2 Surface Water

The majority of the project site has established stormwater drainage consisting of a series of sumps and collection tanks which capture the 'first flush' of rainfall events and any potential spills. Following the first flush and when sumps reach capacity, stormwater drains to the Ironmaking East Drain (IMED) and is subsequently pumped to the No. 2

Blower Station Drain for release to Allans Creek. During major rainfall events, the IMED weir can overtop leading to discharge to the Inner Harbour via licence discharge Point 89.

The slag handling area does not currently have a drainage system in place. As part of the project, the area will be prepared with hardstand graded to new internal drains that will flow into either a new slag pit settling pond or the granulator settling pond. In high rain events the settling ponds will overflow to the IMED via new and existing stormwater networks.

The stormwater drainage system is available in Drawing 339042.

The stormwater catchment area is shown in Figure 5.

During construction, there will be no process water discharges from the project site.

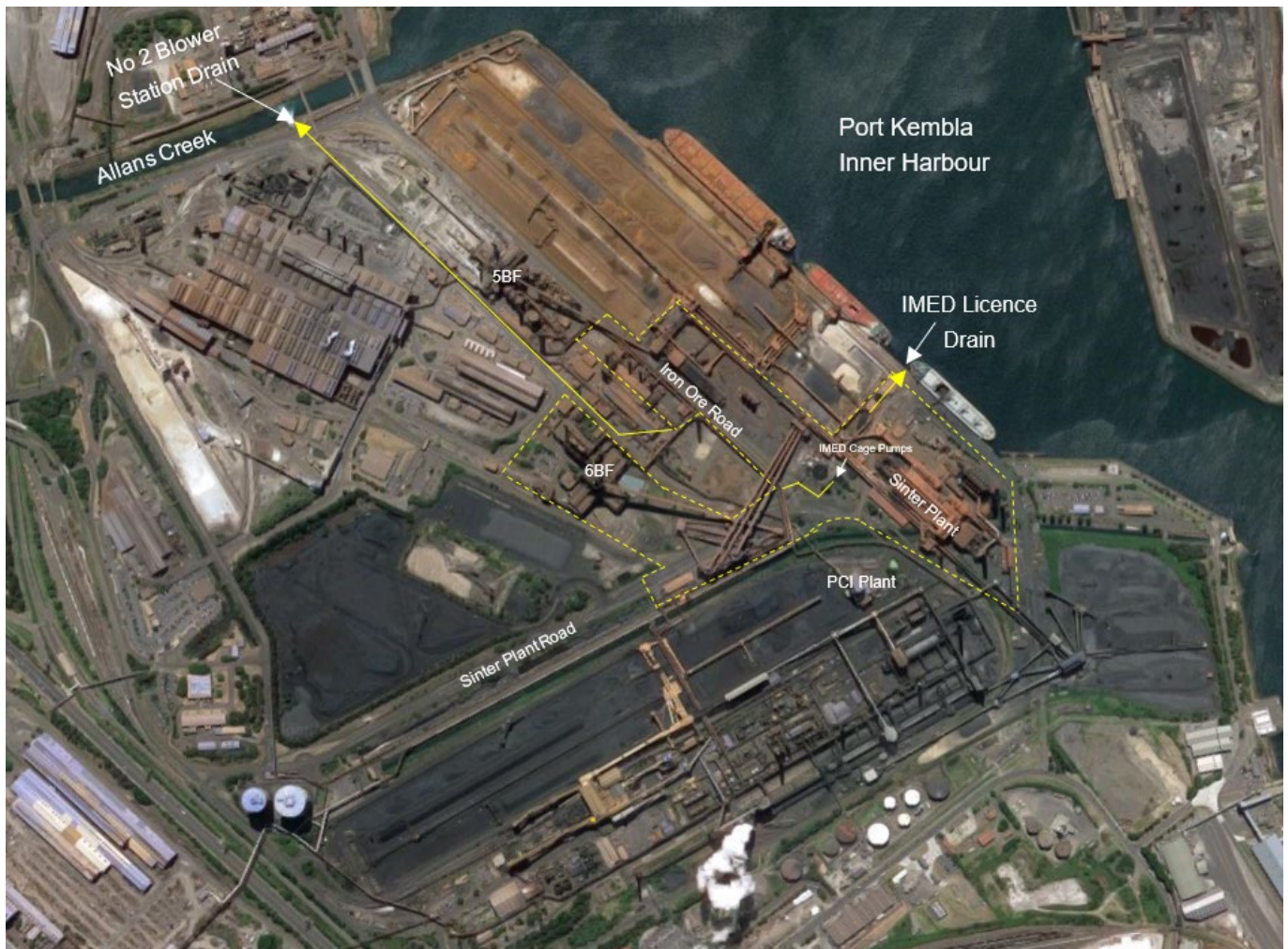


Figure 5: 6BF Reline Stormwater catchment area

During commissioning, process water will commence discharging to drain in accordance with the Approval and EPL 6092. A commissioning Water Quality Management Plan detailing mitigation measures will be developed prior to execution of the commissioning activities.

5 Environmental Risk Management

Potential risks to water quality during the construction phase include:

- Release of poor-quality stormwater into drains and waterways where it is impacted by excavation works and other construction activities. This may include elevated solid particles, reduced dissolved oxygen, pH impacts, and the presence of organic matter and other debris.

- Mobilisation of existing contamination within soils.

5.1 Erosion and Sediment Control Plan

In accordance with condition C3(a) of the Approval and commitments made in the EIS, an Erosion and Sediment Control Plan (ESCP) has been prepared by SMEC Australia Pty Ltd and is attached as Appendix 2 of this SWMP.

The management measures listed in the ESCP and EIS relevant to this SWMP have been incorporated into Appendix 1.

This ESCP will need to be reviewed and updated following change in construction methods and/or site conditions to ensure it remains relevant to the works being undertaken onsite.

5.2 Environmental Monitoring Program

Throughout the project construction phase, monitoring will be undertaken as specified in Table 4 to determine the effectiveness of environmental controls.

Table 4: Monitoring during Construction

Aspect	Parameter	Location	Methodology	Frequency	Responsibility	Evidence
Surface Water	Discharge to waterways	Discharge at Ironmaking East Drain	Sampling and Analysis	As specified in EPL 6092 at a minimum	Environment Department	Laboratory Data (Monitor Pro)
		Discharge at No.2 Blower Station Drain	Sampling and Analysis	As specified in EPL 6092 at a minimum	Environment Department	Laboratory Data (Monitor Pro)
Groundwater	Contamination	Environmental boreholes	Sampling and Analysis	Annually	Environment Department	Consultant Reports
Soil	Contaminated material	Excavated material	Sampling and Analysis	As required	Environment Department	Laboratory Report

In addition to the monitoring listed in Table 4, weather forecasts will be monitored to determine if heavy rainfall or high winds might affect site activities. Daily notifications from the Early Warning Network will be emailed to relevant personnel including the Construction Manager, HSE Manager, and Environment Advisor.

5.3 Environmental Inspections and Audits

All personnel working on the project will be encouraged to undertake environmental audits of activities as they are performed and record the audits and any findings in BlueScope's incident and risk management database.

Inspections of environmental controls will be conducted as a monthly audit by the construction manager (or a nominated delegate) to confirm the controls are in place and working effectively, and to identify improvement opportunities. The inspections may constitute a general assessment of control conditions, targeted inspections, adequacy assessment of controls, or activity observations.

Table 5: Inspections during Construction

Environmental Controls	Aspect	Potential Impact	Performance Criteria	Frequency
Bunding	Loss of containment	Discharge to waterway	No damage Appropriate capacity in accordance with Australian Standards	Monthly or after heavy rainfall

Environmental Controls	Aspect	Potential Impact	Performance Criteria	Frequency
Chemical Storage	Loss of containment	Discharge to waterway Odour	No damage to containers or bunds Appropriate storage and bund capacity in accordance with Safety Data Sheets and Australian Standards where applicable	Monthly and on use
Street Sweepers	Dragout	Dust emissions	No material on roadways Appropriate service schedule	Monthly
Water carts	Emissions from stockpiles or during excavation	Dust emissions	No emissions from stockpiles or during excavation activities	Monthly

Observations of all inspections and audits will be documented in an incident and risk management system. Any corrective actions identified must be assigned to a suitable person with an appropriate timeframe for completion.

5.4 Corrective and Preventative Actions

A non-conformance is a situation or event that does not comply with the safeguards required in this SWMP. All personnel working on the project may raise any non-conformances or improvement opportunities as they are identified.

A non-compliance is an occurrence or set of circumstances that breach the conditions of the Infrastructure Approval, Environment Protection Licence and/or any other legal requirement. In accordance with Condition C11 of the infrastructure Approval, non-compliances will be reported to the DPE via the Major Projects website within seven days of becoming aware of any non-compliance. Non-compliances to the EPL will be reported to the EPA.

Non-conformances and non-compliances will be recorded in BlueScope's incident and risk management database and managed in accordance with BlueScope's HSE Incident Management procedure (BSL-HSE-SD-12-01). Corrective and preventative actions addressing any non-conformances or non-compliances will be assigned to relevant personnel with an appropriate completion date. These actions will be recorded in the incident and risk management database entry.

5.5 Environmental Incident and Emergency Response

An incident is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance. Material harm is harm that:

- Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or
- Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practical measures to prevent, mitigate, or make good harm to the environment).

A project-specific 6BFR Emergency Response Plan (MA-6BF-EMG-01) has been developed to ensure that effective systems and appropriately trained personnel are in place to detect and respond to an emergency. This plan identifies potential emergency scenarios and their safety and environmental impacts, describes the response process, specifies personnel who are responsible and others that must be notified, and details the locations of emergency assembly areas, emergency shower and eyewash stations, spill kits, and fire suppression equipment.

All incidents must be reported and managed in accordance with BlueScope's HSE Incident Management procedure (BSL-HSE-SD-12-01) and documented in an incident and risk management system. Corrective and preventative actions relating to incidents will be included in the incident report. Contractor incident reports must be provided to



the plant or work owner (as identified in the relevant JSEA/SSW/SWMS) such that they can be documented in the project's incident and risk management system.

A BlueScope Environment Officer is available 24 hours 7 days per week on 1800 640 252 or (02) 4275 7522. The Environment Officer will receive and respond to incident reports, provide clean up assistance where required, and will notify appropriate government agencies, such as the EPA and DPE in accordance with relevant statutory requirements. In accordance with Condition C10 of the Infrastructure Approval, incidents relating to the project will be reported to the DPE via the Major Projects website.

BlueScope has an existing Pollution Incident Response Management Plan (PIRMP) for the Port Kembla Steelworks as required by the Protection of the Environment Operations Act 1997 (POEO Act). The existing PIRMP (MA-ENV-11-04) applies to all activities on the PKSW premises, including those associated with the project.

Appendix 1. Environmental Management Measures

The Environmental Management Measures identified in the EIS relevant to the SWMP are detailed in Table 6.

Table 6: SWMP Environmental Management Measures during Construction

Environmental Management Measure	Phase	Timing/ Frequency	Location	Responsibility	Source/ Reference	Evidence
Prior to construction commencing, a site specific Soil and Water Management Plan (SWMP) will be prepared. The plan will include arrangements for managing wet weather events, specific controls and environmental inspection requirements. The SWMP will include an Erosion and Sediment Control Plan (ESCP) which will be prepared in accordance with the Blue Book - Managing Urban Stormwater: Soils and Construction (4th edition , Landcom, 2004) and Volume 2 (DECC, 2008a).	Construction	Pre-construction	All areas	Environment Advisor	EIS	Soil and Water Management Plan Erosion and Sediment Control Plan (Appendix 2 of this document)

Environmental Management Measure	Phase	Timing/ Frequency	Location	Responsibility	Source/ Reference	Evidence
<p>The ESCP will detail the erosion controls used for the project and where they will be established. The ESCP will include soil specific measures to:</p> <ul style="list-style-type: none"> – Prevent sediment moving off-site and sediment laden water entering any watercourse, drainage lines, or drain inlets – Prevent mixing of soils – Ensure soils are replaced in their pre-existing configuration during rehabilitation where possible – Reduce water velocity overland and capture sediment on site – Minimise the amount of material transported from site to surrounding pavement surfaces – Divert clean water around the site – Install measures and site entry and exit points to minimise movement of material onto public roads 	Construction	Pre-construction	All areas	Environment Advisor	EIS	Erosion and Sediment Control Plan (Appendix 2 of this document)
<p>Spill management will involve:</p> <ul style="list-style-type: none"> – EPA compliant bunding of all hazardous chemicals – Spill kits readily available in clearly defined location 	Construction and Commissioning	At all times	Process areas and areas where chemicals are stored	All personnel	EIS Spill Response Guidelines Emergency Response Plan	Audits/Inspections
Erosion and sediment controls will be established prior to works commencing on site.	Construction	Prior to construction	All areas	Construction Manager Work Crews	EIS	Audits/Site inspections
Erosion and sediment controls will be inspected on a regular basis and replaced when their function is compromised.	Construction	Quarterly	All areas	Construction Manager Work Crews	EIS	Audits/Site inspections

Environmental Management Measure	Phase	Timing/ Frequency	Location	Responsibility	Source/ Reference	Evidence
Erosion and sediment controls will be inspected promptly after rainfall events.	Construction	After rainfall	All areas	Construction Manager Work Crews	EIS	Audits/Site inspections
If excavations are required during demolition works, soil generated will be reused where applicable. Excess spoil not required or able to be reused onsite will be disposed of appropriately as per the EPA's Waste Classification Guidelines (2014).	Construction	At all times	All areas	Construction Manager Work Owner	EIS Management of Excavated Soil at PKSW Waste Management Procedure	Laboratory results Waste Transport Certificates
Vehicles will be restricted to existing access routes where practical.	Construction	At all times	All areas	HSE Manager Logistics Manager	EIS	Construction Traffic Management Plan
Establish access to sites requiring ground-disturbing works via stabilised entry and exit points that permits tyres to be inspected and washed or brushed to remove dirt and mud in order to prevent tracking of sediments off the work site.	Construction	At all times	Areas where ground disturbing works are required	Construction Manager	ESCP	Cleaning facilities Audits/Site inspections Construction Traffic Management Plan
Disturbed areas will be returned to pre-existing condition following the completion of construction.	Construction	At all times	All areas	Construction Manager Project Manager	EIS	Photographs
Plant and machinery will be inspected regularly to ensure that they are in sound working order	Construction and commissioning	At all times	All areas	All personnel	EIS	Pre-start checks

Environmental Management Measure	Phase	Timing/ Frequency	Location	Responsibility	Source/ Reference	Evidence
<p>If soils that appear to be contaminated are exposed during construction of the project, works will cease in the area until further investigation can be undertaken.</p> <p>The following factors are indications of potential contamination on site:</p> <ul style="list-style-type: none"> – Stained or discoloured fill – Hydrocarbon or chemical odour – Construction wastes such as concrete, bricks, timber, tiles, fibre cement sheeting, fragments and pipes – Imported material such as ash, slag or coal chitter containing material. <p>Contaminated soils requiring disposal will be classified under the Waste Classification Guidelines (EPA,2014) prior to disposal.</p>	Construction	At all times	All areas	All personnel	EIS Unexpected Finds Procedure	Incident/Self Reports Laboratory Analysis
All chemical/fuel storage and loading areas will be bunded or otherwise contained.	Construction and commissioning	At all times	All areas	All personnel	EIS	Audits/Inspections
All plant personnel that may encounter chemicals/fuels will be trained in required handling procedures.	Construction and commissioning	At all times	All areas	Project Manager HSE Manager	EIS Training Needs Analysis	SAP Comply Flow
The Proponent must ensure that any construction activities in identified areas of acid sulfate soil risk are undertaken in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998).	Construction	At all times	All areas	All personnel	Condition B48 Unexpected Finds Procedure	JSEA/SWS/SWMS



Environmental Management Measure	Phase	Timing/ Frequency	Location	Responsibility	Source/ Reference	Evidence
The Proponent must: (a) ensure that only VENM, ENM, or other material approved in writing by EPA is brought onto the site; (b) keep accurate records of the volume and type of fill used in relation to the project; and (c) make these records available to the Planning Secretary upon request.	Construction	At all times	All areas	Area Managers Construction Manager	Condition B46	Supplier Documents
Protection of existing stormwater drains in roadside and curbs surrounding the project area with sandbags or gravel socks or similar during excavation or ground-disturbing works	Construction	During ground disturbing works	All roads surrounding project area	Area Managers Construction Manager	ESCP	JSEA/SWS/SWMS Audits/Site Inspections
Install sediment fencing along downhill perimeter in slag handling area. Maintain perimeter berms where reasonable and feasible.	Construction	During Works	Slag Handling Area	Area Managers Construction Manager	ESCP	JSEA/SWS/SWMS Audits/Site Inspections
Install sediment filters with coir log around proposed primary material and equipment staging area	Construction	During Works	6BF Area	Area Managers Construction Manager	ESCP	JSEA/SWS/SWMS Audits/Site Inspections
General runoff from the primary ferrous area may report to the excavation along the length of works within the site. Water captured within the area will be pumped or diverted to the existing soak away pond northwest of the site. Discharge offsite will be in accordance with site EPL and site operational treatment systems	Construction	During Works	Primary Ferrous Area	Area Managers Construction Manager	ESCP	JSEA/SWS/SWMS Audits/Site Inspections
Stockpiles in Slag Handling Area will be managed in accordance with Standard Drawing SD 4-1 per Section 7.3.7 of the ESCP.	Construction	During Works	Slag Handling Area	Area Managers Construction Manager	ESCP	JSEA/SWS/SWMS Audits/Site Inspections



Appendix 2. Erosion and Sediment Control Plan