PROJECT ENVIRONMENTAL MANAGEMENT PLAN (PEMP)

Kyeemagh Public School

Kyeemagh NSW 2216

E-PLAN-03 (Rev. 7 June 2021) | Approved by Andrew Andreou
Uncontrolled copy once printed

taylorau.com.au

TAYLOR

TAYLOR

Table of Contents

1. INTRODUCTION

1.1 PROJECT INFORMATION TABLE

Project information table				
Project name	Kyeemagh Public School			
Location	30A Jacobson Ave, Kyeemagh NSW 2216			
Client	NSW Department of Education			
Duration of contract	80 Weeks			
Taylor contact information				
Company name	Taylor Construction Group Pty Ltd			
ABN	25 067 428 344			
Address	Level 13, 157 Walker Street, North Sydney 2060			
Telephone and fax	Ph.: 02 8736 9000 Fax: 02 8736 9090			
Position	**Contact name**		**Phone numbers**	
Chief Executive Officer	George Bardas		02 8736 9000	
General Manager	Tim Christie		02 8736 9000	
Construction Manager	Yiorgos Crespis		0405 557 874	
Sr Project Manager	Steve Ziaziaris		0413 182 641	
Site Manager	David Pereira		0415 241 170	
HSE Manager	Andrew Andreou		0404 492 614	
Quality Manager	Stephen Player		02 8736 9000	
Senior CA	Scott Dobson		02 8736 9000	
Foreman/Leading hand	Shane Johnston		0436 311 961	
Cadet	Daniel Taylor		0458 476 555	
Document control	**Name**	**Position**	**Signature**	**Date**
Prepared by	Shanil Prasad	Site Engineer		28.5.20
Reviewed by:	Steve Ziaziaris	Sr Project Manager		28.5.20
Reviewed by:	Steve Ziaziaris	Sr Project Manager		26.6.21

Revised by	Revision #	Date	Changes made
Karen Lopez	1	28.5.20	Draft version
Shanil Prasad	2	28.8.20	Updated organisational chart, updated staging plans.
Kurt Dessmann	3	24.9.20	Updated organisational chart and contacts
Daniel Taylor	4	20.10.20	Updated Project Team & Signatures
Daniel Taylor	5	27.01.2021	Updated Project Team & Signatures
Daniel Taylor	6	22.02.2021	Updated Project Team & Signatures
Steve Ziaziaris	7	26.6.2021	Updated Project Team & Signatures. Review before Stage 2 commencement.

Project information table

1.2 PROJECT DESCRIPTION

Client:	**NSW Department of Education & Communities**
Site Area:	**10,827m² (overall plot excluding childcare centre)**
Total GFA:	**3,800m² approx.**
Current School:	**K-2 (4 Home bases), 61 Students, 7 Staff**
New School:	**Core 14, K-6 (17 Home bases), 500 Students, 40 Staff**

Kyeemagh Infant School is programmed to expand the capacity of the existing K-2 Infants School to that of a Core 14 public school as defined under the Educational Facilities Standards and Guidelines (EFSG) documentation in order to address established demographic pressure within the Kogarah Primary Cluster.

The following milestones have been defined for the project:

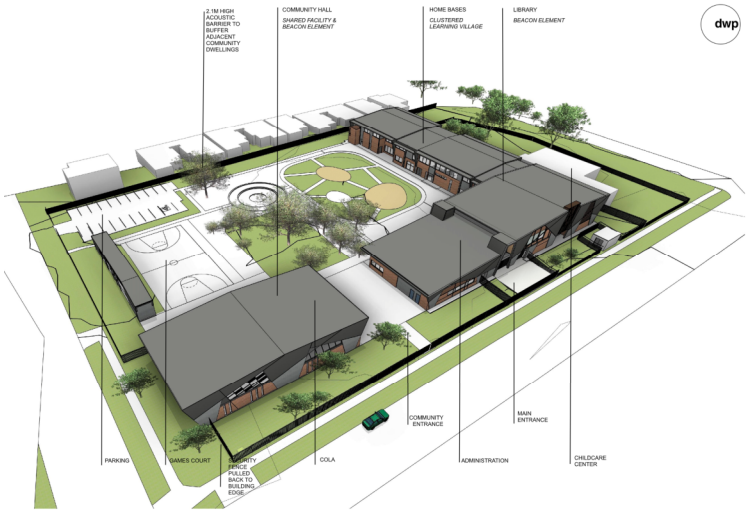
Stage 1 – Construct two storey School and Administration Block depicted in the diagram to the right shaded yellow and green. This is constructed on the School's ovals and allows the entire School to continue operating in their existing building. Assumed 28th June 2020 to obtain Occupation Certification 11th June 2021.

Decant School – During the School Holiday period for minimum disruption to School operation, 26th June to 11th July 2021.

Stage 2 – Complete demolition of existing School and construction of the School Hall and Canteen, Basketball Court, spectator stand, ODS Tank and Carpark. 12th July 2021 to 28th November 2021

- EFSG (Education Facilities Standards and Guidelines) Compliance
  - Future Focused Learning Model
  - Refer Departures Schedule
  - Refer Design Management Plan Appendices for all EFSG Standards and Guidelines current at the time of Tender
- Communication must only be via SINSW Community Liaison Team
- 4 Star Green Star
  - Refer Green Star Score Card by Renyi
- Must be DTS compliant (No Fire Engineered Solutions)

The works at Kyeemagh Public School include new 2 storey teaching spaces and associated amenities, library, administration building, COLA, hall, playing space, car park and all external works and demolition of all existing buildings.



1.3 PURPOSE OF THE PROJECT ENVIRONMENTAL MANAGEMENT PLAN

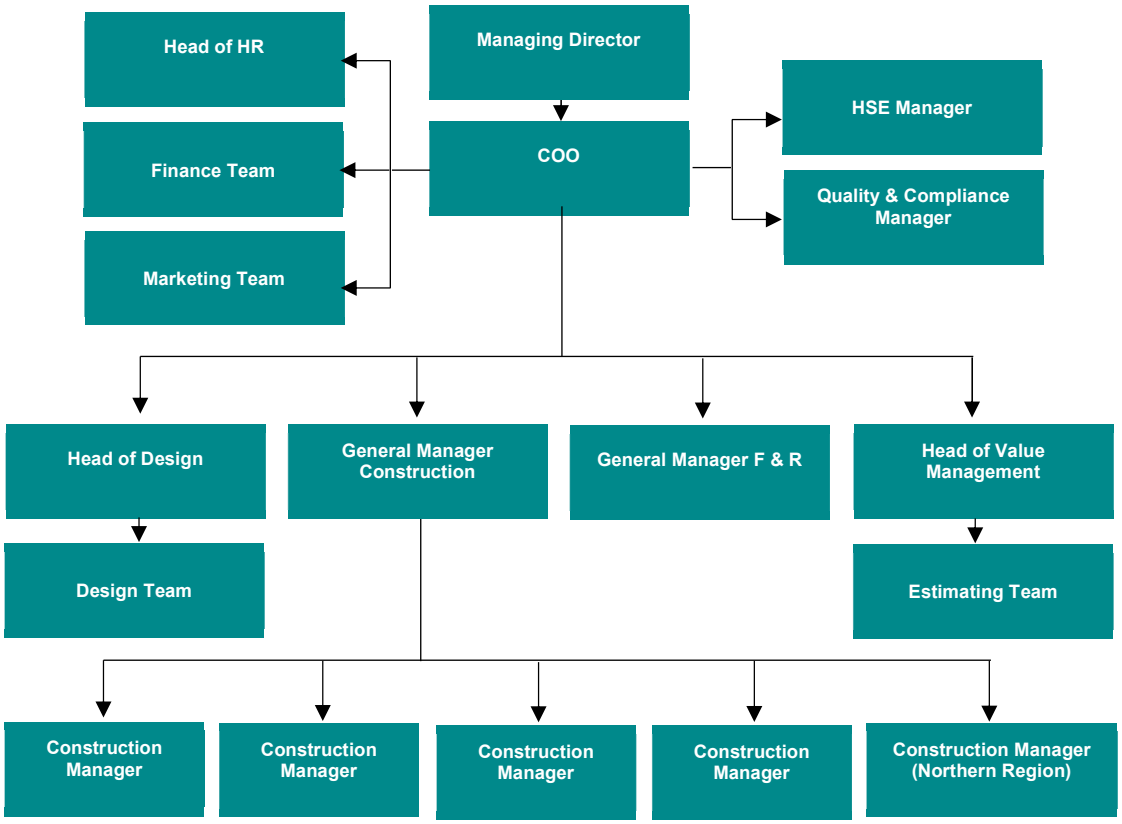
Taylor Construction Group Pty Ltd has a documented Quality, Health, Safety and Environmental (QSE) Management System. While the management systems are integrated, key documents such as the Project Environmental Management Plan (PEMP), the Project Safety Plan (WHSP) and the Project Management Plan (PMP, overarching plan with Quality provisions) are developed as separate documents to give each area a strong individual focus. The 'hierarchy of system documents' diagram below provides an overview of where the PEMP fits in the management system hierarchy.

This document is a key component of the integrated QSE Management System and sets out the environmental management strategy to be adopted on site by Taylor Construction Group Pty Ltd as the principal contractor for works undertaken on this project. The purpose of this document is to provide guidance on the essential environmental requirements on a project level and reference to other important management system processes and procedures. A Project Environmental Management Plan must be prepared for each project managed by Taylor Construction Group.

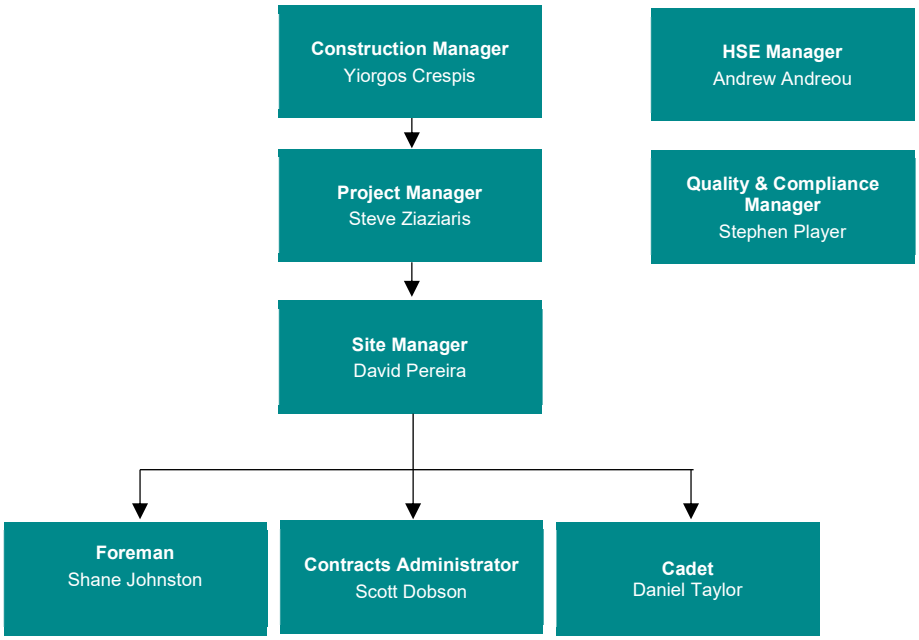
The project-specific Environmental Management Plan is to be read in accordance with Taylor Construction Management Manual, Site Management Plan and Site Safety Plan.

1.4 ORGANISATIONAL CHART

Corporate Team



Project Team



2. HIERARCHY OF HSE SYSTEM DOCUMENTS

3. ENVIROMENTAL POLICY

Taylor Construction Group has an Environmental Policy outlining our commitment to protection of the environment. This policy can be found in Appendix 2 of this document. A copy of the Environmental Policy is to be posted on the walls or notice board at the project site.

4. LEGAL AND OTHER REQUIREMENTS

The processes for identifying and keeping up to date with legal and other requirements are outlined in the **Legal and Other Requirements Procedure SE-P-01**.

An **Environmental Legal and Other Requirements Register E-R-01** has been prepared and is periodically updated to ensure that it reflects current legal requirements. This register identifies the key relevant legislation and guidelines and should be attached to this plan in appendix 7.

4.1 ENVIRONMENTAL FACTORS

Factor	Objectives	Requirements
Noise management*		
Noise/ vibration	Protect the amenity of nearby residents from noise/ vibration impacts resulting from activities associated with the proposed or existing development by ensuring that noise/ vibration levels meet statutory requirements and acceptable standards.	Identification of sources of noise/ vibration and estimates of project-wide noise. Ensure that noise and vibration levels meet acceptable standards and that an adequate level of service, safety and public amenity is maintained. Propose measures to manage and/ or mitigate impacts.
Water management*		
Surface water quality	Maintain or improve the quality of surface water to ensure that existing and potential uses, including ecosystem maintenance, are protected.	Details of site drainage, hydrocarbon use, disposal of plant site waste (including sewage), dewatering, and fate of water used/ pumped. Incorporate measures and/ or operating procedures to ensure that storm water run-off from the site reflects patterns, volumes and quality that exist prior to development, as far as reasonably practicable. Drainage lines are to be naturalised as much as possible and should enhance the ecological values and recreational opportunities. Propose measures to manage and/ or mitigate impacts.

Groundwater quality	Maintain or improve the quality of groundwater to ensure that existing and potential uses, including ecosystem maintenance, are protected.	Describe water requirements for any on-site processing. Incorporate measures and/ or operating procedures that will minimise the demand of the development on potable water supplies. Ensure that no contaminated water, including that containing sediments, leaves the site. Propose measures to manage and/ or mitigate impacts.
Air management		
Air	Ensure that potential air pollutants are contained and that activities do not impact on the natural environment.	Identify sources of air pollution. Propose measures to manage and/ or mitigate impacts.
Particulates/ dust	Ensure that particulate/ dust emissions, both individually and cumulatively, meet appropriate criteria and do not cause an environmental or human health problem.	Identification of sources of particulates/ dust and estimates of project-wide emissions. Propose measures to manage and/ or mitigate impacts.
Odour	Ensure that operations do not generate odour that causes environmental nuisance.	Identification of sources of odour and estimates of project-wide emissions. Propose measures to manage and/ or mitigate impacts.
Waste management		
Solid/ liquid waste	Ensure that wastes are contained and isolated from land, ground and surface water surrounds and treatment or collection does not result in long-term impacts on the natural environment.	Identify sources of solid and liquid waste and estimate the proposed amount generated. Propose measures to manage and/ or mitigate impacts.
Contaminated land and water		
Land	Ensure that existing or proposed activities do not discharge to land.	Identify activities that have the potential to discharge to land. Propose measures to manage and/ or mitigate impacts.
Surface water	Ensure that existing or proposed activities do not discharge to surface waters.	Identify activities that have the potential to discharge to surface waters. Propose measures to manage and/ or mitigate impacts.
Groundwater	Ensure that existing or proposed activities do not discharge to groundwater.	Identify activities that have the potential to discharge to groundwater. Propose measures to manage and/ or mitigate impacts
Hazardous materials management		
Scheduled wastes	Ensure scheduled wastes are specially treated for their destruction.	Identify scheduled wastes and describe treatment of their destruction. Propose measures to manage and/ or mitigate impacts.

Resource storage	Ensure that chemicals and other potentially harmful resources used in the manufacturing process are stored and disposed of correctly.	Describe the use and management of chemicals and other potentially harmful resources. Propose measures to manage and/ or mitigate impacts.
Compressed/ liquid gas	Ensure the suitable storage of compressed/ liquid gas.	Describe the use and management of compressed/ liquid gas. Propose measures to manage and/ or mitigate impacts.

4.2 SPECIFIC UNDERTAKING FROM FORMAL ENVIRONMENTAL IMPACT ASSESSMENT

Plan to be revised once State Significant Development (SSD) Conditions are issued by the authority.

4.3 DEVELOPMENT CONSENT CONDITIONS (PENDING)

Consent working hours are:

Monday to Friday	7:00 am	6:00pm
Saturdays	7:00 am	1:00pm
Sundays and public holidays	NO WORK	

SSD Conditions pending.

4.4 ENVIRONMENT PROTECTION LICENSE OR OTHER APPROVALS

Refer to conditions outlined in State Significant Development issued December 2019.

References:

- NSW Environmental Management System Guidelines 2015
- Legal and Other Requirements Procedure SE-P-01
- Environmental Legal and Other Requirements Register E-R-01

5. ENVIRONMENTAL RISK IDENTIFICATION AND ASSESSMENT

Standard ISO 14001 requires that environmental aspects relating to the organisation's activities, products and services are identified and those aspects that can have a significant impact on the environment, determined. At Taylor Construction Group, the environmental aspects relating to general construction activities have been identified through a risk assessment workshop attended by key project and site managers and an environmental consultant. The aspects, impacts, risk assessment outcomes and generic controls are documented in the **HSE Risk Register HSE-R-01**. Detailed requirements for risk assessments (environmental and OHS) are described in **Risk Assessment Procedure SE-OP-03.**

5.1 ENVIRONMENTAL RISK ASSESSMENT

The methodology for risk assessments are based on the requirements described AS/NZS 4360 (Risk Assessment) and HB203 (Environmental Risk Assessment).

Taylor Construction procedure requires an initial Project Risk Assessment to be undertaken at the commencement of each project. The Risk Assessment is to be conducted in the form of a workshop and is to include the project/ site manager, HSE manager, key members of the project team and, to the extent required, key subcontractors, and is to be recorded on form **HSE-R-01 HSE Risk Register**.

The HSE Risk Register is to be developed to address both legal and other requirements covered in this plan and is to be referenced to implement systems and work practices that will eliminate or minimize the likelihood of injury, illness or incident occurring.

When developing the Project HSE Risk Register, members of the workshop will to take into consideration available information which is relevant to the works and is contained in any published copies of the HSE Acts; WHS regulation; Australian/ National Standards; codes of practice; available internal and external industry bulletins/ alerts and industry reports to identify and document any known or foreseeable hazards associated with that tasks.

The completed Environmental Risk Assessment can be found in Appendix 13 of the project HSE Plan (**WHS-PLAN-02**).

References:

- SE-P-03 Risk Assessment Procedure

6. OBJECTIVES AND TARGETS

Objectives and targets are set at a corporate level. They are monitored and measured to ensure that Taylor Construction Group continually improves our environmental performance. To ensure that we meet our corporate objectives and targets, key performance indicators (KPIs) are set at a project level and reported to management monthly.

Objectives	Targets
Effective site environmental controls.	Achieve alignment with Taylors and Client expectations in relation to best practice control measures. Fulfil environmental obligations.
Increase amount of waste being recycled, reduce waste cost.	Eighty-five per cent (85%) of waste to be recycled.
Environmental performance.	Zero major environmental incidents and no breaches. Zero infringement notices. All environmental spills to be reported to Taylor Construction within 2 hours of occurrence. Environmental inspection competed weekly and documented in **SE-F-02 HSE Inspection Checklist** (more often if required).
Reduce the amount of environmental impact our operations have on the environment.	Environmental issues identified and controlled prior to causing negative impacts on the project or on the environment.
Effective implementation of the environmental system.	Eighty per cent (80%) or better internal audit results. Full compliance with planning approval requirements.
Community issues carefully handled.	Zero valid complaints. All complaints reported to Taylor's representative.

7. ROLES AND RESPONSIBILITIES

All persons working for and on behalf of Taylor Construction Group have responsibilities in relation to ensuring that environmental issues are appropriately managed. Generic WHS and environmental responsibilities are outlined in the **Roles, Responsibilities and Authorities Procedure QSE-P-06.**

Subcontractors. The subcontractor shall be required to comply with all applicable work health, safety and environmental legislation, including any additional Taylor's requirements, whilst engaged on a Taylor-managed project. The subcontractor shall be responsible to communicate any relevant environmental information to their personnel (workers) who are engaged in carrying out the work or providing material to the job site, including any secondary subcontractors or sole traders engaged by them and approved by Taylor Construction.

Subcontractor's minimal environmental requirements:

- Has the subcontractor identified in the SWMS environmental hazards and controls in relation to the work task (where required), i.e. refuelling plant and equipment on site, nuisance dust controls, nuisance noise, waste management (off-cuts), rubbish, concrete wash-out?
- Have hazardous substances or dangerous goods to be used on site by the subcontractor been identified? **Note:** the subcontractor will need to provide copies of relevant Safety Data Sheets (SDS) for all materials and/ or hazardous substances or dangerous goods to be used on site and note reference to training of employees in the SDS prior to first use and controls listed in the SWMS.

T**aylor Construction personnel.** For this project, the key roles and specific responsibilities of our managers, supervisors and site personnel regarding environmental management on site are outlined below. Project-related management and staff are required to sign off that they have read and understood their responsibilities.

7.1 CHIEF EXECUTIVE OFFCER

The Chief Operating Officer is responsible for:

- Defining Taylor Construction workplace health and safety policies and setting their objectives;
- Providing leadership that promotes and maintains Taylor's determination to continually improve its performance in workplace health and safety;
- Demonstrating genuine interest in workplace health and safety; supporting all project managers to encourage incident prevention;
- Acquiring and keeping up-to-date knowledge of workplace health and safety matters;
- Gaining an understanding of the operations of the business and the hazards and risks involved;
- Ensuring information regarding incidents, hazards and risks is received responded to in a timely way;
- Ensuring the PCBU has, and implements, processes for complying with any legal duty or obligation;
- Being fully briefed of the safety status of all current Taylor Construction projects;
- Setting targets and allocating priorities for workplace health and safety matters for all Taylor Construction staff;
- Leading by example in all matters concerning workplace health and safety.

Name: George Bardas

Signed:  **Date: 4.5.21**

7.2 GENERAL MANAGER

The General Manager is responsible for:

- Demonstrating genuine interest in workplace health and safety; supporting all project and site managers to encourage incident prevention;
- Assessing and allocating appropriate resources and equipment within the company for the effective implementation of the Workplace Health and Safety Management System and the management of WHS related hazard/ risks relevant to the construction projects;
- Being fully briefed of the HSE status of all current Taylor Construction projects;
- Assisting in the development and implementation of continuous improvement processes for workplace health and safety.

Specific roles:

- Provide visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken. Participate in health and safety meetings and consultation regarding workplace health and safety matters;
- Consider workplace health and safety matters with other senior members of the organisation as part of normal business practice and incorporate WHS into meeting agendas;
- Allow appropriate budget allocations for HSE management and improvement;
- Encourage and promote safety within the company by participating and openly consulting with employees in respect to their health and safety.

Name: Tim Christie

Signed: 

Date: 9/9/2020

7.3 CONSTRUCTION MANAGER

The Construction Manager is responsible for:

- Demonstrating genuine interest in w9orkplace health and safety; supporting all the project/ site managers to encourage incident prevention;
- Assessing and allocating appropriate resources and equipment within the company for the effective implementation of the workplace health and safety management system and the management of WHS related hazard/ risks relevant to the construction projects;
- Assisting in the development and implementation of continuous improvement processes for workplace health and safety;
- Checking that legislative obligations are met, and that Taylor Construction OHS Policy is effectively implemented throughout all company construction projects;
- Ensuring compliance with Taylor Construction accredited HSE systems is maintained and implemented across all Taylor managed projects.

Specific roles:

- Provide leadership in the development of project teams to ensure the fostering of the business culture and approach to doing business with our clients, consultants and subcontractors;
- Attend sites on a regular basis to ensure compliance with workplace health, safety, quality and programming requirements of both the head contract and the company' systems;
- Provide visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS matters;
- Encourage and promote safety within the company by participating and openly consulting with employees in respect to their health and safety;
- Assist the HSE manager in allocating competent personnel to coordinate workplace health and safety within the company;
- Ensure that project/ site managers have developed and implemented systems, which will ensure subcontractors/ suppliers engaged by the company comply with the health and safety management systems and the relevant WHS legislation;
- Consider workplace health and safety matters with other senior members of the organisation as part of normal business practice and incorporate WHS into meeting agendas;
- Support the HSE manager in ensuring project/ site managers have developed and implemented systems which will ensure subcontractors and suppliers engaged by the company comply with the health and safety management systems and the relevant workplace health and safety legislation;
- Respond to non-conformance by any member of the company who fails to discharge their duties as set by the Responsibility Statement and actively participate in dispute resolution where required;
- Allow appropriate budget allocations for HSE management and improvement;
- Facilitate a systematic approach of workplace health and safety to the identification, assessment, control and monitoring of related risks that may arise through both normal and adverse operating conditions.

Name: Yiorgos Crespis

Signed: 

Date: 20.10.20

7.4 PROJECT MANAGERS

The Project Manager is responsible for:

- Providing visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in health and safety meetings and consultation regarding WHS matters;
- Consulting with Taylor's construction manager and the HSE manager to ensure enough resources are allocated to the project to comply with legislative and Taylor's HSE requirements;
- Facilitating the process to ensure the project team and the HSE manager are consulted and participate in the development of the project specific HSE Risk Assessment. This is to be done prior to such activities commencing;
- Ensuring compliance with safety legislation, regulations, licensing conditions and authorities requirements relevant to all construction work;
- Ensuring adequate Taylor's site supervision is maintained throughout all hours of operation and those assigned with supervisory roles are competent and authorised to do so (e.g. PM, SM, leading hand or foreman);
- Developing, implementing and reviewing, in consultation with the site manager and HSE manager, the specific site safety plans;
- Identifying, planning and ensuring all safety training required for personnel is undertaken to support project needs, whether on or off-site. This task may be done in liaison with the HSE manager;
- Ensuring provisions are made for having a trained first aider present on site throughout all working hours;
- Ensuring that potential subcontractors have been issued with a copy of the **Contractor's HSE Requirements QSE-F-15.23** (letter template) at tender stage and ensuring, upon successful awarding of contract, that required WHS documents are made available by the subcontractor and reviewed by the project team prior to the subcontractor commencing;
- Supporting the site manager in the management of employee, subcontractor and supplier's performance in complying with Taylor's WHS Plan and the site-specific rules for the project;
- Selecting appropriate subcontractors, giving due regard to their ability to comply with legislative and Taylor's WHS requirements;
- Ensuring incidents are investigated and appropriate action taken as required by Taylor's site Safety Plan requirements in consultation with the HSE manager;
- Ensuring safety Notices issued and/ or visits made to the project by industrial representatives and/ or SafeWork NSW are reported to both managing director and HSE manager;
- Assisting the HSE manager when employees have been injured to evaluate suitable duties and encourage employee's early rehabilitation;
- Developing and implementing site evacuation and emergency procedures and overseeing at least one spontaneous evacuation drill every six months and assessing the results of that drill;
- Demonstrating an attitude to stimulating a high level of safety awareness at all times, leading by example and encouragement with a view to continuous improvement;
- The project manager is required to carry out at least one formal site safety inspection per month on every site under their control;
- Reporting back to Taylor's senior managers the project HSE incidents, external authority visits and/ or Notices issued.

Name: Steve Ziaziaris

Signed:  **Date: 28.5.20**

7.5 HSE MANAGER

The HSE Manager is responsible for:

- Overseeing the implementation of Taylor's Health, Safety and Environmental Management System throughout all Taylor Construction activities;
- Ensuring the system is maintained and continuously improved;
- Setting targets and allocating priorities within the framework of the Safety Management System;
- Safeguarding compliance and maintenance of the company's third-party accreditations;
- Planning and delivering training in safety management and/ or arranging for the appropriate internal or external trainers/ facilitators to conduct the training;
- Researching, developing and implementing new procedures and forms, and updating the manual as required;
- Compiling safety data from weekly and monthly project reports;
- Reviewing, analysing and reporting on safety performance to Taylor's managing director, sector managers and any party as arranged by the managing director;
- Ensuring compliance with safety legislation, regulations, licensing conditions and authorities requirements;
- Monitoring construction industry safety technology and management practices;
- Ensuring Taylor's workplace health and safety is reviewed on a regular basis (i.e. arranging for internal and external audits);
- Reviewing internal and external (independent) audit reports and, in consultation with the directors and the project manager, develop appropriate Action Plans if necessary;
- Conducting or delegating internal workplace health and safety audits;
- Workers compensation and return-to-work duties, including notification, recording and first point of contact. These duties may be delegated to appropriate personnel;
- Identifying hazards, assessing risks and selecting risk control measures for site-specific situations;
- When required, acting as the lead investigator in workplace incidents/ accidents, liaise with external authorities in managing them and report back to managing director and/ or sector managers on outcomes of investigations;
- Acquiring and disseminating information associated with construction industry safety;
- Ensuring HSE policies and procedures are implemented on all projects and that a specific site Safety Plan is prepared and implemented for all projects;
- Reviewing all project's health and safety targets; keeping abreast of the changing requirements and techniques;
- At the tender stage, reviewing nominated subcontractor's ability to comply with Taylor's site-specific rules and procedures as well as their own SWMS;
- At the tender stage, ensuring that valid certificates of currency (for workers compensation) are provided by all subcontractors prior to that subcontractor or his workers commencing on any Taylor's site.

Name: Andrew Andreou

Signed: 

Date: 9-10-20

7.7 SITE MANAGERS

The Site Managers are responsible for:

- Providing visible commitment to a safe and healthy work environment by ensuring regular reviews are undertaken, and by participating in safety and health meetings and consultation regarding WHS matters;
- Unless otherwise nominated, undertaking the role of site safety advisor for safety issues and control of the site. This role is supported by the project manager and the HSE manager;
- Implementing, through consultation with the project manager, the Site Safety Plan in accordance with WHS legislation, regulations, codes of practice, Australian Standards and/ or other statutory requirements;
- Ensuring the project's site workers comply with the Taylor Construction project Safety Plan;
- Ensuring all workers and, if required, visitors, are site-specific inducted and aware of any compliance obligations;
- Ensuring site security and site-specific signage is fixed to key access, internal and perimeter areas including 24-hour project contact details, attendance details for visitors, PPE requirements and construction zone signage;
- Implementing and undertaking formal and proactive consultation measures between the project team and subcontractors;
- Ensuring items identified by safety or systems audits are rectified within specified timelines in consultation with the project manager, HSE manager and subcontractors;
- Consulting with all persons on safety issues, including changes to the workplace, and encouraging the involvement of all personnel in achieving a safe and healthy site;
- Managing any site-specific workplace health and safety issue in the first instance and discussing these with the project manager and/ or HSE manager as required;
- Developing, planning, implementing and reviewing site-specific emergency and evacuation procedures;
- Monitoring subcontractor's compliance with the site Safety Plan, in particular subcontractor's compliance to their Safe Work Method Statements, by conducting regular task observation/ audits;
- Identifying any hazards and assessing any risks on site and implementing risk control measures;
- Prior to commencement, reviewing subcontractor's WHS Plan/ SWMS with regard to the specific site task using forms **SE-F-14 Safe Work Method Statement Review Form** and **SE-F-14.1 Contractor's HSE Plan Review**;
- Ensuring that requirements contained in **SE-F-14 Safe Work Method Statement Review Form** and **SE-F-14.1 Contractor's HSE Plan Review** are met prior to works commencing on site;
- Periodically throughout the contractor's works, reviewing compliance with SWMS and sign off on the SWMS Checklist;
- Leading or participating in formal site safety inspections weekly and record results using **SE-F-02 HSE Inspection Checklist**. Daily informal inspections should be noted in site diary;
- Utilizing experience and judgement to shut down and/ or evacuate any part of the site if a major health and safety risk occurs;
- Investigating, recording and reporting incidents and initiating corrective and action plans by relevant personnel. Reporting any serious incident immediately to the project manager and HSE manager;
- Providing support and assisting with rehabilitation of employees who have been injured at work by encouraging their early return to normality through work-based rehabilitation programs;
- Completing site diaries as per project administration requirements and forwarding that data to the HSE manager;
- Reviewing, coordinating and implementing emergency evacuation procedures and participating in drills at specified intervals (quarterly);
- Ensuring that all plant and equipment used on Taylor Construction sites are safe, correctly maintained and that the operator is correctly licensed or qualified for manipulating that equipment;
- Safeguarding compliance and maintenance of the company's third-party accreditations.

Name: David Pereira

Signed: 

Date: 10/09/20

7.8 SITE FOREMAN

The Site Foreman is responsible for:

- Implementing, through consultation with the project manager, the Site Safety Plan in accordance with WHS legislation, regulations, codes of practice, Australian Standards and/ or other statutory requirements;
- Assisting with the review and monitoring of subcontractor's Safe Work Method Statements (SWMS) in consultation with the senior site manager and site safety officer. Ensure that all requirements of forms **SE-F-14.1 Contractor's HSE Plan Review** and **SE-F-14 Safe Work Method Statement Review Form** are met and implemented on site;
- Ensuring no work is undertaken on site until the relevant SWMS has been reviewed and signed off in accordance with form **SE-F-14 Safe Work Method Statement Review Form**;
- Monitoring subcontractor's compliance with the site Safety Plan and, in particular, subcontractor's compliance to their Safe Work Method Statements by conducting regular task observation /audits;
- Ensuring periodic reviews for compliance/ suitability of SWMS relevant to works under their control;
- Ensuring that site personnel comply with the Taylor Construction project Safety Plan;
- Ensuring all workers and, if required, visitors, are site-inducted and aware of any compliance obligations;
- Ensuring that site security and site-specific signage is fixed to key access internal and perimeter areas, including 24-hour project contact details, and that they are legible and current;
- Assisting with implementing and undertaking formal and proactive consultation measures between the project team and subcontractors;
- Ensuring items identified by safety or system audits are rectified within specified timelines in consultation with the project manager, site manager, site safety advisor and subcontractors;
- Consulting with all persons on safety issues, including changes to the workplace, and encouraging the involvement of all personnel in achieving a safe and healthy site;
- First response in managing site-specific workplace health and safety issues in the first instance, and discussing these with the project manager, site manager and/ or site safety advisor as required;
- Assisting with developing, planning, implementing and reviewing site-specific emergency and evacuation procedures;
- Monitoring subcontractor's compliance with the site Safety Plan, in particular subcontractor compliance to their Safe Work Method Statements;
- Identifying any hazards and assessing any risks on site and implementing risk control measures;
- Leading or participating in formal site safety inspections **weekly** using form **SE-F-02 HSE Inspection Checklist**. **Note**: informal inspections should be noted in site diary;
- In consultation with the project manager and the senior site manager, and utilizing experience and judgement, shut down and/ or evacuate any part of the site if a major health and safety risk occurs;
- Investigating, recording and reporting incidents, and initiating corrective action plans by relevant personnel. Reporting any serious incident immediately to the project manager, the senior site manager and the HSE manager;
- Monitoring the use of personal protective equipment (PPE) by site personnel;
- Completing site diaries as per project administration requirements;
- Assisting with reviewing, coordinating and implementing emergency evacuation procedures and participating in drills at specified intervals, minimum every six months;
- Ensuring that all plant and equipment used on Taylor Construction sites are safe, correctly maintained and that the operator is correctly licensed or qualified for operating that equipment;
- Assisting with archiving project safety records and information.

Name: Shane Johnston

Signed: S Johnston Date: 27/1/2021

Signed: S Johnston Date: 27/1/2021

7.9 CONTRACT ADMINISTRATOR / SITE ENGINEER

The Contract Administrator and Site Engineer's responsibilities are:

- Support the project and site management in the management of employee, subcontractor and suppliers' performance in complying with Taylor Construction WHS and the site-specific rules for the project;
- Assist the project/ site manager to ensure the site Safety Plans and associated documentation, including standard forms, procedures and templates, remain current and up to date;
- Where required, assist the project and site manager with site inductions;
- Include in subcontract agreement the requirement for subcontractors to carry out their works in accordance with the company's or subcontractor's approved Safety Plans;
- Forward to subcontractors a copy of HSE subcontractor requirement **Contractor's HSE Requirements QSE-F-15.23** (letter template), ensuring this is completed and returned by subcontractor prior to commencing;
- At the tender interview stage, discuss with the subcontractors their obligation for managing HSE requirements by issuing to them relevant sections of the tender interview form and ensuring this is completed by subcontractor prior to commencing on site;
- Request and obtain from the subcontractor copies of their Quality and Safety Plans;
- Using returned form to assess subcontractor's abilities to comply with HSE requirements and make recommendations to the project/ site manager;
- Request and obtain from the subcontractor copies of their Workers Compensation and Public Liability Certificates of Currency, ensuring they are current and that copies are available on site;
- Ensure that all completed copies of form **Contractor's HSE Requirements QSE-F-15.23** (letter template) are returned and filed in the project files and a copy uploaded onto U-drive;
- Ensure that the latest copies of Project Plans and HSE Risk Assessments are uploaded onto Project Centre, or preferred data control system used, and engaged subcontractors have access to these;
- Assist the project, site and safety managers in conducting project audits, reporting on safety compliance and maintaining safety records;
- Ensure all **external** complaints/ incidents are recorded on **SE-F-21 Incident Report Form** and filed in the External Complaints Register located in the OHS folder in the U-drive;
- Assist project and site management in the general administration of HSE where requested.

Name: Scott Dobson

Signed:

Date: 28.8.20

7.10 BUILDING CADET

The building cadet health, safety and environmental responsibilities are:

- Provide general assistance to management on an assigned project;
- Provide administrative assistance in managing site safety, quality assurance and environmental management systems;
- Maintain project registers and records;
- Provide assistance with site contract administration and tendering;
- Manage project document control and provide design management assistance;
- Assist with on-site supervision;
- Assist the project/ site manager to ensure the site Safety Plans and associated documentation, including standard forms, procedures and templates, remain current and up to date;
- Forward to subcontractors a copy of HSE subcontractor requirement form **QSE-F-15.23 Contractor's HSE Requirements** (letter template), ensuring this is completed and returned by subcontractor prior to works commencing;
- Assist the project, site and safety managers with conducting project audits, reporting on safety compliance and maintaining safety records;
- Where required, assist the project and site managers with conducting site inductions;
- Fulfil responsibilities as outlined in the 'Taylor Cadet Program Guidelines', including undertaking an approved course of study at an Australian University;
- Assist project and site management in the general administration of HSE where requested;
- Monitor the use of personal protective equipment (PPE) by site personnel;
- Complete site diaries as per project administration requirements.

Name: Daniel Taylor

Signed:  **Date: 24/9/20**

7.11 FIRST AID OFFICERS

It is the job of the trained first aider to provide initial treatment to injured or ill employees, which is consistent with first aider's level of training and competency. Where the treatment required is beyond a first aider's level of competency, they should recommend that the employee seek immediate medical assistance.

The nominated site first aid officers shall possess the required level of competency (Senior First Aid Certificate or Occupational First Aid Certificate) and they shall be responsible for:

I. Providing first aid assistance to persons ill or injured on site;

II. Recording all such assistance provided;

III. Liaising with the site manager and/ or site foreman to achieve first aid obligations.

First aid officer records:

The nominated first aider shall be relied upon to exercise a common sense-approach in determining what type of injuries require a first aid report to be completed. First aid/ incident reports shall only be completed for injuries or illnesses for which first aid assistance was sorted **immediately** following an event. Employees, including subcontractor's, seeking to report an injury or incident for which first aid assistance was not initially sort **shall not** be provided with a copy of the report unless this has been authorised by the site/ project manager and/ or Taylor Construction HSE manager.

Some typical injuries that may require reporting are:

- All injuries requiring off-site medical treatment;
- Impact injuries;
- Head injuries;
- Musculoskeletal injuries;
- Open wounds (cuts);
- Eye injuries.

The first aid officers shall also be responsible for the regular maintenance and replenishment of the first aid kits and equipment.

Name: Steve Ziaziaris **Signed:** ..... **Date: 28.8.20**

Name: Troy Dibble **Signed:** ..... **Date: 28.8.20**

Name: Scott Dobson **Signed:** ..... **Date: 28.8.20**

DAVID PEREIRA 24.09.20

7.12 PCBU AND WORKERS

PCBU and workers are responsible for:

- Attending Taylor Construction site-specific induction prior to commencing work on site;
- Taking reasonable care for their individual health and safety and that of others on site, including members of the public;
- Familiarising themselves and adhering to Taylor Construction corporate policies;
- Performing only those works in which they possess the required competencies for, or have been suitably trained to perform;
- Taking corrective actions to eliminate hazards within the workplace and /or reporting those hazards they cannot correct;
- Reporting all injuries to a first aid officer or supervisor;
- Cooperating with Taylor Construction management in all requirements imposed in the interest of health, safety and welfare;
- Never intentionally or recklessly interfering with, misusing or removing any items and/ or equipment provided in the interest of health and safety;
- Complying with all site safety instructions and abiding by the procedures and work practices identified in the Workplace Heath Safety Project Plans and/ or as directed or informed by the site manager/ foreman;
- Complying with all relevant workplace health and safety legislation, standards and codes of practice;
- Reporting promptly to a site manager/ foreman any unsafe conditions, practices or defects discovered in any control measures, including personal protective equipment;
- Maintaining safe work practices when working with, or near, hazardous substances, so that their own health and safety, and the health and safety of those around them, is maintained;
- Using personal protective equipment (PPE) as required. The equipment should be kept clean and maintained in an appropriate manner;
- Practicing a high-standard personal hygiene in and around all amenity areas such as lunch, change and toilet facilities by washing thoroughly and removing all protective clothing before eating, drinking and smoking.

7.13 OTHER PERSONNEL WITH SPECIFIC ENVIRONMENTAL RESPONSIBILITIES

To be reviewed once SSD Conditions issued by authority.

References:

- Roles, Responsibilities and Authorities Procedure QSE-P-06

8. INDUCTION

Taylor Construction employees, including those workers engaged by or working on behalf of the subcontractors, are required to be site-inducted prior to commencing work on the site. General environmental awareness and specific environmental requirements of this PEMP must be incorporated into the site-specific induction as required.

As a minimum, inductions must include the following environmental information:

- Community issues;
- Hours of operation;
- Noise and vibration;
- Dust management;
- Traffic access;
- Washing requirements for construction plant and equipment;
- Storage and handling of fuels, oils and other chemicals;
- Waste management: recycling, disposal, litter;
- Soil and water issues: controls, tracking of mud off-site.

Where there are significant environmental issues identified for the project, these must be incorporated into the site-specific induction. These may include but shall not be limited to (where required):

- Environmentally sensitive areas of the site (specify details in this section);
- Contaminated or Acid Sulphate soils;
- Endangered flora and fauna;
- Environmental controls and management;
- Noise emissions;
- Plant emissions;
- Archaeology and heritage management.

References:

- SE-F-11 Site Induction Form and Mandatory Safety Requirements
- SE-F-11a Induction Register

9. TRAINING AND COMPETENCY

All persons undertaking work on the project (employees and subcontractors) must be trained and competent to carry out their work. This includes undertaking tasks in an environmentally sound manner.

Subcontractors shall be responsible to ensure that Taylor Construction Environmental Risk Management, as prescribed in chapter 11.3 of this plan, are adopted and controls, as contained in Taylor's **HSE-R-01 HSE Risk Register,** are implemented when developing their systems of work.

The subcontractor shall be responsible to consult and train workers under their management in agreed environmental system. Evidence of appropriate training shall be made available by the subcontractor to Taylor Construction upon request by a Taylor nominated representative.

The project/ site management, along with relevant members of the project team, must be made aware of the requirements of the Taylor Environmental Management System and shall be required to attend Environmental Awareness and Due Diligence training sessions when organised by the company.

References:

- QSE-P-19 Training, Competency and Awareness Procedure
- WHS-PLAN-02 Project Workplace Health and Safety Plan (PWHSP)

10. COMMUNICATION

The requirements for internal and external communication are outlined in the QSE Management System Manual. The following provides essential information in relation to environmental communication on projects.

10.1 INTERNAL COMMUNICATIONS

Essential information relating to project environmental management will be communicated through toolbox talks and inductions.

Environmental alerts will be periodically prepared and sent to sites for posting on notice boards.

Key changes to environmental legislation will be sent by email to all project managers and site managers

10.2 EXTERNAL COMMUNICATIONS - COMMUNITY

Community complaints must be reported as environmental incidents and all correspondence relating to the complaint must be retained and filed on site, including information on how the complaint was resolved.

10.3 REGULATOR SITE VISITS AND WRITTEN COMMUNICATIONS

If an authorised officer *(*Council or DECCW representative*)* visits your site, you should contact the HSE manager or construction manager for assistance and advice. While you can request that a higher level of management assists you, you cannot refuse to answer questions. An authorised officer must show their identification on request (ensure you ask for it) and has the right to ask any person on site questions relating to environmental issues. When being enquired, always be polite, discuss only the facts and do not elaborate or provide opinions.

Any Penalty Infringement Notices or official warnings from regulators are to be treated as ‘incidents’ and reported in the Incident Report Form, investigated and corrective actions assigned and completed to address the root cause of the infringement.

Any communication from a regulator must be notified to the HSE manager. Records of all communications must be retained and appropriately filed.

11. ENVIRONMENTAL RISKS

11.1 STANDARD OPERATING PROCEDURES

Several standard operating procedures have been developed as part of the HSE Management System to provide detailed information on the management of site issues in relation to environmental and safety risks. The following procedures have been developed to date and are available on SharePoint:

- SE-OP-01 Hazardous Substances and Dangerous Goods Procedure
- E-OP-01 Erosion and Sedimentation Controls
- E-OP-02 Waste and Resource Management
- QSE-OP-02 Asbestos Management Procedure
- SE-OP-04 Noise Management (OHS and Environmental)

11.2 SAFE WORK METHOD STATEMENTS (SWMS)

While Safe Work Method Statements are primarily used in WHS to manage high-risk activities, any relevant or foreseen environmental risk must also be considered in the preparation of the SWMS.

Taylor's site managers or their nominees are responsible for ensuring that subcontractors include environmental issues in their task-specific SWMS by using **SE-F-14**. If environmental issues are not appropriately addressed, the subcontractor should be advised of the requirements. It is recommended that subcontractors are assisted with identifying environmental issues, particularly during the early implementation of Taylor's Environmental Management System and PEMP.

References:

- SE-F-03 Taylor Construction Group Safe Work Method Statement
- SE-F-14 Safe Work Method Statement Review Form
- SE-F-14.1 Contractor's HSE Plan Review

11.3 ENVIRONMENTAL RISK MANAGEMENT AND CONTROL

This section provides an overview of environmental issues typically encountered on site based on the generic issues identified in the master Environmental Risk Assessment. When preparing this document, the project manager should add any additional environmental issues that may have been identified through the environmental impact assessment, development consent/ approval, etc.

11.3.1 PROJECT DESIGN – ENVIRONMENTAL CONSIDERATIONS

During the planning phase of the project, consideration should be given to the following:

- How will design minimise energy use and allow for and use the natural environment?
- How will materials, products and systems be selected or designed to minimise adverse impacts and/ or benefit the environment?

These questions should be considered prior to commencement of the project and may require the input from the client.

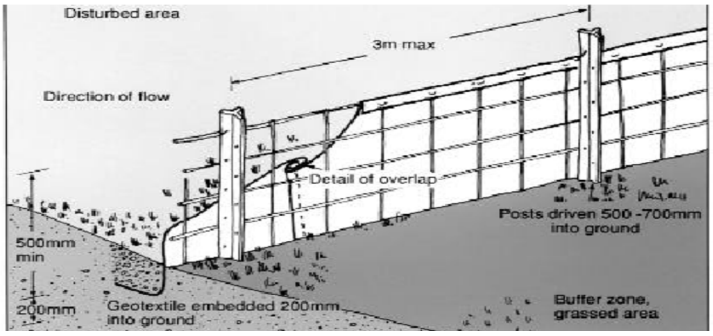
11.3.2 SOIL AND WATER MANAGEMENT/ SEDIMENTATION AND EROSION CONTROL

Taylor Construction Group and subcontractors shall plan and carry out works to avoid erosion and prevent sediment leaving the site to the surrounding land, watercourses, water bodies, wetlands and storm water drainage systems. This includes the installation of erosion and sedimentation controls prior to commencing clearing works. Where possible, works should be staged to reduce the areas cleared at the same time to minimize soil disturbance. Where required, prepare erosion and sediment control plans (ESCP), install the controls in accordance with the plan and maintain them regularly. For more detailed information, refer to the procedure and external guidelines listed below.

The following controls will be implemented within Taylor Construction site boundaries to control erosion, sediment and pollution within the site:

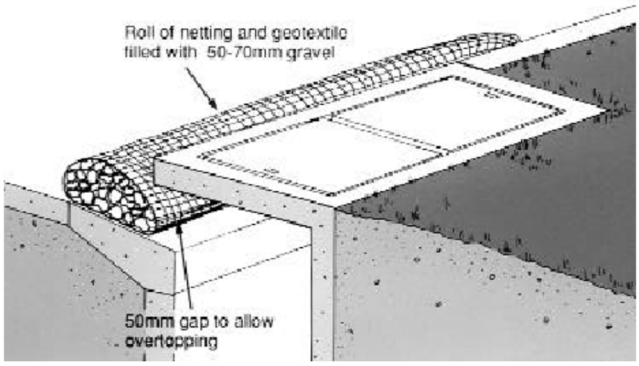
Sediment and erosion control devices. Unnecessary disturbance of the site shall not occur, and all cuts are to be stabilised as soon as possible after the completion of site earthworks. Extra care will be taken to prevent sediment run-off into all neighbouring lots and storm water. Any collected silt will be disposed of in accordance with all other relevant codes and standards.

Silt fences. Silt fences are to be installed to site boundaries as required. Geotextile fabric will be fixed to the temporary construction fencing where 'downhill' boundaries exist. The fabric will be turned down under the existing ground line and secured at regular intervals not exceeding 3m, in accordance with the following diagram:



Vehicle access. Vehicular access will be controlled to prevent sediment being tracked. This will be done by maintaining an all-weather access/ driveway composed of an approved course aggregate surface. Moreover, if the need arises, a shaker grid will be installed to the main access by Taylor during the construction works. Any sediment that is tracked onto the surrounding roads will be cleaned off in a timely manner.

Storm water inlets. All storm water inlets are to be covered with geotextile fabric in a roll or other format to ensure that no sediment enters into the storm water system. This will be the responsibility of the site manager to enforce. The rolls will not only be placed directly at the inlets as shown below, but also at regular intervals in the gutters 'upstream' from the inlets, creating multiple barriers.



Stockpiles. If appropriate topsoil is to be stockpiled on site, then the following measures will be put in place:

- Stockpiles shall be stored at least 2 metres away from drainage lines, natural watercourse and established trees;
- Stockpiles will have temporary silt fences around it to create an enclosure and, if necessary, they will be covered with shade cloth or tarpaulin to retain the materials inside it. The location of stockpiles will be determined on site.

Monitoring. To maintain the various erosion and sediment control devices, regular inspections, repairs and cleaning will be carried out on the silt fences to the boundaries, stockpiles, waste enclosures and to the stockpile covers.

References:

- E-OP-01 Erosion and Sedimentation Controls Procedure
- Managing urban stormwater: soils and construction, Volume 1, 4th edition, 2004

11.3.3 VEGETATION MANAGEMENT

Taylor Construction Group and subcontractors shall plan the works to preserve existing trees, plants and other vegetation, that are to remain within or adjacent to the works. Areas of the site that contain vegetation that must be preserved should be fenced-off, marked or otherwise isolated to ensure they are not inadvertently damaged. If there are any endangered species on site, specific management techniques may be required; these should be addressed in an Environmental Impact Assessment.

On completion of the works, all areas disturbed by construction activities shall be restored to the contract specifications. Where required and practical, efforts will be made to mulch and re-use vegetation on site or send it to a green waste recycling facility.

11.3.4 WASTE MANAGEMENT AND RESOURCE RECOVERY

Taylor Construction Group and subcontractors shall adopt the hierarchy of waste (avoid, reduce, reuse, recycle/ reprocess), dispose to maximise resource recovery and minimise disposal wherever possible and practical. The importance of appropriate waste management practices is to be included in the site induction.

Sites are to be provided with suitable bins and skips for appropriate collection and separation of waste and recyclables, and these are to be collected with appropriately qualified and licensed (where required) waste contractors.

Prior to disposal, waste must be classified in accordance with the DECCW Waste Classification Guidelines (latest version 2014) prior to transporting waste off-site. Excerpts from the waste classification guidelines are contained within appendix B of the **Waste and Resource Management Procedure E-OP-02**. Waste receipts must be kept for legal requirements; details of waste separated and disposed of is to be documented in the **Waste and Recycling Register E-F-03**. The information from the register is to be used to complete the waste management section of the KPI Monthly Report Form and forwarded to the HSE manager for tracking of TCG environmental targets.

References:

- E-OP-02 Waste and Resource Management Procedure
- SE-F-23 KPI Monthly Report Form
- E-F-03 Waste and Recycling Register

11.3.5 NOISE MANAGEMENT

From an environmental viewpoint, noise can create a nuisance to neighbours and members of the public and is subject to legal requirements. Taylor Construction Group and subcontractors shall make all practical efforts to comply with statutory requirements for noise management and minimize nuisance to neighbours. Protection of the Environment Operations Act 1997 (sections 139 and 140) and the Department of Environment and Climate Change NSW 'Interim Construction Noise Guideline' risk controls for noise must be incorporated in relevant Safe Work Method Statements, including nuisance to neighbours. Where required by development consent conditions, environmental noise monitoring will be undertaken as per the conditions. Further information on noise management from a WHS and environmental viewpoint is contained within the Noise Management Procedure.

References:

- SE-OP-04 Noise Management Procedure

11.3.6 WATER QUALITY MANAGEMENT

Taylor Construction Group and subcontractors shall comply with the requirements of section 120 of the Protection of The Environment Operations Act 1997 (Prohibition of Pollution of Waters). The act prohibits all forms of water pollution unless specifically authorised through and environment protection license (EPL). On most projects undertaken by Taylor Construction, an EPL will not be required.

There are substantial penalties for individuals and the company and controls must be in place to ensure that site activities do not cause water pollution.

Potentially hazardous activities, including washing out of concrete delivery vehicles and washing down of construction plant, are not permitted on site except in specially constructed bays that retain high PH water. Washing out of concrete delivery vehicles off-site is only permitted at locations approved for that purpose by the appropriate authority. Drains will be labelled to reduce likelihood of misuse.

Washing of paint brushes must be undertaken to avoid any paint wash-water entering drains or waterways. Wash-water must be removed from site and appropriately treated and/ or disposed of. The chemicals, acids or residue from any 'wet trades' such as brick cleaning must also be prevented from entering drains and waterways.

All liquids and materials that could cause water pollution must be stored in areas with secondary containment. Also refer to section on hazardous substances, chemicals, oils and other contaminants and the related procedure.

Pumping of storm water. If a sediment basin is required and storm water is required to be pumped out of the site, the pump intake is to be located no more than one metre (1m) below the surface of the collected water to reduce the amount of settled silt being pumped out for further treatment.

Storm water treatment. There are two treatment options for storm water collected on site, flocculation and/ or filtration. For each option the applicable procedures in their entirety are to be followed.

References:

- SE-OP-01 Hazardous Substances and Dangerous Goods Procedure
- Storing and Handling Liquids - Environmental Protection (DECCW)

11.3.7 AIR QUALITY MANAGEMENT

Taylor Construction Group and subcontractors shall comply with all statutory requirements governing air quality management, i.e. Protection of The Environment Operations (POEO) Act 1997, section 124, and the POEO Clean Air Regulation 2010.

The project/ site manager will ensure that all construction facilities erected at the site are designed and operated to minimise the emission of smoke, dust, cement dust, plant and vehicle exhausts and other substances into the atmosphere.

Taylor Construction Group and subcontractors shall employ construction methods that will keep the air pollution to a minimum and apply measures such as those listed below to ensure that airborne pollutants do not cause pollution and nuisance near the works:

- The spraying of disturbed soil and roads with water whilst under construction as required;
- The removal of mud from the wheels and bodies of plant and vehicles before it enters public roads or other sealed pavements. This could be rumble grids, dry brushing, wheel wash, etc., depending on the nature of the site;
- The removal of mud or dirt spilt by construction equipment onto public roads or other sealed pavements;
- The provision of coverings or stabilization of topsoil stockpiles;
- Covering all loads leaving the site;
- Stabilisation of ground likely to be exposed for significant time periods (e.g. using sterile seed);
- Fitting power tools with dust collection devices where practical;
- Keeping all plant and equipment well maintained and not leaving them idling while not being used;
- Reporting excess air emissions from plant and arranging for a service to fix the problem.

On-site burning of any materials is not permitted on Taylor Construction sites.

11.3.8 HAZARDOUS SUBSTANCES, CHEMICALS, OILS AND OTHER CONTAMINANTS

Prior to commencing work on site, an assessment of the quantities and locations of hazardous substances, chemicals, etc. likely to be held on site must be undertaken. The location of hazardous substances and other contaminants must be marked on a site map (refer to appendix 5). The site manager will use the assessment when planning the works to minimise the potential for pollution. This includes providing appropriate storage; separation of incompatible materials and bunding; and ensuring that all activities that use or handle these substances are undertaken in an area that will not cause water pollution or land contamination.

Spill kits will be provided wherever substances that could potentially cause pollution are stored and handled. Relevant site personnel will be trained in spill response and will be familiar with the contents and function of the spill kit materials on site. All spills, no matter how small, must be cleaned up immediately and be 0reported as an environmental incident.

Refuelling or maintenance of plant and equipment, or any other activity which may result in the spillage of a chemical, fuel or lubricant on the site, is not permitted without appropriate temporary controls measures.

The use and storage of any hazardous substances or other chemicals will be made strictly in accordance with the manufacturer's instructions and the relevant materials safety data sheets (MSDS).

References:

- SE-OP-01 Hazardous Substances and Dangerous Goods Procedure
- Storing and Handling Liquids - Environmental Protection (DECCW)

Spill response. Major spillages must be notified immediately, and all efforts made to contain the spill and prevent escape into storm water drains and waterways, provided it is safe to do so. If the spill is beyond the capacity of the site personnel to contain and clean up, specialist services must be employed.

Minor spillages must be cleaned up immediately. If soil or ground is contaminated, the soil is to be removed and placed into a bag or designated waste drum and disposed of appropriately.

If the spill enters drains or waterways, the incident may be required to be reported to the appropriate regulatory authority (local council) as soon as practicable, in accordance with the duty to report under the POEO Act. The decision to report must be discussed with the HSE manager or a director prior to making the report.

Spill response procedures for this project are:

- Provide site map showing location of all hazardous substances, chemicals, fuels, oils, spill kits, storm water drains and natural waterways (appendix 5);
- Spill Response Procedure flow chart (appendix 3);
- Call emergency services (fire, hazmat): call 000
- Local council phone number: 9806 5000
- MSDSS are located at: storage adjacent to site office.

11.3.9 PESTICIDE USE AND STORAGE

If pesticides are used at the site, they must be stored appropriately as per ‘hazardous substances’ section (11.3.8 above) and used in accordance with the manufacturer’s requirements and the NSW Pesticides Management Act and Regulations. The act and regulations have strict record keeping requirements for the use of more than 20 litres of product.

Taylor Construction Group general policy on the use of pesticides is that they should only be applied by suitably qualified pest control contractors.

11.3.10 CONTAMINATED LAND

Prior to commencing project work, checks should be made on the potential for the site to be contaminated. This should generally be identified by the client and addressed in an Environmental Impact Assessment. If the site is found to be contaminated, the recommendations for management of the contaminated soils from the assessment and other reports should be incorporated into this PEMP below.

Should contamination be suspected once working on the site (e.g. unusual odours, visual indications of soil or water pollution, etc.) work should cease immediately and the Taylor's project/ site manager contacted. Where relevant, the client should be notified by Taylor's project manager and investigations undertaken into the nature of the contamination. Work should not recommence until the nature and extent of the contamination is established and can be safely managed without environmental risk.

Taylor Construction Group and subcontractors shall comply with relevant statutory requirements of Contaminated Land Management Act and the POEO Act (NSW) in relation to disturbance or treatment of potentially contaminated ground.

The company shall install any control measures needed to divert surface run-off away from contaminated ground and to treat any surface run-off contaminated by exposure to contaminated ground. Contaminated material removed from site must be recorded on the **Waste and Recycling Register E-F-03**.

References:

- Waste and Recycling Register E-F-03

11.3.11 ACID SULPHATE SOILS (ASS)

Acid sulphate soils are naturally occurring soils generally found in estuarine areas. When exposed to air, they can oxidize and cause run-off of highly acid water. Acid sulphate soils require specialist management techniques.

The client should be aware of any potential for encountering acid sulphate soils and, if there is a potential, it should be addressed in the Environmental Impact Assessment undertaken for the project.

11.3.12 COMMUNITY COMPLAINTS

Community complaints should be treated as 'incidents': they must be reported to the HSE manager, be thoroughly investigated and reported on SharePoint. Reference to these are also to be documented and included in site diary entries. The project or site manager should try to resolve the issue with the community member in a conciliatory manner.

References:

- SE-F-21 Incident Report Form
- SE-F-22 Incident Investigation Form (report on SharePoint – forms are back-up only)
- SE-F-23 KPI Monthly Report (as above)

11.3.13 ARCHAEOLOGY AND HERITAGE MANAGEMENT

If any unexpected heritage item is discovered during maintenance and construction works, the following must be taken into consideration:

Indigenous heritage. All aboriginal objects, regardless of significance, are protected under law. Should any deposit, artefact or material evidence (including skeletal remains) of Aboriginal origin be found, Taylor Construction Group and subcontractors **shall cease all construction works that might disturb or damage** the deposit, artefact or material. The project manager will notify the client immediately, who will then consult the relevant government department (i.e. DECCW - National Parks and Wildlife Services). Examples of Aboriginal objects include stone tool artefacts, shell middens, axe grinding groves, pigment or engraved rock art, burials and scarred trees.

Historic heritage. Historic (non-Aboriginal) heritage items may include archaeological 'relics' and other historical items such as works, structures, buildings or moving objects. Should any item which is suspected to be of historical heritage value be encountered, Taylor Construction Group and subcontractors **shall cease all construction works that might disturb or damage the item**. The project manager will notify the client immediately, who will arrange for an officer from the relevant government heritage department to be consulted. A 'relic' is 'any deposit, artefact, object or material evidence that relates to the settlement of the area, not being Aboriginal settlement; and is of State or local heritage significance'. It can include bottles, remnants of clothing, pottery, building materials and general refuse.

References:

- Heritage Act 1977
- National Park and Wildlife Act 1974
- Unexpected Heritage Items Procedure – Roads and Maritime Services, 2015

11.3.14 ADDITIONAL ENVIRONMENTAL ISSUES

Refer to conditions outlined in State Significant Development issued December 2019.

12. INCIDENT AND EMERGENCY MANAGEMENT

12.1 EMERGENCY RESPONSE

The Emergency Response Plan for this site has been developed based on a template provided in the **SE-P-07 Project Emergency Control Management Plan**. Additional information for the management and control of emergency situations can be found in the Project Safety Plan (**WHS-PLAN-02**) but a Spill Response Procedure Flow Chart is contained in appendix 3 of this plan. For additional information on response to a spill, refer to section 11.3.8 'Spill response'.

Emergency response posters and flow charts are to be posted in the site and induction office, WHS notice boards, in crib rooms and other areas of the site as required.

References:

- SE-P-07 Project Emergency Control Management Plan
- QSE-F-10.1 Pre-Start Site QSE Checklist
- SE-F-31 Emergency Evacuation Rehearsal Register
- SE-F-05 Site Layout Evacuation Plan
- SE-F-06 On-Site Emergency Control Plan

12.2 INCIDENT REPORTING AND INVESTIGATION REPORTING

Site environmental incidents must be reported to the project/ site manager as soon as practically possible. In addition, any major environmental incidents must also be reported to the HSE manager in accordance with the **Incident Reporting and Investigation Procedure QSE-OP-05**. The priority is to ensure that the situation is controlled as soon as possible and to avoid further pollution or other adverse environmental consequences. Reporting of the incident should not delay any immediate responses to the incident.

Incident Reports must be completed and forwarded to the HSE manager within 24 hours and must be kept for a minimum of five (5) years.

Environmental incidents that cause, or threaten to cause, material environmental harm must be reported to the Appropriate Regulatory Authority (ARA, the local council in which the project is located) as soon as practicable following the incident. This would include any spillage or leak of substances that cause water or land pollution. Material environmental harm generally means that the harm is not trivial and/ or costs more than $10,000 to clean up. The phone number of the ARA should be included in the Emergency Response Plan.

If the site manager believes that the incident may be reportable to the Appropriate Regulatory Authority (ARA), contact the WHS manager for further advice prior to making an Investigation Report.

All environmental incidents that causes, or could potentially result, in an environmental harm are to be investigated, and corrective actions implemented following the investigation. Depending on the seriousness of the incident, key site

personnel, the HSE manager, witnesses, etc. should be consulted on the investigation and in determining appropriate corrective or preventive actions.

References:

- QSE-OP-05 Incident Reporting and Investigation Procedure
- SE-F-21 Incident Report Form (report on SharePoint – forms are back-up only)
- SE-F-22 Incident Investigation Form (as above)

13. ENVIRONMENTAL MONITORING AND INSPECTIONS

13.1 SITE ENVIRONMENTAL INSPECTIONS

Site environmental inspections are to be undertaken weekly using **SE-F-02 HSE Inspection Checklist** to ensure that environmental hazards are recognised and can be promptly rectified. Additional environmental issues may be added to the site HSE inspection form as required.

13.2 PHYSICAL MONITORING

For many projects undertaken by Taylor Construction, physical environmental monitoring is not typically required (e.g. dust, water quality, noise levels, air quality, etc.). Should the Environmental Impact Assessment specify that environmental monitoring is required, the project manager will arrange for appropriately qualified consultants to undertake that monitoring. All equipment used to measure environmental parameters will be calibrated in accordance with manufacturer's instructions.

13.3 MONITORING OF PROJECT ENVIRONMENTAL TARGETS

Objectives and targets for the project are specified under 'Objectives and Targets' section of the PEMP. Data relating to these targets will be documented daily using site diaries, reviewed by project/ site managers on a monthly basis and forwarded to the HSE manager for reporting to senior management.

The KPI Monthly Report captures information on lag and lead indicators. The current indicators are:

Lag indicators:

- Number of environmental incidents;
- Number of penalty infringement notices (pins) or clean-up notices;
- Number of community complaints.

Lead indicators:

- Number of toolbox talks (combined with WHS and environmental issues);
- Number of environmental inspections undertaken;
- Waste and recycling volumes (initially to set benchmark, then track improvement)

Add any additional KPIs that may be set from Environmental Impact Assessments, conditions of consent and client requirements, etc.

14. NON-CONFORMITY, CORRECTIVE AND PREVENTIVE ACTIONS

Taylor Construction has a non-conformance and corrective action process in place to address all non-conformities across the business, regardless of the source. The process is defined in the **Reporting Non-Conformance, Corrective and Preventive Actions Procedure QSE-OP-29**. Typically, environmental non-conformances would result from audits, inspections and from observations by the site manager of poor environmental practices, including incorrect waste disposal/ recycling (liquid waste, poor storage of hazardous substances, oils, chemicals and damage to existing environmental controls such as sediment fencing, etc.). Non-conformances may be issued for serious breaches or repeated minor breaches.

References:

- QSE-OP-29 Reporting Non-Conformance, Corrective and Preventive Actions Procedure
- Notices (electronic) raising of non-conformances (internal)
- Notices (printable) for raising NCRS on subcontractors

15. PURCHASING/ PROCUREMENT

Purchasing and procurement includes the purchase of goods and the supply of services of contractors. When purchasing goods, the following environmental considerations should be considered:

- Is there a less toxic, less harmful alternative (e.g. chemicals, paints, solvents, etc.)?
- How much do we need? Will anything be wasted? Precise ordering will minimise wastage of resources and money;
- Can the product be purchased locally to reduce transport impacts?
- Are there any opportunities to use 'green' products in construction to improve the efficiency of the building in terms of energy and water usage (design issue – may need client input)?
- S-F-18.1 Pre-Hire Purchasing Assessment Form

When engaging contractors, the following should be taken into consideration:

- Has the environmental capability been assessed and signed-off through contract administration?
- Has the contractor attended a pre-award interview and assessed Taylor Construction Group environmental requirements?
- Has **Subcontractor Tender Interview and Assessment Form QSE-F-15.6** been completed?

References:

- QSE-OP-15 Subcontracting, Purchasing and Hiring Procedure
- QSE-F-15.6 Subcontractor Tender Interview and Assessment Form

16. CONTRACTOR MANAGEMENT

Taylor Construction Group, as the principal contractor, will ensure that contractors performing work on site are aware of the environmental requirements and enforce compliance to requirements.

Prior to commencing on site, contractors are to be inducted to the site as part of the HSE requirements. Inductions will include an environmental component to ensure all contractors are aware of the environmental risks on the project.

Contractors are required to submit Safe Work Method Statements (SWMS) prior to commencement of work as part of the WHS requirements. SWMS must also address the environmental risks for the tasks and will be reviewed and checked-off on **SE-F-14 Safe Work Method Statement Review Form** by the site manager to ensure that all environmental risks are appropriately identified, and controls documented.

Environmental inspections will be undertaken at least once monthly. This will include an inspection of the contractor's work area and checking that all environmental controls are in place. Serious breaches or repeated minor breaches will result in the issue of a Non-Conformance Report, and the issue must be resolved within designated time frames.

17. ENVIRONMENTAL AUDIT

Audits of the Environmental Management System will be conducted regularly to ensure the system is appropriately in place and implemented. As part of the audit program, audits will also be undertaken on project sites for compliance to the requirements of the Project Environmental Management Plans. Audits should be undertaken by suitably experienced auditors.

Projects that have duration of more than six months will have at least one audit against the PEMP and, after the 6 months, will be audited at least once per year. This will generally be undertaken as an integrated audit in conjunction with the Project Safety Plan and Project Management Plan (Quality). Projects with high-risk activities or that performed poorly at the initial audit may be audited at a higher frequency. The HSE manager is responsible for coordinating project audits.

18. REVIEW OF THIS PLAN

This Environmental Management Plan must be reviewed by the project manager in consultation with the project team and HSE manager whenever any major change occurs on the site that may have an impact on the environment, or at least twice (every 6 months) during construction.

APPENDIX 1: GLOBAL MARK ACCREDITATION

global-mark®

Certificate of Approval

This certificate confirms that the company below complies with the following standard:

Company Name	**Taylor Construction Group**
Company Other Name	
Client ID	**101009**
Scheme	**Environmental Management Systems Scheme**
Certification Standard	**AS/NZS ISO 14001-2016: Environmental management systems - Requirements with guidance for use**
Scope of Certification	**Design, construction, project management and property development services**
Type of Certification	**Management System**

CERTIFICATE DATES:

Original / Initial	**19/11/2009**	*Last Certificate update*	**18/05/2018**
Certification / Re Certification	**7/05/2018**	*Expiry*	**7/05/2021**
Last Certification Decision	**18/05/2018**		

APPROVED COMPANY/SITE ADDRESS(ES):

Level 13, 157 Walker Street North Sydney 2060 NSW Australia

The use of the Accreditation Mark indicates accreditation by the Joint Accreditation System of Australia and New Zealand in respect to those activities covered by JAS-ANZ accreditation. Refer to www.jas-anz.org/register for verification.

This certification remains valid until the above mentioned expiry date and subject to the organisation's continued compliance with the certification standard, and Global-Mark's Terms and Conditions.

This Certificate of Approval remains the property of Global-Mark Pty Ltd, Company Number: ACN.108-087-654

JAS-ANZ

Certification Manager

Unique Certificate Code: 5CC89063499 2E158CA2582830041 2EAC

APPENDIX 2: ENVIRONMENTAL POLICY

Environmental Policy

Taylor regards appropriate management of environmental issues as integral to our business. We are committed to the protection of the environment and ecologically sustainable practices in all aspects of our operations.

We will comply with all relevant legislation governing the protection of the environment. Our environmental management systems will address all aspects of the International Standard, ISO 14001:2004: "Environmental Management Systems – Requirements with guidance for use".

Environmental Management · ISO14001
Global-Mark.com.au®

IN MANAGING OUR BUSINESS, WE MAKE A COMMITMENT TO:

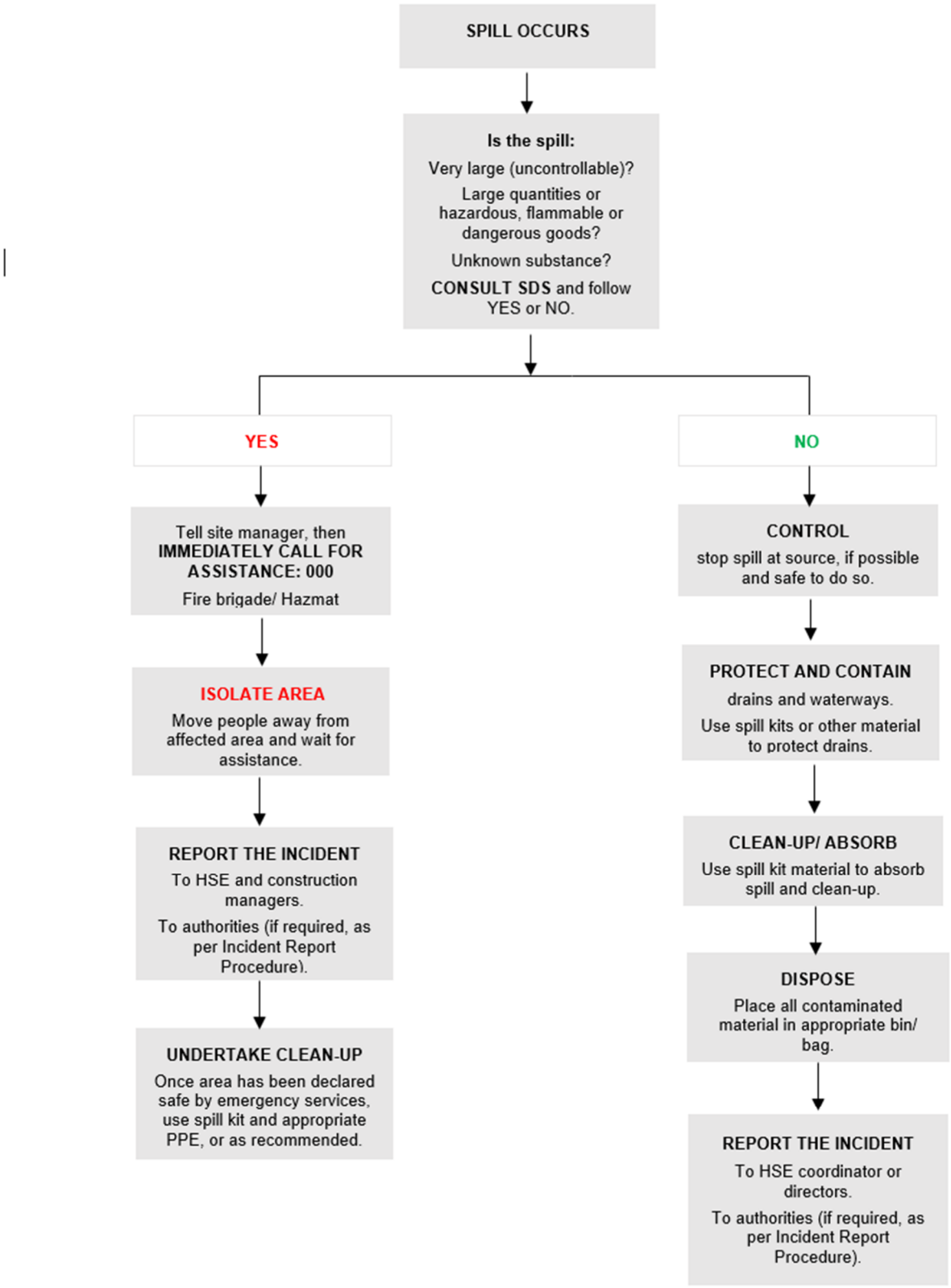
- Work pro-actively with our clients, regulators, and other community stakeholders to enable environmental issues to be addressed at an early stage of development.
- Take local community views into consideration and ensure that we inform, listen to and respond to reasonable concerns relating to our projects.
- Undertake our activities in a manner that is consistent with the principles of ecologically sustainable development.
- Prevent pollution and reduce adverse environmental impacts of our activities on the natural, built and cultural environment.
- Promote the efficient use of natural resources and reduce waste through the use of the waste hierarchy –avoid, reduce, re-use, recycle and finally dispose.
- Set realistic environmental objectives and targets at all relevant levels within the company and continually monitor performance.
- Promote environmental awareness among all employees and subcontractors to achieve our environmental objectives.
- Continually improve our environmental performance through periodic review and evaluation of our policy and management systems to ensure they remain suitable, adequate and effective.
- Encourage a sense of personal responsibility for environmental issues amongst employees and subcontractors through effective communication, training and positive organisational culture.

This policy will be reviewed in December 2019.

Clive Wickham
Chief Operating Officer

TAYLOR

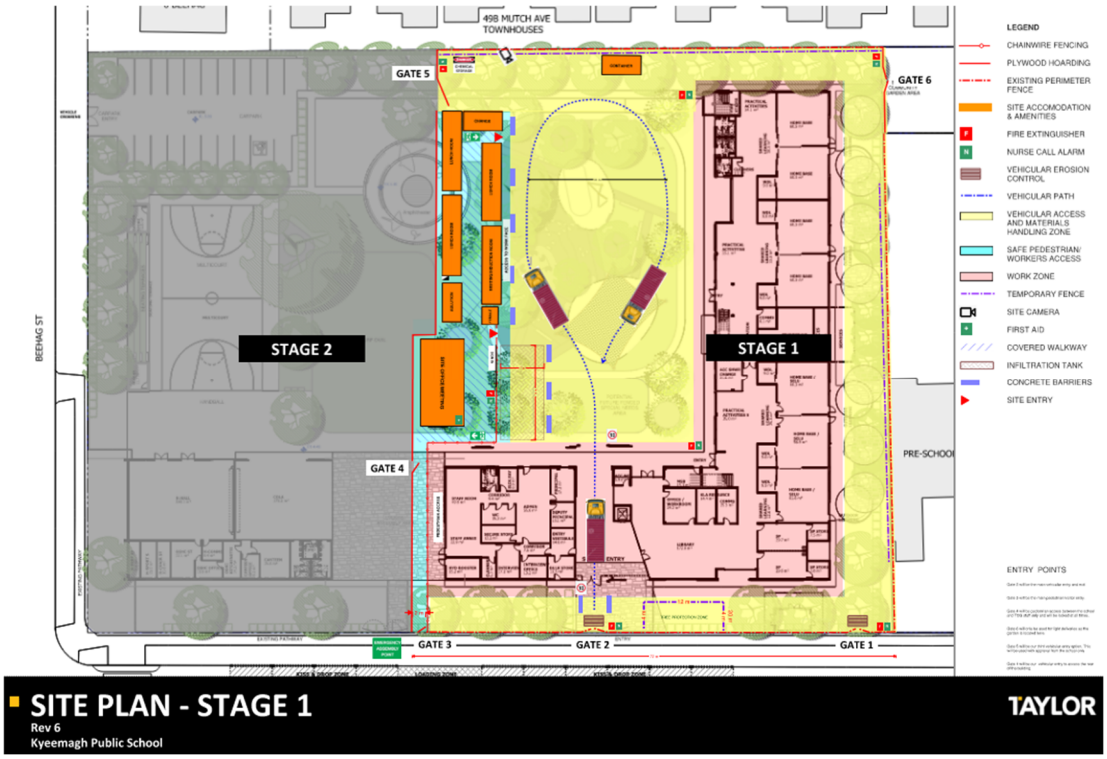
APPENDIX 3: TAYLOR CONSTRUCTION SPILL RESPONSE PROCEDURE FLOW CHART

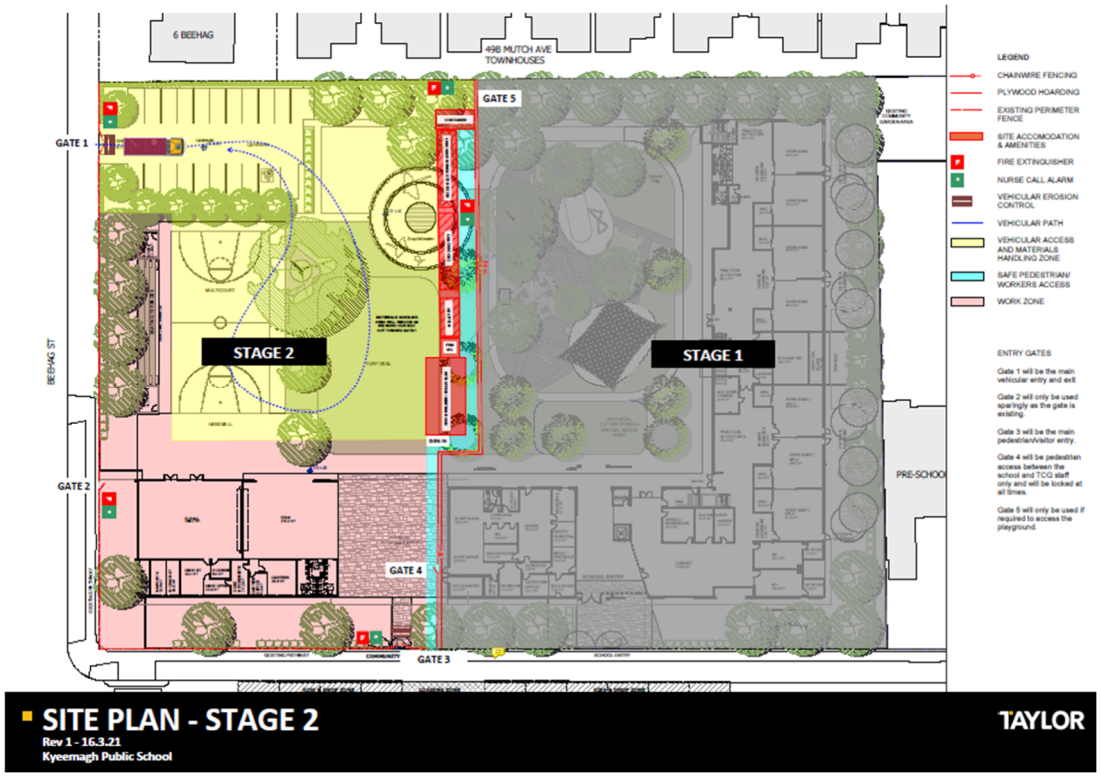


APPENDIX 4: SITE ENVIRONMENTAL EMERGENCY RESPONSE PLANS

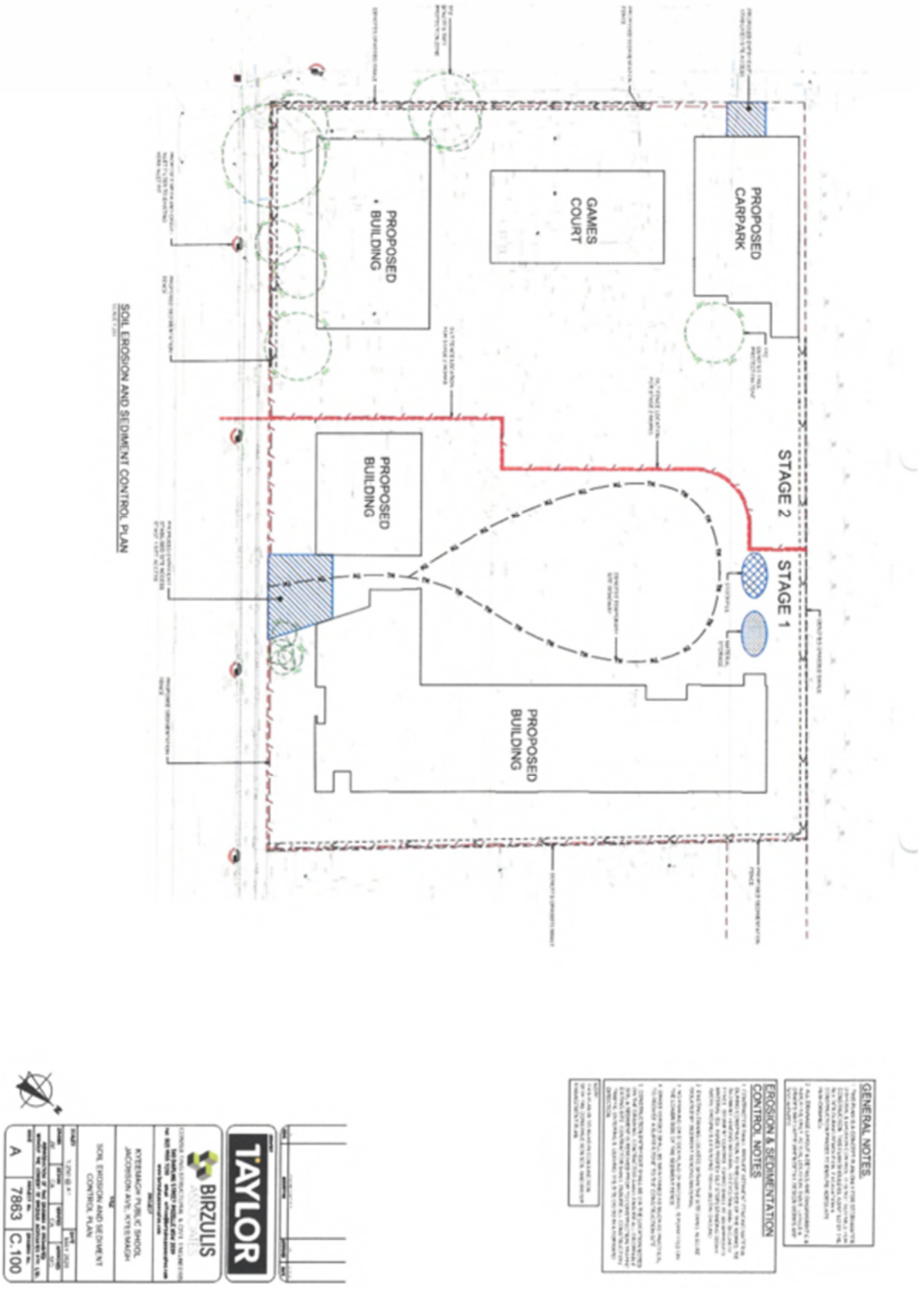
Potential emergency	What to do?	Relevant authorities and persons
Injury caused by: – Fire – Explosion – Machinery accidents – Minor injuries	• For serious injuries, call an ambulance. You should also have the contact details of the nearest doctor, medical centre and hospital; • Immediately inform the site first aid officer; • Follow the procedures as detailed in the Site Safety Plan; • For major injuries, contact the site manager or project manager.	Emergency services Nearest doctor Medical centre Site manager Project manager
Fire **Fire at the diesel tank** **Fire at any of the machineries** **Fire caused by vandalism**	• Evacuate all personnel to a safe area immediately; • Call the fire brigade (emergency services); • If the fire is likely to damage neighbouring property, inform the adjacent residents; • Follow the procedures as detailed in the Site Safety Plan; • For major fire emergencies, contact the site manager or project manager; • Inform terminal security. **Note**: fire extinguishers are located throughout the site as detailed in the Emergency Evacuation Map.	Emergency services Site manager Project manager Adjacent residents
Spills management and contaminated soils Major spills: • Spill or release of diesel fuel or oil; • Spill or release of other hazardous chemicals or material	For major spills (defined as a spill that is likely to have direct environmental consequences): • Immediately call the Fire Brigade and notify superintendent; • Identify the source of the spill; • Refer to the Material Safety Data Sheet (MSDS) and evaluate the hazards of the material.	Emergency services (fire brigade) HSE manager SM and PM EPA
Minor site spills **Acid sulphate soils**	• If the material is dangerous, evacuate the site immediately and notify all neighbours; • If it is safe to do so, halt the source of the spill immediately; • Contain the spill and control its flow; • Block storm water drains downstream of the spill; • EPA and local council must be notified about any spills that are likely to threaten the environment; • Minor spills (defined as spills which can be contained and rectified correctly without the need of external services), shall be contained and rectified with the site spill kit and disposed of correctly. Superintendent to be notified via incident report; • Reported to the site manager; • Where acid sulphate soils are discovered, the spoil shall not be removed from site; subsequent notification and testing will follow.	Emergency services (fire brigade) HSE manager SM and PM EPA
Heavy rainstorm and flood beyond the capacity of the sediment and erosion controls on-site or failure of the sedimentation control measures.	• Contain/ minimise the flow; • Contact council immediately; • Investigate reasons for failure and prepare an incident report; • Contact the project manager.	Council Site manager Project manager
Discovery of items of conservation value (e.g. flora and fauna, heritage).	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	Site manager Project manager
Discovery of contaminated material on site (e.g. underground fuel storage tanks).	Fence-off the area as 'no go' zone and contact the site manager or project manager immediately for further action.	Site manager Project manager

APPENDIX 5: SITE MAP – ENVIRONMENTAL REQUIREMENTS





APPENDIX 6: SEDIMENT CONTROL PLAN



TEMPORARY CONSTRUCTION EXIT
RUBBLE ALTERNATIVE
CROSS-SECTION OF CONSTRUCTION ENTRY/EXIT DETAIL
HAY BALE BARRIER DETAIL
SEDIMENT FENCE ON PAVED SURFACE
DIAGRAMMATIC VIEW
SEDIMENT FENCE DETAIL
TYPICAL SECTION
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP
SUMP SEDIMENT TRAP DETAIL
CATCH DRAIN
CATCH DRAIN CONSTRUCTION NOTES
SANDBAG KERB INLET SEDIMENT TRAP
MESH AND GRAVEL INLET FILTER
STOCKPILES DETAIL
BIRZULIS ASSOCIATES
TAYLOR
KYEEMAGH PUBLIC SCHOOL
JACOBSON AVE, KYEEMAGH
TYPICAL DETAILS - SOIL EROSION AND SEDIMENT CONTROL
A
7863
C.30

APPENDIX 7: ENVIRONMENTAL LEGAL AND OTHER REQUIREMENTS REGISTER

Risk Matrix		
Consequence	**Likelihood**	**Risk Level**
3 - Critical	3 - Probable	5/6 - High
2 - Moderate	2 - Occasional	3/4 - Medium
1 - Marginal	1 - Improbable	2 - Low

Kyeemagh Public School

Master Environmental Risk Register

TAYLOR

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Obtaining environmental approvals (licences, approvals, DA's, tree preservation etc)										
Approvals not obtained	**Delayed start of project - client dissatisfaction, additional costs, contractor management issues**	3	2	5	**Identify required approvals early** **Plan approvals at earliest possible stage and monitor progress**	3	1	4	Yes EP&A Act Fisheries Act Water Mgmtt Act EPBC (C'Wth) Act Local Govt Act LEPs or SEPPs	
Site Establishment and Clearing Works: Site compounds, Fencing, Amenities, Storage, Storage of fuel, Oils, Chemicals etc.										
Removal or disturbance of vegetation from the land,	**Loss of biodiversity, disturbance / destruction of endangered or protected species or habitats** **Potential fines for not obtaining or non-compliance with approvals**	3	2	5	*** Where possible, retain vegetation on site (will depend on client reqts)** *** Where endangered or protected species identified, relocate using qualified ecologist (refer to EIA, EMP, conditions of consent or conditions of EPBC referral/approval etc)**	3	1	4	Yes Native Veg. Act TSC Act EPBC (C'Wth) Act	
Disturbance of soil	**Erosion / soil loss / land degradation**	2	3	5	*** Minimise soil disturbance and stage development where possible** *** Strip topsoil and stockpile for site restoration** *** Install appropriate silt controls** *** Stabilise soil where practical (eg seeding, mulching, etc)**	2	2	4	Yes POEO s 120	
Disposal of vegetation	**Use of landfill space** **Methane generation in landfill**	2	1	3	**Mulch vegetation and re-use on site where possible or feasible** **Separate vegetation - divert to green waste recycling plant**	2	1	3	No but may be part of consent conditions	
Dust generation	**Local Nuisance (neighbours, community)**	2	3	5	**Minimise area cleared** **Spray dust affected areas with water,** **Stabilise soil with spray grass, seeds, spray mulch etc** **Cover or fence stockpiles** **Restrict vehicle access to stabilised areas**	1	2	3	Yes POEO s 126, 136-141 POEO (Clean Air) Regulation 2002	
Run-off of pollutants	**Water pollution - kill aquatic life (fish, plants etc)** **Potential fines and prosecution**	2	2	4	**Retain water on site (sediment ponds, diversion) where possible** **Water treatment, flocculation on site** **Re-use waste water on site (dust suppression etc) where clean enough** **Pump out polluted water (from bunds etc) - take to liquid waste depot using licensed contractors**	2	1	3	Yes POEO S 116, 120	
Spillage of oils, fuels, other pollutants	**Land pollution, soil contamination**	2	2	4	**Store all potentially polluting substances in contained areas (bunds, trays, chemicals cabinets etc)**	2	1	3	yes POEO S 116, 120 & 142	
Sediment run-off	**Stormwater/waterways pollution** **Increased nutrients in waterways leading to algal blooms** **Potential fines and prosecution**	2	2	4	**Install appropriate sediment and erosion controls & monitor** **Prepare Erosion and Sediment Control Plan (ESCP) or Soil and Water Management Plan (SWMP) and implement as required.**	2	1	3	Yes POEO s 120	

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Disturbing heritage items, aboriginal sacred sites, relics etc	**Destruction /damage of indigenous items / sacred sites Destruction / damage of European heritage items Potential negative media attention and community outrage**	2	1	3	**Obtain intial information from client, local council etc. If any heritage or Aboriginal aretfacts / relics are likely to occur on site, seek appropriate professional assistance. Document in EMP and implement requirements**	2	1	3	Yes National Parks & Wildlife Act	
Disturbing biological pathogens, plant diseases, exotic fauna (eg fire ants)	**Spread of plant diseases and other biological pests (eg Phytophtora, fire ants etc)**	1	1	2	**Survey of site - obtain information from client, councils, regulators etc Manage according to specific identified requirements**	1	1	2	?	
Weed disturbance	**Spread of noxious weeds leading to degradation of land, displacement of native species, loss of biodiversity**	1	1	2	**Specific controls in EMP where noxious weeds is an issue. Develop Vegetation Management Plan as required by regulatory authorities or clients.**	1	1	2	Noxious Weeds Act	
Use and application of pesticides										
Excess spraying Unlicensed use	**Kill non-targeted plants and animals Legal penalties for non-authorised use Contamination of waterways - death of fish and aquatic flora and fauna.**	3	2	5	**Use licensed contractors to apply pesticides (check authorisations) If using pesticides, must comply with Pesticides Act - requires records and competency. If using pesticides, document in EMP (also OHS risk)**	3	1	4	Pesticides Act 1999 Pesticides Regulation 1995	
Excavation / trenching "normal soils"										
Sediment run-off	**Sediment run-off / water pollution**	2	2	4	**Retain water on site (sediment ponds, diversion) where possible Install sediment controls (silt fences, sand bags, straw bales etc) Water treatment, flocculation on site**	2	1	3	Yes POEO s 120	
Damage water or sewer pipe	**Water pollution - sewage Land contamination**	3	2	5	**Call "dial before you dig" service prior to excavating Use "as built" site plans to locate services Use "Service locators" Hand excavate in areas with suspected services**	3	1	5	Yes POEO s 120 & 142	
Dust generation	**Local air pollution and nuisance to neighbours / community**	2	3	5	**Water spraying, Avoid working in hot, windy conditions where possible Erect "wind break" fences in high dust risk areas**	1	2	3	Yes s 126, 127	
"De-watering" of trenches										
Sediment laden water runoff	**Sediment run-off / water pollution**	2	2	4	**Allow water to settle to reduce suspended sediment Test "turbidity levels" and pH prior to discharge If required, add flocculant / pH correction Discharge water onto vegetated areas, protected downstream by sediment controls**	2	1	3	Yes POEO s 120	
Excavation / trenching and stockpiling "acid sulfate soils"										
sediment and highly acid water run-off from oxidation process	**Water pollution - kill aquatic life (fish, plants etc) Potential fines and prosecution**	2	2	4	**Determine level of risk through Acid Sulfate Soil Risk Maps, or through client / council If in risk area, develop an Acid Sulfate Soils Management Plan or include in EMP and manage in accordance with requirements Main control is to minimise time kept out of water (oxidises when exposed to air) and prevent run-off from exposed sediments. Lime can be used to neutralise**	2	1	3	Yes POEO s 120	
Excavation / trenching in reclaimed land / potentially contaminated land										

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Mobilisation and run-off of contaminated sediments	**Water pollution - kill aquatic life (fish, plants etc)** **Potential fines and prosecution**	2	2	4	**Determine level of risk through search of previous landuse - information available from councils, clients, DECC etc** **If in a risk area, develop a contaminated site management plan (get assistance from experts)** **Main control is to contain sediments on site**	2	1	3	Yes POEO s 120	
Stockpiling - Normal Soils										
Sedimentation run-off Dust generation	**Sediment run-off / water pollution** **Dust nuisance - community**	3	3	6	**Install sediment controls downstream of stockpiles** **Locate stockpiles in areas that will not result in off-site escape of sediment.** **Where exposed, protect stockpiles with wind barriers.** **Keep stockpiles low in profile.** **Stabilise / cover / temp vegetate where retained for significant period.**	2	1	3	Yes POEO s 120	
Stockpiling - Acid Sulfate Soils										
Acid water run-off	**Kill aquatic organisms(fish, plants etc)**	2	1	3	**Prepare Acid sulfate soils management plan if working with Acid sulfate soils and get expert advice.** **Minimise stockpiling where possible** **Prevent any run-off**	2	1	3	Yes POEO s 120	
Use of vehicles and plant										
Air emissions (exhaust)	**Air pollution (particulates, visible smoke)** **Potential smoky vehicle fines** **CO2 pollution - contribution to climate change**	1	2	3	**Maintain plant / vehicle appropriately** **Daily check of exhaust (visual)**	1	1	2	Yes POEO s 124-128 POEO (Clean Air) Regulation 2002	
Use of fuel - diesel, petrol	**Depletion of natural resources (fossil fuels)**	1	3	4	**Use appropriate machinery for task** **Monitoring of fuel usage** **Minimise idling time (switch off when not in use)** **Driving technique - "drive green"** **Investigate alternative "bio" fuels**	1	2	3	No	
Spillage of fuel when refuelling	**Land Contamination** **Water pollution**	2	2	4	**Refuel in designated bunded refuelling areas** **Mobile refuelling away from drains and waterways** **Spill kit on standby when refuelling** **Small containers used when mobile refuelling** **Use portable bunds**	2	1	3	yes POEO S 116, 120 & 142	
Noise and vibration emissions	**Disturbance of community / neighbours / complaints**	2	3	5	**Maintain plant / vehicle appropriately** **Daily check of noise level (aural)** **Initial and periodic noise monitoring of plant**	1	2	3	yes POEO s 139-141 POEO (Noise Control) Reg 2008	
Tracking mud onto roads	**Sediment run-off / water pollution** **Visual - potential for fines**	2	3	5	**Installation of rumble grids/ shake pads** **Stabilise truck routes with ballast,** **Install wheel wash on muddy sites** **Sweeping of public roads as required**	2	1	3	Yes POEO s 120	
Uncovered loads	**Littering, dust, material on roads leading to land and water pollution. Potential prosecution.**	2	2	4	**Cover all loads whenever on public roads**	2	1	3	Yes POEO s 145	
Loss of fluids (hydraulic oil, coolant, fuel etc)	**Land contamination** **Stormwater/waterways pollution**	3	2	5	**Maintain and inspect hoses on vehicles** **Maintain vehicles and plant, report defects, repair ASAP**	2	1	3	Yes POEO s 120	
Storage and use of chemicals and other hazardous substances										

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Spillage of chemicals, fuels, hazardous substances	**Land contamination Stormwater/waterways pollution vapourisation leading to air pollution**	3	2	5	**Store all hazardous substances in bunded / contained area, purpose built flammable goods cabinets etc Handle all hazardous substances in areas that do not drain to stormwater or waterways Supply and maintain spill kits in areas where substances handled or stored Keep containers (petrol, other volatile substances) closed Carry portable spill kits in vehicles and on plant Choose "environmentally friendly" spill kit materials Appropriate labelling and signage Provide MSDSs Emergency Response Procedures Provide appropriate security (keep locked) Contractor Management - control substances brought onto site by contractors Procedures - Follow Hazardous Substances Procedure (to be developed) Training and awareness / induction / toolbox talks Environmental / OHS inspections**	2	1	3	Yes POEO S 116, 120 & S 142-145	
Storage of incompatible chemicals together	**Chemical reaction - leading to explosion or toxic vapours**	3	2	5	**Separation of incompatible substances (use dangerous goods classifications) Appropriate labelling and signage Emergency Plan - identification of scenario and response plan Appropriate suppression systems and fire fighting equipment for substances held**	3	1	4	Yes OHS amendment (Dangerous Goods) Act	
Build up of vapours in storage areas	**Explosion, fire leading to air and water pollution**	3	2	5	**Ventilation of storage areas**	3	1	4	Yes POEO s 120	
Storage of flammable substances near ignition sources	**Explosion, fire leading to air and water pollution**	3	2	5	**Do not store flammable substances near ignition sources (eg - generators, welding operations etc)**	3	1	4	AS 1940?	
Concrete pouring and use										
Loss of cement and alkaline water during pour	**Pollution of waterways (concrete slurry, alkaline water) leading to killing of aquatic organisms**	2	2	4	**Appropriate preparation and planning for pour Retain potentially alkaline and sediment laded water on site**	2	1	3	Yes POEO s 120	
Unused concrete	**Waste product - depletion of natural resources Transport of concrete waste - depletion of resources Use space in landfill - depletion of natural resources**	1	2	3	**Accurate ordering of concrete Recycling / re-use of excess concrete on site. Unavoidable excess concrete taken to concrete recyclers**	1	1	2	No (but may be required as condition of consent)	
Use of curing compounds	**Can help minimise water usage (positive impact)**	1	1	2	**Use "environmentally friendly" curing compounds Use compounds to minimise water usage**	1	1	2	No	
Usage of water	**Depletion / wastage of natural resources (water)**	2	2	4	**Water capture and re-use of wash water**	2	1	3	No	
Concrete wash-out (of trucks)										
Generation of alkaline water with concrete residue	**Water pollution - kill aquatic life (fish, plants etc) Potential fines and prosecution**	2	2	4	**Washout in dedicated area Water capture and re-use of water - treat if necessary (flocculate and pH correction) Truck wash-out activities off-site by supplier where possible**	2	1	3	Yes POEO s 120	
Concrete / bitumen saw cutting										

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Generation of sediment laden water	**Water pollution to stormwater and waterways**	2	2	4	**Vacuum excess water, sweep up residue when dry** **Install effective sediment controls around drains**	2	1	4	Yes POEO s 120	
Demolition										
Waste generation	**Use of landfill space** **Wastage of natural resources**	1	2	3	**Separate waste streams (steel, concrete, bricks, timber etc) - Provide appropriate bins** **Select contractors who can separate and recycle various waste streams.**	1	1	2	No	
Asbestos waste	**Community health and OHS impacts** **Illegal disposal - leading to prosecution**	3	2	5	**Engage licensed contractors to remove and take to landfill able to accept asbestos** **Asbestos must be double wrapped in specified grades of plastic and sealed prior to transport and disposal** **Keep records of disposal**	2	1	3	Yes POEO s 143 & 144 POEO (Waste) Regulation 2005	
Dust generation	**Local Nuisance (neighbours, community)**	2	3	5	**Water spraying as required**	1	2	3	Yes POEO s 126, 127 POEO (Clean Air) Regulation 2002	
Noise and vibration emissions	**Local Nuisance (neighbours, community)**	2	3	5	**Timing of noisy activities during specified working hours**	1	2	3	Yes POEO s 139-141 POEO (Noise Control) Reg 2008	
Wet trades (brick laying, rendering, brick cleaning, painting, tiling, final clean etc)										
Contaminated water run-off	**Water pollution (chemicals, suspended solids etc)**	2	2	4	**Retain water on site - capture and pump out or divert to sediment ponds** **Remove contaminated water for disposal where required**	2	1	3	Yes POEO s 120	
Disposal of paints, thinners, used solvents, paint washwater, residues etc	**Water pollution, land contamination** **Fines for inappropriate disposal**	2	2	4	**Engage licensed contractors to remove and recycle solvent based products, dispose of washwater.** **Contractor Management - ensure painters remove all wastes and dispose of appropriately.** **Waste tracking - keep records of disposal.**	2	1	3	Yes POEO s 120, 143 & 144 POEO (Waste) Regulation 2005	
Emissions of Volatile Organic Compounds (VOCs) from paint	**Air pollution**	2	2	4	**Use low VOC paints where possible**	1	1	2	Yes POEO s 124 - 128 POEO (Clean Air) Regulation 2002	
Spillage of paints, thinners etc	**Water pollution, land contamination** **Fines water pollution**	2	2	4	**Appropriate storage and use (see Hazardous substance section)** **Minimise quantities kept on site - contractors take off-site when not in use.**	2	1	3	Yes POEO s 120	
Piling (bored and drilled) (dry land)										
Noise and vibration Dust emissions	**Nuisance noise and vibration to neighbours** **Dust nuisance to neighbours**	2	3	5	**Maintain plant to ensure optimal operation** **Operate machinery only during designated operating hours** **Use dust suppression as required**	1	2	3	Yes POEO s 126, 127 139-141 POEO (Clean Air) Regulation 2002	
Piling (bored and drilled) (wetlands, waterways)										
Noise and vibration	**Nuisance noise and vibration to neighbours**	2	3	5	**Maintain plant to ensure optimal operation** **Operate machinery only during designated operating hours**	1	2	3	Yes POEO s 139-141 POEO (Noise Control) Reg 2008	

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Disturbance of sediments	**Water pollution**	2	2	4	**Employ techniques to allow working in dry environment (isolate working area from water, pump out ingress water etc). Methods should be detailed in EMP where applicable.**	2	1	3	Yes POEO s 120	
Removal of riparian vegetation	**Destruction of riparian vegetation leading to instability of river banks**	3	1	4	**Minimise clearing of vegetation where possible Minimise disturbance of river banks Re-instate river banks to appropriate standards Detailed methodology should be documented in EMP.**	3	1	4	Yes Native Vegetation Act TSC Act	
Contact with contaminated sediments (man induced or acid sulfate soils	**Water pollution Aquatic fauna death, Human Health impacts**	2	2	4	**If contaminated sediments or acid sulfate soils are likely to be encountered, seek expert assistance and work to a documented plan.**	2	1	3	Yes POEO s 120	
Spillage of oils, fuels etc into water	**Water pollution**	2	2	4	**Maintain machinery to ensure no oil leaks (inspect daily) No refuelling over water except with robust controls in place**	2	1	3	Yes POEO s 120	
Use of site amenities (toilets, showers, lunch rooms etc)										
Use of water Use of energy	**Depletion of natural resources (water, fossil fuels)**	2	3	4	**Purchase / Install energy efficient lighting and appliances Install water efficient taps, shower heads Zone lighting areas so that whole areas are not lit if not required Signage - turn off lights, limit shower time, save water etc Adjust thermostats on airconditioners/heaters to minimise energy usage Install solar / heat pump water heaters where feasible Training and awareness - why these things should be done**	2	2	4	No	
Wastes to sewer Sewage pump-out Port-a-loos	**Water pollution**	2	2	4	**Appropriate connection to sewer If pump-out, inspections and regular pump-out Use appropriate port-a-loo contractors - regular servicing**	2	1	3	Yes POEO s 120	
Emissions of Ozone Depleting substances	**Contributing to hole in ozone layer Fines / prosecution for inappropriate or unlicensed supply and handling**	3	2	5	**Use licensed air conditioning contractors, for servicing and re-gassing Do not use halon gas fire suppressionn systems**	2	1	3	Yes Ozone Protection Act 1989	
Domestic waste generation (packaging, beverage containers etc)	**Depletion of natural resources litter Use of landfill space**	3	3	6	**Provide water supply, not bottled water Provide recycling bins and separate Use contractors that separate waste and take to recycling facilities.**	1	2	3	Yes Waste Avoidance and Resource Recovery Act 2001	
Servicing of vehicles (on site)										
Oil, fuel, coolant and other chemical spillage	**Water pollution Land / ground contamination**	2	2	4	**Do not refuel or service vehicles in the vicinity of drains, drainage lines, creeks etc Carry portable spill kits and keep nearby when servicing vehicles Use spill mats during servicing to prevent ground contamination If ground contamination occurs, clean-up immediately.**	2	1	3	Yes POEO s 120 & 142	
Material Delivery										

		Inherent / Initial Risk				Residual Risk				
Environmental Aspect	**Environmental Impact**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Controls**	**Consequence**	**Likelihood**	**Overall Risk Level**	**Legal Requirement**	**Additional Controls or Actions**
Unwanted packaging Excess goods	**Depletion of Natural resources** **Use of landfill space if not recycled**	3	2	5	**Where possible, have suppliers take back the packaging as part of the contract.** **Purchase goods with minimal packaging wherever possible** **Reuse if possible** **Separate and recycle - avoid sending to landfill**	2	1	3	No	
Waste Management										
Generation and disposal of waste Recycling of waste Re-use of waste materials	**Use of landfill space** **Depletion of Natural Resources** **Contamination of land (landfill)**	3	3	6	**Use heirarchy of waste - Avoid, reduce, recycle / re-process, dispose.** **Provide appropriate bins for separation of waste streams - ensure good signage in place** **For hazardous waste, ensure appropriate on-site storage, separation and removal by licensed contractors** **If waste is trackable, ensure appropriate records are kept** **Separate waste at the source and place in appropriate bins** **Do not cross contaminate bins - undertake waste audits to ensure appropriate separation** **Prepare waste management plan where large quantities of waste will be generated - document in EMP.** **Engage licensed, competent waste contractors who will separate and deliver waste to appropriate facilities.** **Keep records of waste streams removed - (obtain from waste contractors - build into contracts)** **Refer to Waste Management Procedure for details**	2	1	3	Yes POEO s 143, 144 POEO (Waste) regulation 2005 Waste Avoidance and Resource Recovery Act 2001	

Taylor Construction Group Pty Ltd
ABN 25 067 428 344

Level 13, 157 Walker St, North Sydney NSW 2060
T 02 8736 9000 *F* 02 8736 9090

taylorau.com.au

TAYLOR