St Hilliers

Environmental Management Plan

Greenbank Training Area

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01 Project Description

The Greenbank Training Area Project (GBTA) is a multi staged roll out project. The project consists of:

- Safe Driver Training Area
- Southern Entry point and Range control complex,
- Training Camp
- Marksmanship Training Range
- Internal Roads
- Depot for 25th/49th Battalion, Royal Queensland Regiment

02 Introduction

This Environmental Management Plan (EMP) provides specific environmental management requirements to ensure that works undertaken have minimal adverse effects on the environment. It has been prepared to address the environmental management strategies including performance criteria, management actions, and monitoring, auditing and reporting requirements and to specify areas of responsibility related to the construction phase of the project.

This plan details both the management and operational processes to ensure construction / operation activities achieve the desired environmental outcomes. as shown in Figure 1 below.

Scope

Safe Driver Training Area. The area will provide an array of new driving surfaces in varying environments, including replication of a suburban landscape. The area will also provide a Control Building, limited maintenance workshop, ablutions and waiting areas for students. This area will incorporate Engineer Mine Clearance Lanes which will provide three areas of approximately 30m by 30m of varying surfaces for the training of minefield clearance by hand for personnel from the 2nd Combat Engineer Regiment

A new **Southern Entry point** and **Range control complex,** including a vehicle wash facility. The main entry point will be relocated and will provide a new service road to the new range control facilities. The range control facilities will provide working space for personnel, a new workshop, check-in point and briefing room for users and visitors, and related range communications network

Permanent **Training Camp** Accommodation. 40 man blocks which can also be used as training rooms, fully fitted kitchen and dining facility, new Q store buildings and ablution blocks

Upgrade to existing **Marksmanship Training Range**. This will refurbish the disused Pairs Battle Range to include a Range Control Tower, firing mounds at every 100m out to 600m, mechanical targets, a waiting shelter, an ammunition distribution shelter and ablutions

An upgrade of some **Internal Roads** will also be incorporated within the required works.

Depot for **25th/49th Battalion, Royal Queensland Regiment.** The depot will include new buildings for Battalion Headquarters, the two Rifle Companies and Administration Company. It will also include a new Q store and transport compound.

03 Strategy

General Overview

This plan describes how The Greenbank Training Area Project (GBTA) project will be managed within the requirements and constraints imposed by the both the Managing Director of St Hilliers Construction and the State Manager for St Hilliers Construction' activities in Queensland, as documented in the Integrated Management System (IMS).

The Management System for this project has been built by extracting relevant processes and controls from The IMS. This plan is a subset of those project controls relevant to Environment.

The IMS is periodically reviewed at the corporate, business unit and project levels. Modifications and improvements resulting from reviews are integrated into the management system and communicated to promote consistent, best practice standards and continual improvement across all our operations.

By monitoring and auditing project controls, St Hilliers Construction will ensure they have been properly implemented. In addition, regular reporting to management means their effectiveness is regularly assessed. Changes to the controls will be instigated if they are not achieving their objectives.

Environmental Overview

St Hilliers Construction is committed to providing the services it offers in a manner which conforms to the contractual requirements of its customers and to all relevant regulatory, legislative and statutory requirements. To achieve this objective STH plans, implements and controls systems which facilitate the management of the environmental aspects of its projects.

In accordance with corporate objectives and its requirements, this project has assessed the environmental impacts and has analysed the environmental risks associated with the project activities. Project activities have been planned and, where considered necessary, controls have been developed to mitigate or eliminate the perceived environmental risks.

Induction and Training

All site personnel will attend a Project Induction, which will incorporate all project environmental aspects, prior to commencing on site.

Training (formal and toolbox talks) will be undertaken regularly throughout the duration of the project.

Risk Analysis

Environmental risk analysis will form part of any work Process Plan and or Safe Work Method Statement. Areas of concern will be identified by the Site Manager and Health & Safety Manager prior to commencement of specific work activities and controlled by the relevant instruction developed.

Environmental risks will also be identified by using past environmental investigations, on-site knowledge, and any approvals and permits for the project.

Environmental Issues Management/ Monitoring

Key environmental issues requiring monitoring during the construction phase of the project include but not limited to noise, dust, flora and fauna protection and management and surface water quality.

St Hilliers will monitor each of these issues throughout the works process. This monitoring will be performed in accordance with relevant approvals/permits in addition to regular daily, weekly and monthly inspections (refer Inspect Site section of this Plan).

The ongoing monitoring (Construction phase) details for each element is described in the relevant sections that form part of this EMP.

Project Environmental Statement

Management will lead by example to ensure that statutory and contractual requirements are met. Environmental performance will be continuously monitored and work instructions reviewed with the aim of eliminating risk to the extent possible and ensure continual improvement. Employees are responsible for complying with these instructions, rectifying or reporting harmful environmental conditions, and actively participating in meetings and various training sessions on environmental issues.

Environmental Management activities will cover the following areas:

- Noise and Vibration Management
- Water Quality, Sediment and Erosion Control
- Air Quality and Dust Management
- Solid Waste Management
- Contaminated Soil Management
- Flora and Fauna
- Cultural Heritage
- Demolition Environmental Management

04 Objectives and Targets

Objectives

The specific objective for Environmental Management is:

Review legislative, regulatory and contractual requirements and provide a framework for the implementation of instructions and processes to ensure that all environmental requirements are met, including:

- Meeting Client and Stakeholder requirements
- Satisfying Objectives, Targets and Key Performance Indicators
- Compliance with legislation, ministerial and authority requirements

Client Environmental Objectives

The Environmental Objectives are to:

- encourage best practice environmental management through planning, commitment and continuous improvement;
- prevent and minimise adverse impacts on the Environment;
- identify the potential for, and respond to, Environmental Incidents, accidents and emergency situations and take corrective action;
- identify and control possible environmental hazards associated with the Works and the Contractor's Activities;
- establish procedures to ensure that no hazardous substance is stored on Commonwealth land without approval;
- recognise and protect any special environmental characteristics of the Site (including cultural heritage significance);
- define roles and responsibilities for personnel;
- ensure environmental training and awareness programmes are provided to employees and subcontractors;
- ensure subcontractors implement the Environmental Management Plan;
- define how the management of the Environment during the Contractor's Activities is reported and performance evaluated;
- describe all monitoring procedures required to identify impacts on the Environment as a result of the Works and the Contractor's Activities;
- implement complaint reporting procedures and maintain records of complaints and response to complaints; and
- establish and maintain programs and procedures for periodic Environmental Management Plan audits to be carried out.

Targets

The key environmental targets for the project are:

- Zero number of environmental incidents
- Meet all contractual and statutory environmental requirements within the established constraints

Defence ESD Goals for Buildings

"Defence is committed to pursuing the application of ESD principles in its built environment, including development of new facilities and refurbishment of older properties."

The key ESD goals for Defence's buildings can be summarised as the provision of healthy internal and external environments for Defence's customers, staff and contractors and reducing the whole-of-life

environmental impacts of buildings, including:

- greenhouse emissions
- potable water consumption
- pollution and emissions
- impact on local ecology
- use of natural resources
- generation of waste
- toxicity of materials

It is also a requirement that the ESD performance is adequately monitored and reported during the whole-of life cycle (i.e. during design, construction and operation stages).

The Defence ESD Strategy also recognises the importance of addressing ESD principles and a whole-of-life approach during all phases of asset development, and also the need to balance ESD goals with other Defence requirements.

05 Policies

St Hilliers National Environmental Policy is included as an appendix to the Site Management Plan.

The Energy Policy for Commonwealth Agencies, Commonwealth

Procurement Guidelines and Defence Green Procurement Policy; have also been considered when preparing this plan. http://australia.gov.au/

06 Organisation and Responsibilities

The management of this project is organised under the control of the Project Manager, as depicted in the Project Organisation Chart included as Appendix C to the Site Management Plan.

STH may engage the services of specialised subcontractors in carrying out its duties, while always retaining control and coordination of the design and construction processes.

STH employees will manage all matters requiring communication or coordination with other contractors thus ensuring there is always ‘one point of contact' during the course of the project.

Project Organisation Chart

Formal lines of communication between project personnel are shown on the organisation chart included as an appendix to the Project Management Plan. These will be supplemented by informal lines of communication to facilitate efficiency and effectiveness of the management team.

Resource Monitoring

Project staffing requirements and the proposed duration for each position is determined by the Project Manager and the State Operations Manager.

During the project, staff numbers and their responsibilities will be subject to change. The Project Manager will assign duties to personnel based on their experience so that the necessary activities are completed properly and in a timely manner.

If at any time during the project the Project Manager considers resources inadequate for the work to be done, the perceived inadequacy will be discussed with the State Operations Manager to determine a solution.

07 Constraints

Constraints are those issues (contractual, regulatory, physical or social) that define the environment and conditions under which the works must be undertaken. The following constraints relating to Environmental Management have been identified for the project:

Local

- Prior to any works commencing, the Environmental Management aspects of the Project Plan are to be issued to Defence and an Environmental Clearance Certificate must be received by St Hilliers
- Local council Bylaws
- Filling and Excavation Code
- Stormwater Management Code

Guides and Standards

- ISO 14001: 2004
  Environmental management systems - Requirements with guidance for use
- ISO 14004: 2004
  Environmental management systems - General guidelines on principles, systems and support techniques

Water and Wastewater

- Water Quality Sampling Manual - For use in Testing for Compliance with the Environmental Protection Act 1994. Third Edition (Department of Environment 1999).
- Standard Methods of the Examination of Water and Wastewater - Australian Waste Water Association (AWWA).
- AS 2031 Selection of Containers and Preservation of Water Samples for Chemical and Microbiological Analysis.

Soils

- Australian and New Zealand Environment and Conservation Council (ANZECC)/National Health and Medical Research Council (NHMRC) - Guidelines for the Assessment and Management of Contaminated Sites.
- Queensland Government Chemical Laboratory - Guidelines for Soil Sampling.
- State Planning Policy 2/02 - Planning and Managing Development Involving Acid Sulfate Soils.
- Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (Department of Environment 1998).
- AS4482 Guide to the Sampling of Potentially Contaminated Soil, 1997
- Erosion and Sediment Control Manual, Department of Main Roads, 1998
- Erosion and Sediment Control Manual, Institution of Engineers, 1996
- Queensland Urban Drainage Manual, 1992
- EPA Guidelines

Air

- AS 3580 Methods of Sampling and Analysis of Ambient Air
- EN 12341 Equivalency Method for OSIRIS Real Time Monitoring

Noise and Vibration

- Interim Guidelines and Technical Notes for Road Traffic Noise Amelioration (DMR 1992).
- E1 Environmental Guideline "Noise from Construction, Maintenance and Demolition Sites" (EPA 1989).
- Noise Measurement Manual (EPA 1995).
- AS 1055.1 and AS 1055.2 Acoustics - Description and Management of Environmental Noise.
- AS 2187 Explosives - Storage Transport and Use (Explosives Code).
- AS 2436 Guide to Noise Control on Construction, Maintenance and Demolition Sites.
- AS 2659.1 Guide to the Use of Sound Measuring Equipment.
- AS 2659 Sound Level Meters.
- AS 2702 Acoustics - Methods for Measurement of Road Traffic Noise.

Dangerous Goods

- AS 1216 Classification, Hazard Identification and Information Systems for Dangerous Goods.
- AS 1678 Emergency Instruction Guides - Transport.
- AS 1940 Storage and Handling of Flammable and Combustible Liquids.
- AS 2508 Safe Storage and Handling Information Cards for Hazardous Materials.
- AS 2809 Road Tank Vehicles for Dangerous Goods.
- AS 2931 Selection and Use of Emergency Instruction Guides for Transport of Dangerous Goods.
- AS3780.8 The Storage and Handling of Corrosive Substances

Stakeholder/ Local Community

In order to satisfy the requirements of the Project's stakeholders and local community; consultation with the Client will be undertaken to identify all risks, constraints and issues relating to environmental matters for the GBTA project.

The programming and conduction of the works shall be carefully considered so as to minimise interference with the local community and the environment.

St Hilliers shall provide notice to Defence regarding project duration, peak periods of construction, hours of operations, specific environmental management issues, complaints management procedures and project contact detail, night work, change in work hours, and disruptions to services. Forums and or letterbox drops will be conducted to inform the local residents of any disruptions.

7.1 Risks

Risk management for this project involves a systematic method of identifying, analysing and controlling the risks associated with the project's activities or processes, to minimise loss and maximise opportunities.

Risk management, in accordance with the requirements of AS/NZS 4260:2004 is an integral component of the St Hilliers Management System.

Risk analysis involves both a quantitative assessment of commercial risk and qualitative assessment of risks that could significantly impact upon project objectives and targets and strategies to control or minimise them. By monitoring the implementation of the controls put in place, St Hilliers will ensure that the desired outcomes are achieved.

Further details on the risk analysis process are included in the 'Perform Project Risk Analysis' topic of this Plan.

08 Environment

8.1 Consult and Communicate

8.1.1 Induct Personnel

DESCRIPTION

The site specific induction is the process for inducting new personnel onto the site. It shall communicate site specific requirements and ensure all workers are advised of current HSE Acts, regulations, standards, Codes of Practice and other documentation relevant to HSE.

RESPONSIBILITIES

Senior Project Administrator, Project Manager, Contractor, Health and Safety Manager

PROCESS

Before any person is permitted to commence work, including Contractor personnel, he /she will be given a site specific workplace induction, which includes but is not limited to health, safety, environment, quality and community content. The induction will be delivered by the Health and Safety Manager (or delegate).

The St Hilliers Site Induction Agenda details minimum induction requirements. All project personnel will receive initial site specific safety induction training on arrival to site that addresses the key Project initiatives and the requirements of the Project Induction Program. They may receive a further induction for specific Area access as appropriate. Arrangements for the induction of all personnel by the Range Control Officer prior to being allowed to enter the Site, including written confirmation that the person has been inducted and has been given a briefing on the types of Unexploded Ordnance that have commonly been used at the Site.

The Site Inductions provides details of the Induction Process. Information regarding health monitoring is provided through site inductions, the risk and hazard schedule and other communication during the project.

Pre-Induction Requirements

General Industry Training

- Contractor personnel must show evidence of having undergone the training required in accordance with their trade and activities and which meets the guidelines in the relevant State occupational health and safety regulation (ie general industry induction).
- Relevant photocopies of all trade and safety qualifications will be put on file in the induction register

Pre-Approval of Personnel

- Both Contractor and 2nd Tier Contractor personnel must be pre approved by either the Project Manager or Commercial Manager, with all relevant Insurances and/or Certificates prior to the site specific induction taking place.

Subcontractor Pre- Commencement Meetings

- Before commencing work on the project each contractor's management representative and Safety Coordinator will attend a meeting with members of the project site management team. Health, Safety and Environmental items to be addressed will be detailed on meeting agenda and action items arising noted, with responsibility for action assigned together with a completion date.

Induction Content

Induction content will reflect the outcome of the project risk assessment. Inductions will cover the following areas.

General:

- Project description
- Site access, familiarisation and rules
- Client specific requirements
- Permits to work, licences and tickets
- All relevant company policies
- Hours of work

Health & Safety and Environmental:

- Corporate Health and safety Policy
- Corporate Environmental Policy
- Project Safety Plan and Safety Programme
- Project Environmental Programme
- Key personnel and Safety, Health and Environmental Committee representatives
- General duty of care (safety and environment)
- Environmental concerns and impacts (water quality, noise, dust, waste, cultural heritage, sensitive areas, equipment clean down, etc.)
- General and specific obligations relating to site personnel and Contractor
- SAFE Work Method Statements (SWMS)
- Material safety information/data sheets (MSDS)
- Personal protective equipment
- Safety signs
- Drugs and Alcohol
- Personal hygiene and behaviour
- Incidents, hazard alerts and remedial action
- Management of personal damage
- Employee Assistance Program
- Fire, emergency and evacuation procedures
- Specific equipment operation

Community:

- Community obligations, handling of enquiries and complaints, dealing with the media.

Industrial Relations:

- Code Compliance and Industrial Relations overview

Quality:

- Quality and system requirements.

Following Induction

Following the site specific induction, each participant will be given a:

- Multiple choice induction questionnaire
- Induction Record form
- Stickers, project induction cards etc. as a form of induction attendance confirmation.
- Site Safety Access Card

A copy of the Induction Record form will be kept in the project's data base on site.

Inductee attendances (with signatures) will be recorded as attendance confirmation.

All site personnel will be issued with a controlled identification pass that includes: photograph, name, company represented and project name which they are required to carry at all times; as approved by the CA

8.1.2 Conduct Toolbox Talks

DESCRIPTION

Site and contractor management will implement a program of toolbox talks / meetings for all personnel. The sessions will be of adequate duration to cover all relevant information and structured to encourage full participation by personnel.

RESPONSIBILITIES

Supervisor, Contractor, Project Engineer, Safety Officer, Foreman

PROCESS

Toolbox meetings to discuss workplace H&S issues will be conducted for individual work groups by their immediate supervisors who in turn will be assisted and supported by members of their line management. Toolbox meetings will be held weekly and will be attended by all members of the work group. Contractors may hold their own and forward copies to STH.

The agenda for toolbox meetings will be directed toward the activities and tasks associated with the work groups' activities. It will also deal with statutory requirements concerning general S&H issues that may be encountered in the course of those activities. St Hilliers Safety Alerts may be also used as a source of information for this.

The project Foreman / Supervisor may also call an additional toolbox meeting with a group of workers to discuss or highlight any aspect of environment, quality (workmanship) or health and safety.

Topics to be Covered in Talks

Toolbox talks will cover topics including:

- changes in site conditions or the nature of work
- importance of personal protective equipment
- review of:
    - safety issues relating to the work environment, e.g. climatic conditions, heat stress, traffic management, working at heights, manual handling, hazardous substances
    - environmental management, e.g. noise, water quality, waste management, cultural heritage, sensitive sites
    - risk management issues and controls associated with the works
    - product quality issues and general quality management controls
    - emergency procedures and control measures, particularly with relation to ongoing changes on site
    - incidents
    - SWMS / system changes
    - environmental and safety alerts, hazard alerts and bulletins
    - stakeholder and community relations concerns and considerations
    - notices issued by the regulator.
    - design changes affecting workplace health and safety of site personnel
    - lessons learnt
    - PPE

During toolbox talks, the opportunity will be provided for employees (or Contractor) to raise issues and promote discussion.

Recording Talks

The project Supervisor / Foreman will record toolbox talks using the Record of Toolbox Meeting and ensure all attendees print and sign their names.

If any deficiencies or remedial actions have been noted, the name of the person responsible for the action will be recorded, along with the date for completion.

The completed minutes will be distributed as follows:

- original to the project administration officer/ secretary for checking, circulating for sign off and for filing including updating the Toolbox Talk Register.
- copies to designated personnel for action where required. Once actions are completed, have them signed off on the form by the responsible person
- copies displayed in relevant locations.

8.1.3 Establish Safety, Health and Environment Committee

DESCRIPTION

Describes the process to establish a committee that acts as the main method of consultation with regard to Health, Safety and Environmental issues.

RESPONSIBILITIES

Project Personnel, Safety officer, Project Manager, Project Safety Team,

PROCESS

A Health, Safety and Environment Committee will be established in line with relevant State guidelines.

State legislation provides guidelines for the composition and functions of the Committee and frequency of meetings.

Once established, the Project Manager and the Health, Safety and Environment Committee will perform the following activities:

- Where required by State legislation and/or code of practice, develop and publish a 'Consultation Statement'. The Project Safety Team can offer further advice.
- Place on site noticeboards the details of Health, Safety and Environment Committee members.
- Develop a Health, Safety and Environment Committee Constitution, detailing the scope of the Health, Safety and Environment Committee in accordance with the functions specified in the Act and Regulation and the protocol that outlines the operating procedures for the committee.

Role of the Committee

Aims of Committee:

- To make recommendations regarding to safety.
- Assist in the development and maintenance of a safe working environment and safe systems of work.
- To attain and maintain a high level of safety responsiveness.
- To assist in the compliance with relevant OHS Legislation.
- To act as a proactive and positive consultative link on site safety issues.

Scope of Committee:

- Liaise and provide recommendations to the St Hilliers Representative regarding:
- All occupational health and safety matters relevant to the project.
- Monitoring and feedback on the St Hilliers Project Plan.
- Worksite design and safe systems of work.
- Emergency procedures, training and drills.
- Relevant OHS plant, equipment, services and information.
- Weekly Safety Inspections
- Reporting and/or recording safety incidents such as foreseeable incidents (major or minor), Near Miss ('Near Hits'), Injuries such as First Aid Injury (FAI), Medical Treatment Injury (MTI) and/or Lost Time Injury (LTI) or Damage.
- Safety Action Request

Training the Health, Safety and Environment Committee

Where required by legislation, each member of the Health, Safety and Environment Committee who has not previously done so will be offered relevant training as soon as practical after being appointed.

Conducting Meetings

St Hilliers Health and Safety Manager and the Health, Safety and Environment Committee will agree the regularity of meetings and in accordance with STH IMS it will be no less than once a week.

A roster is to be developed to manage attendance.

A meeting agenda is to be developed covering:

- incident and hazard review
- corrective actions
- trend analysis
- changes to legislation, standards or site rules
- changes to the workplace or work methodologies
- inspections and audits, including by regulatory agencies
- other issues as required

A record of attendees and of matters discussed will be maintained for all Safety Committee meetings. The chairperson of each meeting is responsible for ensuring such records are kept and distributed to members of the Committee, each work group, and posted on Project Notice Boards.

Distribution of minutes

The nominated person will take minutes of the meeting and distribute them to:

- all members of the Health, Safety and Environment Committee (both attendees and absentees)
- all noticeboards
- the client (where required by the contract).

8.1.4 Conduct Daily Pre-Start Meetings

DESCRIPTION

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

RESPONSIBILITIES

Site Manager (delegate), Contractor, Engineer

PROCESS

All work groups will hold a daily pre-start meeting at the workplace to discuss the planned scope of work, the recognised hazards and the risk controls required.

The meeting will be coordinated by a leading hand or supervisor, though 'ownership' of the meeting and input shall rest with the entire workgroup. Line management representatives will attend to support the process, monitor the effectiveness and elicit feedback on work-related issues.

Where appropriate, the content of the meeting and issues raised will be recorded. Issues that cannot be resolved at workgroup level shall be elevated through line management for resolution.

The process for conducting pre-start meetings will be as follows:

1. Before the daily pre-start meeting, the Supervisor and relevant Engineer will complete the information section of the Daily Pre-Start Meeting form for the work to be undertaken, which includes:
    - Brief description of the works
    - Applicable SWMS, and ITP details
    - Potential hazards including specific safety aspects relating to the day's task
    - Additional controls required to be put in place for the days work activities
    - any permits required e.g. excavation, confined space entry, hot works
    - operator competencies
    - environmental aspects relating to the day's task and specific environmental work methods / risk assessments
    - any new health and safety risks arising
    - any other items pertaining to the day's work
2. All attendees will sign the daily pre-start meeting form to acknowledge they have understood the day's activities and had all appropriate Health Safety and Environmental documentation, including Safe Work Method Statements communicated to them.
3. The Contractor representatives will then present the contents of the STH Pre-Start to their work force, the workers then sign off on the Pre-Start meeting, This form is returned to STH.
4. The pre-start meeting form will be made available to the persons in attendance. (If required)

8.2 Identify and Assess

8.2.1 Perform project risk analysis

DESCRIPTION

A risk analysis (HIRAC) is a formal process for assessing the likelihood of an event preventing an objective being met. Risk management philosophy is based on the principle of reducing risk to a level that is 'As Low As Reasonably Practicable'

RESPONSIBILITIES

Project Manager, Health and Safety Manager, Site Manager

PROCESS

Risk Analysis as Part of Project Start-Up

The project start-up Environmental risk analysis (HIRAC) has been undertaken as part of a workshop implemented by the Project Manager and including each Area Manager. This workshop generates the project risks and implementation of suitable controls.

- In accordance with workplace health and safety regulations a detailed risk analysis of the Safety & Health aspects of the project has been undertaken by the Health and Safety Manager (HIRAC).
- A separate detailed Environmental Risk Analysis has been undertaken taking into account both the aspects and impacts of environmental issues.

The Risk and Hazard Schedule details the implementation and maintenance of all Risks and Hazards throughout the project. This shall include working within the clients' premises or other occupied premises where health and safety hazards could affect the public or stake holders.

Risks and Hazards can generally be determined by comparison with and in consideration of:

- Design specifications;
- Industry best practice;
- Statutory requirements;
- Codes of practice;
- Recognised standards

Having identified the potential hazards the team is further responsible for identifying solutions to those hazards. The recognised hierarchy for developing risk management solutions and controls as will be followed by the project is as follows:

- Elimination - Amend design or methodology or process to eliminate risk; preferred
- Substitution - Replace material or process to minimise risk
- Isolation - Isolating the hazard or practice from people involved in the work
- Engineering controls - Amend design or methodology or process to reduce risk
- Administrative controls - Adjust time or conditions or risk exposure
- Personal protective equipment - Use appropriate PPE to protect against risk; Least desirable

Review Similar Projects

As projects are completed, files and documents that may be useful to other projects will be forwarded to ST Hilliers management for consideration and inclusion in the IMS

Each project will contact people within St Hilliers Contractors who have experienced and dealt with similar projects and/or risks in the past, in order to discuss the project and request assistance.

Local area knowledge will be utilised for a specific location or project.

The risk analysis is completed to manage actual or perceived risks identified across all disciplines. The analysis:

- Creates a register of risks identified for the project
- Requires the implementation of controls to manage those risks
- Assigns responsibility to the implementation of the controls
- Tracks the progress and effect of the controls put in place to manage the risks

8.2.2 Review Contractor Environmental Management Plan

DESCRIPTION

Describes the requirement for reviewing Environmental Management Plans to ensure they meet environmental requirements.

RESPONSIBILITIES

Contractor, Health & Safety Manager

PROCESS

Contractor work on a project will be performed under an Environmental Management Plan (EMP). The Contractor may provide copies of their own EMPs, which are assessed by the Health & Safety Manager (or delegate) against the requirements of St Hilliers EMP.

Alternatively, the Contractor may choose to adopt the St Hilliers EMP as the standard for environmental management while on site. This is a formal agreement to adopt the St Hilliers EMP as part of their subcontract status to undertake work on site.

8.2.3 Develop Safe Work Method Statements

DESCRIPTION

A SAFE Work Method Statement (SWMS) is a tool used to ensure work activities are completed in accordance with applicable legislation and defined requirements. A SWMS will be prepared for all activities associated with the project. The aspects of an activity detailed in an SWMS include health and safety, environmental and quality.

RESPONSIBILITIES

Safety officer, Site manager, Foreman, Project Engineers

PROCESS

The Safe Work Method Statement will be developed for all high risk activities in accordance with the following criteria:

- Identify the tasks or activities to be completed;
- List the hazards that may reasonably be expected to be associated with those task steps or activities; (hazard being a potential source of harm or energy);
- List the actions to be taken to remove, control or reduce exposure to the hazard;
- For each required action or control, identify the person responsible for completing that action; and
- The Supervisor/Foreman is primarily responsible to ensure there is sufficient documentation which includes a Safe Work Method Statement for all tasks, ensuring consultation from the work group concerned.

The Risk and Hazard Schedule manages the review and acceptance of subcontractors SWMS by St Hilliers to verify that the SWMS are, as a minimum, site specific, relevant to the scope of works and address 'potential hazards' identified in the St Hilliers project specific risk and hazard schedule.

Subcontractors will not be site inducted, or permitted to work, until the SWMS has been accepted as above and workers have been inducted into their SWMS. The status of the SWMS shall be tracked using the SSMP and SWMS Register

A Safe Work Method Statement shall only be considered valid for that one task and should be revised in the event of:

- A change of personnel undertaking the work;
- A change of tools, plant or equipment required to complete the work;
- A change to the working environment, i.e. in a confined space or at height;
- Where an additional hazard or risk has been identified; and
- Following an incident, injury or near miss that occurs.

SAFE Work Method Statements (SWMS) will be prepared as follows:

1. The person responsible for the task / process will identify who should produce the SWMS. For all project tasks carried out, the SWMS will be developed in consultation with the personnel who will be performing the task. The SWMS will be provided before the particular task or process begins.
2. The SWMS must address the requirements of the St Hilliers Construction Safety Standards
3. If the work is to be contracted, the Contractor will prepare the SWMS preferably using the format supplied by St Hilliers. The Contractor can use their own format if it includes all requirements as outlined by St Hilliers Health and safety team and meets all requirements of the SWMS Review Checklist.
4. All contributors will sign the relevant sheet of the SWMS.

5. All SWMS will be reviewed using the SAFE Work Method Statements Review Checklist
6. All SWMS will be scanned and logged on SWMS Register
7. The SWMS will be made available to all relevant personnel, where the work is being conducted ensuring they are aware of its requirements before starting work on the task. The Foreman and Contractor will have a site copy.
8. The SWMS must detail the relevant training required for all personnel involved in the work activity and evidence of that training is to be provided prior to works commencing.
9. St Hilliers site personnel will then direct the Contractor to carry out the task / process in accordance with the SWMS and monitor the work to ensure this occurs.

Guidance notes have also been developed as a knowledge resource to assist Contractors and staff to understand the minimum requirements for SWMS.

SWMS will be reviewed using Task Observations. They will additionally be reviewed and updated if:

- other risks are identified
- conditions or the task change
- an incident occurs related to the SWMS
- the SWMS is found to be unsatisfactory during the course of work.
- incorrect SWMS, ie out of date or version, site hard copies are found on site.

Where changes are made to the SWMS at the work face, changes will be hand written, signed and dated for transparency of the changes being communicated to the workers via their dated sign off sheet attached to the SWMS and scanned and added to the register.

The marked up SWMS will then be issued to the Safety Officer and / or Contractor as a new revision on SWMS register.

8.3 Implement Controls

8.3.1 Air Quality/ Dust Control

DESCRIPTION

Air quality can have major impacts on human and environmental wellbeing. Management principles are designed to reduce and control the effects of air pollution generated from site activities on adjacent receptors, travelling public, workers and flora and fauna.

RESPONSIBILITIES

Foreman, Health & Safety Manager

PROCESS

Determine Air Quality Impacts For Site or Project

The locations of sensitive receptors and the main causes of air pollution at these locations will be determined, taking note of:

- prevailing wind directions
- activities on site that will generate dust or emissions to air including, bulk excavations and haul routes.

Mitigation of Air Quality Impacts

- Burning of any materials onsite will be prohibited.
- Allowances will be made for wind direction and high wind warnings during working hours.
- Any unreasonable release (as defined in EnviroLaw) of odours, dust and smoke to the atmosphere will not be allowed.
- Management strategies for controlling dust that will be employed include:
    1. the use of non potable water for dust suppression and soil binders
    2. signage to vehicle drivers and plant/equipment
    3. installation of dust barriers (eg vegetation, walls).
    4. watering of work areas will be supplemented with wet brooming and the retrieval of deposited dirt from sealed access points and affected roads with street sweepers etc.
    5. All dust-generating activities will be inspected daily.

Monitoring Air Quality

- Real time monitoring equipment will be used to facilitate onsite assessments as required.
- Onsite monitoring will be established as soon as practical after receiving a complaint and continued until normal conditions prevail.
- The details of any monitoring will be included in monthly reports.

Corrective Action

Where significant nuisance to sensitive receptors and exceeding of performance criteria occurs, the following actions will be taken:

- Cease work at the location or modify to correct the problem.
- Implement daily monitoring of the performance criteria until the levels are in compliance.
- Stand down any machinery found with excessive (prolonged and visible) emission levels, until appropriately repaired or newer equipment supplied with more effective mufflers/emission systems.
- Consider remedial measures such as dust suppressants, wetting agents, water for dust suppression, or installation of curtains to reduce or eliminate the problem.

The Foreman will consult the Health & Safety Manager should the need for alternative measures arise.

Discharging Ozone Depleting Substances and Synthetic Greenhouse Gases

Products containing an Ozone Depleting Substance (ODS) or Synthetic Greenhouse Gas (SGG) will only be used for their designated purpose.

The use of a Halon fire extinguisher during a training exercise will not be permitted unless the purpose of the discharge is to:

- test the design of a fire extinguishing system or fire extinguisher
- calibrate equipment used to detect extinguishing agent leaks.

A permit allowing the discharge must be granted by the Fire Protection Industry (ODS & SGG) Board.

Workshop Operations CFCs

Coolants and refrigerants are used in the maintenance of air-conditioning systems in workshops. State and Territory requirements to operate a workshop where CFCs are used will be checked, as registration and licensing may be required.

For example, Queensland requires a Gas Work Licence or Gas Work Authorisation, issued by the Chief Inspector, Petroleum and Gas, to install, remove or repair, services, tests or certify type A or type B devices gas system.

Type A gas appliances include appliances used to produce heat, lights or power, or for refrigeration where gas is the fuel.

8.3.2 Asbestos

DESCRIPTION

Asbestos is found as sprayed insulating coating on steelwork and concrete, lagging on pipes and boilers, insulation board in walls and on doors and ceilings, asbestos cement for roof and wall coverings, pipes and tanks, decorative plasters, asbestiform mineralogy, vinyl

RESPONSIBILITIES

Asbestos Removalist, Team Leader, Asbestos Permit Issuer, Asbestos Permit Holder

PROCESS

Asbestos Management Plan

Legislative compliance requires that an Asbestos Management Plan will be developed for a project or workplace where the presence or risk of exposure to asbestos has been identified.

Asbestos is found in a large number of historical buildings or buildings built before 1980, and will also be found in landfill from early disposal methods under building foundations.

If asbestos products are known to be in the vicinity of operations, the supervisor and workforce will be notified to ensure correct handling techniques are included in the documentation, including SAFE Work Method Statement (SWMS) for the task.

If asbestos is known to be present within a building, its type and location will be shown in a Building Asbestos Register or Hazardous Materials audit report, which the architect (or appropriate person) is to arrange as part of his building audit prior to issuing tender documents.

Potential Exposure to Hazardous Substances

- Work shall cease immediately, the area evacuated and closed, and a review of monitoring activities and nominated control measures shall be undertaken when:
- a failure of nominated control measures is suspected;
- accepted exposure limits are exceeded; or
- when individuals are unexpectedly exposed to hazardous substances that weren't previously known to be present on-site,

An investigation shall be conducted in accordance with Incident and Near Miss Management in consultation with HSE Managers and/or qualified consultants to determine corrective/preventive actions.

Medical Treatment and Health Surveillance Assessment

Individual's potentially exposed to hazards shall be directed to seek medical treatment at a registered medical practitioner to assess exposure and any requirement for ongoing health surveillance.

An Injury Notification Report shall be completed for individuals potentially exposed to hazardous substances.

When medical practitioners advise that health surveillance is required, a review of monitoring activities and nominated control measures, including any recommendations by the registered medical practitioner, shall be undertaken in consultation with HSE Managers and/or qualified consultants to determine corrective/preventive actions.

Access to Areas Affected by Hazardous Substances

Access to areas closed due to potential hazardous substance exposure shall not be permitted until certification is received from a suitably qualified person, and the suitability of monitoring requirements and nominated control measures have been assessed, recorded and improved as necessary.

Unexpected Finds of Asbestos or Contaminated Soil

When unexpected finds of asbestos or contaminated soil are made, St Hilliers site management shall cease all work in the area and set up an exclusion zone of 10 metres, the details of which are to be consulted to all employees. Work in adjacent areas may not proceed unless the asbestos is deemed to be not friable by a hygienist.

Unexpected finds and the potential requirements for monitoring and control measures and health surveillance shall be assessed in accordance with Hazardous Substances Monitoring, Control and Health Surveillance.

If St Hilliers don't have a contracted hygienist, David Lane Associates is the preferred hygienist and shall be engaged in consultation with State HSE Manager. The hygienist shall assist with the development of a management plan and control procedures for the removal of the asbestos/contamination. The hygienist shall determine if the asbestos is friable or bonded. This will determine if an AS1 (friable) or AS2 (bonded) Asbestos licensed contractor can conduct the works.

If a find of bonded asbestos is greater than 10m², or if a find of friable asbestos of any amount, an Asbestos licensed contractor shall be engaged to conduct the works. An Incident Investigation shall record details and actions of the unexpected finds incident.

Waste Testing and Tracking

Any potential asbestos material which will be sent for disposal will be tested to determine type and concentration of asbestos. All tests will be done by a NATA accredited laboratory.

Any asbestos material which needs to be disposed of will be sent to a licensed landfill facility. Depending on the amount of waste and State, the material will be tracked using waste tracking records.

Contractors who are handling and disposing of waste will be suitably licensed, or will at least be aware of health, safety and environmental requirements for handling and disposal.

All test records and waste disposal records for asbestos will be kept for at least thirty years.

Asbestos Permit

Permits for the removal and disposal of asbestos will be issued according to State-based requirements. The following information describes the basic requirements.

Only certified persons will undertake the removal and disposal of asbestos. Removal and disposal of asbestos will be subcontracted to a licensed Asbestos Removalist, who will prepare the required Health and Safety plans and inductions for the work.

Personnel engaged in the removal of asbestos will not be issued with an access permit unless they are members of a company or firm that holds a current asbestos removal licence as required under legislation.

The Access Permit formally transfers the responsibility for compliance with Health and safety regulations to the signatories of the permit.

The process for issue of a permit will be as follows:

1. Complete relevant documentation including a SAFE Work Method Statement (SWMS) and review it with the crew performing the work.
2. Assess the conditions of the work environment for which the permit is being issued.
3. Complete the permit, including any precautions or instructions necessary.

4. The authorised person (i.e. the Safety Officer or, in their absence, the Site Manager or Project manager, referred to as the Asbestos Permit Issuer) issues the permit to the person nominated as the 'Asbestos Permit Holder', first ensuring that all safety requirements have been met. When a project involves a team of more than one employee, the permit is issued to the Team Leader. This person will be responsible to ensure that:
    - team members are individually aware of their responsibilities
    - each employee's signature appears on the appropriate section of the permit.
5. Display the issued permit in a prominent position at the entrance to the work area.
6. Each worker signs on the permit before commencing the work, and signs off once they have completed the work.
7. When work is completed, or at expiry of the permit (whichever occurs first), sign and return the permit to the nominated officer, who is to cancel it after ensuring that a safe situation exists, and maintain a register of all access permits which have been issued and cancelled.

8.3.3 Contaminated Land

DESCRIPTION

Describes the process for identifying and managing contaminated land on the project site. Sources of contamination may include debris such as unexploded ordinances, hazardous materials, storage and other land use practices.

RESPONSIBILITIES

Contaminated Land Consultant, Regional Environmental Officer, Site Manager, Health and Safety Manager

PROCESS

Identifying Contaminated Land

Types of land use where contamination may be present include service stations, cattle dips, tanneries, wood treatment sites, landfills and refuse tips.

Land may also be contaminated by hazardous materials (as potentially contaminating processes), e.g. bonding foams used in bridge construction, cement in batching plant applications, fuels such as diesel and associated hydrocarbons, pesticides and herbicides, cleaning agents (hydrochloric acids), curing compounds and motor vehicle oils.

Unidentified Contamination

If any previously undetected contamination is discovered during construction, cease work, isolate the area and report such findings to the project manager and or the health and Safety manager or delegate. The EPA and other relevant authorities shall be advised

In the event that contaminated areas are discovered, St Hilliers shall appropriately mark such areas to eliminate potential for harm and communicate these areas and any specific steps to be taken at the site inductions, via toolbox talks and notified at Daily Pre Starts.

Determine Land Impacts

Contamination may be indicated by noticeable staining or discolouration, unnatural odours, metal debris in fill and ash/charcoal fill.

Mitigation of Contaminated Land Impacts

In addition to managing existing contamination, the project will take measures to prevent further contamination.

- Site inspections will be undertaken to determine the extent of contaminated land, and soil tested to determine contaminants.
- The volume of material for disposal will be minimised by defining contaminated and clean areas.
- Machinery and equipment will be thoroughly cleaned prior to its arrival on site
- Site investigations will be undertaken prior to the movement of soil. Where required, the project will seek advice from the Contaminated Land Consultant.
- The EPA supports the national target of 50% reduction in waste going to landfill and promotes onsite remediation as the preferred option for treating contaminated soils. However St Hilliers will dispose of contaminated soils to an approved and/ or licensed landfill.
- Excavation of any material in contaminated areas will be done in accordance with directions from the EPA or experienced personnel. This type of material will be removed to a nominated site using a waste tracking system with the EPA.

- Identified contaminated soils will be excavated and stored separately to 'clean' soils and volumes will not be altered by 'diluting' the impacted soils with clean materials.
- Treatment of spills will be managed as per the process 'Report environmental incidents'.
- During the construction of the POL, UST and hydrocarbon related infrastructure, including fuel lines and breathers a standard that complies with relevant state guidelines is to be adhered to.

Contaminated Land Licenses, Permits and Approvals

- Approvals are required for the removal and disposal of contaminated soils from site
- Disposal permits enable appropriate and legal disposal and tracking of contaminated soil or materials. The EPA issues disposal permits for specified volumes of soil and only approves the removal of contaminated soil to a site listed on the EMR.
- The EPA may issue a notice to investigate if it reasonably believes that a hazardous substance contaminating the land may cause serious or material environmental harm.
- Comply with a notice to prepare or commission a site management plan for a contaminated site unless a waiver received from the EPA. A notice may be issued if a site investigation was conducted and contamination managed by limiting the spread and impacts.
- Comply with a notice to remediate contaminated land including a remediation and validation report of all remediated sites.

8.3.4 Cultural Heritage

DESCRIPTION

Management of cultural heritage (CH) is a statutory requirement. Cultural heritage is defined as areas, objects and places displaying archaeological or historic significance. This includes objects situated on or under the surface of the land and remains of ships or other objects in the territorial waters of the State. In addition, the EPBC Act 1999 lists Commonwealth interests as issues in Environmental and Cultural Heritage management.

RESPONSIBILITIES

Supervisor, Health & Safety Manager, Archaeologist

PROCESS

Mitigation of Cultural Heritage Impact

- Liaise with the Stakeholders to ensure adequate knowledge is acquired of any culturally significant areas or objects at the site or project. Generally these sites form part of an EIS/EIA process, which can be the basis for ongoing consultations.
- If the site or location is deemed to contain any element of non-indigenous heritage, undertake an onsite survey to assess the impacts on such a site.
- Ensure protocols exist for communication of newly discovered sites and the process for the project to proceed to afford these areas adequate protection.
- Determine the management protocols for a cultural heritage site by agreement.
- Museums may be interested or involved in reports or archaeological excavations for indigenous and heritage items.

Duty of Care

Duty of care exists under various State legislation for non-indigenous heritage and requires prevention of damage unless instructed otherwise to proceed with construction.

Discovery of Heritage Items

When any heritage item is discovered during operations or construction, take the following steps:

1. Work will cease and care taken to minimise further disturbance.
2. The Supervisor will be notified immediately, who will then report the find to the Health & Safety Manager.
3. The area will not be disturbed until an assessment is completed, an inspection undertaken and direction to proceed provided.
4. A known Archaeologist will be engaged to assess the site.
5. The exact location of the discovery will be photographed.
6. The site will be protected and managed to restrict access, prevent disturbance of materials or the site, erect barriers and proceed with protective measures.
7. The project may additionally liaise with the local heritage agency to determine what other course of action is required.

Monitoring Indigenous Heritage

The project will engage specialists to undertake monitoring of indigenous heritage to record items being disturbed. St Hilliers will also work closely with Traditional Owners if mitigation of an area is discovered. Reports will be provided to the State heritage agency and Register of National Estate prior to destruction or disturbance.

Monitoring equipment will include a digital camera, GPS unit, documents recording photos and locations, maps of the site, tape measures, callipers and reference books.

The above steps as outlined in Discovery of heritage items will be adhered to should an indigenous discovery be made. Progress associated with Cultural Heritage issues will be reported in the project Monthly Environmental Report.

8.3.5 Erosion and Sediment

DESCRIPTION

The effects of poor management of erosion control lead to sediment that can be highly visible and environmentally damaging. A number of statutory obligations require a high standard of soil and sediment management to reduce the effects of storm water run-off and unauthorised discharges from the project or site.

RESPONSIBILITIES

Health & Safety Manager, Site Manager, Project Construction Team

PROCESS

Responsibility for Erosion and Sediment Controls

The EPA has introduced laws to control the impacts of erosion and sediment, Local councils are very diligent in following up public complaints regarding erosion and soil sediments leaving development sites.

In the event of an uncontrollable discharge of sediment from site, a fine may be issued by the relevant regulatory authority. For the WBTA project the Health & Safety Manager will liaise with the Site Manager to determine erosion and sediment control requirements.

The Project Construction Team is responsible for the implementation and monitoring of these controls through regularly auditing for site stabilisation and erosion; especially after rain.

Erosion and Sediment Controls

The principles for erosion control are to divert clean water around disturbed project areas, minimise the velocity of such water and cover bare soils as quickly as possible. Controls may include those outlined in 01 – C250 of the tender drawings. Controls may also include design and installation of the following:

- Sediment traps
- Drainage systems with discharge and holding ponds with required discharge rates
- Maintain a clear hardstand area to prevent and or remove spoil from project vehicles as required.
- Installation of interceptor drains and sedimentation basins on down gradients
- Ongoing management and regular removal of surficial metal fragments.

Additional fundamental controls may include the installation of filter socks and the retention of water in sediment bags.

Stockpiles are to be adequately maintained to avoid release to storm water and surrounding waterways. Vegetation and soil stockpiles should be kept separate where possible to maximise the use of vegetation for sediment erosion control. Mixing of soils and spoil from different areas will not be encouraged unless it is free of contaminates and or approved by the REO. The method of disposal of excess soil and the location of stockpiles must be approved by the REO and included in the ECC.

The removal of trees and the clearing of site will be done only when adequately maintained sediment erosion controls are in place.

Determine Erosion and Sediment Control Impacts for Site Or Project

The highest risks to the GBTA project is the tracking of mud/material onto local roads and the run off of sediment laden water from the site into waterways. As such the following procedures shall be followed:

- Erosion and sediment control structures will be installed early in the project, and adequate labour and time allowed to maintain them, in particular following rain.

- As areas are completed, controls will remain installed until the area is stabilised and the project is completed.
- The project will observe general prohibitions that exist against pollution and sediment releases into roads, drains, gutters and waterways.

Installing and Maintaining Controls

- Groundwater will be pumped from de-watering wells through settlement tanks.
- Materials, stockpiles, topsoils and rehabilitation will be appropriately managed.
- Water will be diverted around construction. Clean and dirty areas will be separated so that only runoff that falls on disturbed areas needs to be managed.
- Silt socks will be employed, where appropriate, as a method of controlling runoff on hard surfaces where silt fences cannot be used (finished concrete drains, stormwater inlets).
- Water quality parameters / limits will be monitored, and storm water areas identified in the Water Quality processes within the Project Management System.
- Hay or straw bales, preferably, will not be used as they are vectors for weeds and have high maintenance requirements.
- Inspection of erosion and sediment control structures will be undertaken regularly and after rain events, to identify maintenance requirements.
- Material will not be stored where environmental harm could result from pollution of water.

Hardstand and Lay Down Areas

The following controls will be considered when managing hardstand and lay down areas:

- Hardstand and Lay-down areas will be designed and planned to provide access into and around the areas for all site personnel. A process of access will be established for all site personnel.
- Roads will not be washed down, as the sediment enters drainage lines and sumps. A street sweeper will be used where necessary, but prevention is the preferred approach and is more cost effective than remedial works. It is illegal to wash down roads unless the sediment is prevented from entering stormwater drains. Aggregate or sand filled filter socks will be used to protect inlets.

Protective measures will be taken to prevent soil, mud, pollutants, weed seeds, fuels and oils leaving the site on trucks and truck wheels. For example, wash-down bay, wheel wash sump or spray unit and Shaker Pits when exiting site.

Figure 2. Sample Shaker Pit

Sediment and Erosion Control Licenses, Permits and Approvals

The project will refer to specific State requirements relating to licences, permits and approvals. The following are general guidelines for this project:

- There is a Common Law requirement not to impact upon neighbour's land.
- Nuisance laws relate to creating a general nuisance from sediment or mud leaving a site.
- Conditions exist for compliance requirements of any licence or permits issued to control water run-off leaving a site.

The "Blue Book" (Managing Urban Stormwater: Soils and Construction – Volume 1, 4th Edition reprinted July 2010) shall be used as a reference point for soil and water management.

8.3.6 Flora and Fauna

DESCRIPTION

All Australian native animals are protected under Law, and the Nature Conservation Acts lists vulnerable species for which a permit is required if disturbing or relocating them. Protected flora species are listed at Federal and State level and include protected ecosystems and bioregion areas where associations of plant species are under threat by development during clearing.

RESPONSIBILITIES

Supervisor, Site Manager, Project Manager, Engineer, Health and Safety Manager, Foreman

PROCESS

The Health & Safety Manager will liaise with the Site Manager to determine fauna and flora requirements. Necessary controls will then be implemented by the Project Construction Team.

Generally the management of fauna and flora will be undertaken as follows

Identifying Endangered Species and Sensitive Areas

- Sightings of rare or endangered flora or fauna species on site will be recorded and photographs taken if possible. Appropriate information will be appended to photographs to assist in identifying fauna and locations of finds; as a minimum requirement, this will include the date, time and place of find.
- If endangered species of fauna or flora are encountered, a management strategy for their relocation will be implemented and the area cordoned off to protect them until removed and/or relocated.
- The project will check the requirements to refer any actions that may impact on rare or threatened species.
- Areas of specific sensitivity will be identified and illustrated on a site map. This information will be conveyed to the workforce during site inductions, toolbox talks and pre-start meetings.

Contact with Harmful Species

In the unlikely event that contact is made with harmful species, ie snakes and spiders, during construction activity it is the responsibility of the person who discovers the animal to not approach it and report the findings to the area supervisor; who can get in contact with the necessary agency to relocate the animal so as no harm will come to the animal or site staff.

In the event that through no fault of the construction worker they are bitten and or injured by the animal the necessary steps for medical attention need to be completed.

First aid treatment of snakes and spider bites will be administered by a trained first aider until medical help arrives. Section *Manage Personal Damage* of the OH & S plan describes the process for managing and recording personal damage on site.

Fauna and Flora Licenses, Permits and Approvals

- Disturbing, removing or clearing vegetation or wildlife will require a permit; the project will check and observe State requirements. STH will also obtain and honour an Environmental Clearance Certificate issued by the Commonwealth relating to the works or the activities and any conditions incorporated in that certificate.
- Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), actions that have, or may have a significant impact on a matter of national environmental significance require approval from the Commonwealth Environment Minister.

- In order to reduce impacts on registered species, the EPBC Act may require submission of an EPBC referral for an activity involving a 'Controlled Action'. The project may additionally need to submit an assessment of the impact, prior to approvals granted.
- If required, a species management plan will be developed for specifically mentioned threatened species of flora and fauna (as per Environment Protection and Biodiversity Conservation (EPBC) Act 1999).
- The project will check and observe State licence requirements for wildlife handlers.
- The Catchment Management Authority's or Land Agency's categorisation of regional ecosystems and their classification listing for the area will be confirmed.
- However unlikely; if required by the local State Act, a permit will be obtained prior to disturbing marine waters, tidal waters and associated habitats containing vegetation, especially mangrove habitat.
- Conservation regulations protect the unauthorised disturbance of nests, trees and burrows. Strict conditions will apply when clearing habitat trees and vegetation to minimise disturbance, under relevant State laws.

Construction areas will be clearly demarcated on site in line with the approved Site Management plan, to limit damage to adjacent vegetation and/ or fauna habits. Clearly marked vegetation is to be retained before clearing and trimming.

8.3.7 Hazardous substances and dangerous goods

DESCRIPTION

A hazardous material is one that poses a hazard to human health or the environment when improperly handled, stored or disposed of. The hazard may arise from acute or chronic toxicity or carcinogenicity of the substance or its corrosive or flammable nature.

RESPONSIBILITIES

Project Safety Team

PROCESS

Identify Hazardous Materials

Hazardous materials that may be encountered during construction work are broadly identified and categorised as solid, liquid or gaseous:

- Solid hazardous materials are normally associated with activities involving hazardous spoil, construction materials and explosives.
- Liquid hazardous materials comprise flammable and combustible liquids and toxic chemicals including pesticides, insecticides and liquefied gases, acids, solvents, lime and degreasing agents.
- Gaseous materials which may be hazardous are flammable gases, toxic gases and gaseous emissions from construction works.

Details related to a substance's physical properties, flammability, toxicity, special precautions, transport and storage are detailed in an Australian Material Safety Data Sheet (MSDS).

Managing Hazardous Materials

- A current Australian MSDS will be made available for any hazardous substance or dangerous good stored and handled at the premises:
    - Copies of the MSDS will be available at the work site and readily accessible to all persons working on the premises and to the emergency services authority.
    - The MSDS sheet shall be provided by the supplier of the substance. If it is not, it will be obtained from a reliable source by the relevant person.
    - The project will check the MSDS is the most current version, less than 5 years old.
- All licenses, permits and approvals will be retained on site as required by the statutory obligations, for each type of hazardous material.
- Controls detailed in the MSDS will be recorded in the Health, Safety and Environmental Work Method Statement (SHEWMS) relating to the activity that involves the use of the substance.
- A Hazardous Substance Register will be maintained for all hazardous substances used on the project (usually generated by the Project Safety Team):
    - A hard file copy will be kept at the substance storage area and a copy kept with all first aid equipment and facilities.
    - The Hazardous Substances Register will be reviewed monthly to ensure all MSDS are current.
    - Quantities of materials will be tracked when they are decanted and taken to another area for use. The containers will be labelled and an MSDS made available at the location.
- Prior to bringing any hazardous material on to site, the licensing requirements to store the material will be determined from the:

- Australian Standard for storage and handling of Hazardous Substances(AS1940-2004)
- Australian Dangerous Goods Code
- Material Safety Data Sheets (MSDS).

- Significant quantities of chemicals may trigger the requirements for permits under relevant State legislation.
- A risk assessment will be performed on the use and disposal of the material, and the appropriate controls implemented.
- Quantities of hazardous substances stored on site will be kept to a minimum.

Transporting Dangerous Goods

All materials moving to and from site will be tracked using dockets and receipts. Only licensed transporters will be used to move and dispose of these materials.

When transferring dangerous goods measures will be taken to control spills, overflows and leaks, minimise static electricity and control vapour generation. If significant quantities are being transported, local authorities will be notified in case of an emergency situation or spill during transit.

Chemical Hazard Communication

Communication on any substances introduced at the project site is established on the basis of an obligation to inform and consult with employees and others in regard to the hazard and the individual's 'right to know'.

- Suppliers and contractors will be informed that substances shall not be introduced to the project site unless a MSDS has been made available for review, PRIOR to delivery to site.
- Ad hoc suppliers and local contractors bringing items such as lubricants and fuels to site shall also supply MSDS information at their point of arrival on site.
- Such materials that arrive at the project site without an approved MSDS having been made available for assessment in advance will be held in 'quarantine' in a suitable storage/lay down area until that information is available and the risk from exposure has been assessed.
- Hazardous substances will be handled, stored and transported in accordance with state statutory requirements and the NOSHC Guidance Notes and Code of Practice.
- Any inventory/register of all hazardous materials will be established and maintained in each area in order to assist with materials management, environmental management and emergency planning. A copy of the Hazardous Substances Register will be maintained at each storage place for use by emergency services. The register will be update after a significant change in volume or risk category of substance held on that particular area or location.
- The requirements for the storage, handling and use of substances will be subject to risk assessment prior to their being made available for site use.
- Personnel working with substances will be provided with information and training concerning those materials where appropriate. The MSDS must be specific and relevant and is to be used to develop the Safe Work Method Statement.
- Manufacturers or distributors warning labels must be attached to the substance containers and maintained until the containers are safely disposed of in accordance with the directions of the supplier or manufacture. All other substance containers used will also be labelled with the same or comparable information.

Storing Hazardous Substances

- All containers of hazardous chemicals including oil and fuel, will be stored in a bunded area so the capacity of the spillage containment compound is adequate.
- Where possible, the bunded area will be covered to prevent rain and water filling the area, resulting in additional treatment requirements during disposal and management of the storage areas.
- The storage area will be clearly signposted.
- Where the storage area is part of a building, ventilation will be provided at the floor and ceiling levels, of an adequate size to allow circulation of air. AS1940 has strict conditions in relation to firewalls and containment when storage is within the same building as persons and other general goods.
- Storage areas will be kept locked at all times and secured against unauthorised access and potential theft.
- Where different substances are stored in the same room, the MSDS will be consulted prior to storage to verify compatibility of substances. A bunded floor liner may also be required to prevent seepage and spillage. Non-compatible dangerous goods will be stored separately so that loss of containment will not cause a dangerous situation.
- All storage tanks containing hazardous substances will have the contents and volume clearly identified, be numbered if in a cluster, and have the appropriate Hazchem signs displayed to legislative requirements and AS 1319.
- Storage areas will be protected against damage from impact with vehicles, mobile plant etc.
- In each area of the premises where dangerous goods are stored or handled, provision will be made for spill containment that will:
    - contain the spill of dangerous goods
    - enable spilled or leaked dangerous goods and any solid or liquid effluent arising from the incident to be cleaned up and disposed of or otherwise treated.
    - Spill kits must be on standby for this action and maintained
- Appropriate work force training will be provided for spill management and the use of spill response kits and supplies.
- Incident reporting procedures will be followed in the event of a spill.
- Where sources of ionising radiation have been identified, they will be handled in accordance with the requirements of the relevant State radiation safety act and radiation safety regulations.

Disposing of Hazardous Waste

All unused or excess chemicals and materials will be removed and disposed of in accordance with the MSDS and waste disposal guidelines. NO hazardous material or contaminated soil is to be stockpiled on WBTA land without approval in the ECC and REO.

Disposal of containers as well as any left over contents will be tracked via the waste disposal processes outlined in the process for Waste management.

8.3.8 Noise

DESCRIPTION

Describes the measures to be taken to strictly control the impacts of noise on the project, in accordance with legislative health, safety and environmental requirements.

RESPONSIBILITIES

Project Construction Team, Project Manager, Health & Safety Manager, Site Manager

PROCESS

Noise will be managed on projects according to the standard Occupational Noise Management, AS 1209. The environmental and safety aspects of noise will be managed separately.

Managing Environmental Impacts of Noise

Industrial noise levels will be kept to levels consistent with uniform National Standards for occupational noise, such levels are not to adversely affect any other personnel or the public.

The project will manage the environmental impacts of noise as follows:

- The main causes of noise on site will be identified. This will take into consideration all types of site machinery and equipment and, where practical, locate them so as to minimise noise and avoid grouping too many machines together as this increases noise levels.
- Noise limits will be imposed in accordance with relevant local and state authority regulations for both construction staff and residents/public accordingly.
- Ongoing loggings and spot check monitoring will be performed where necessary to ensure limits are not being exceeded.
- Monitoring of noise issues will be performed within 48 hours of receiving a complaint, to verify if they are related to the project works.
- The following mitigation measures will be considered: temporary noise barriers, enclosures for machinery, screening (e.g. natural vegetation cover, man-made bunds in cuttings) programming no works during stakeholder/community peak periods, early installation of permanent barriers.
- If possible, work activities will be spread over different times so that impacts will not occur at the same time every day. A break in activities will be allowed for wherever possible.
- The details of noise measurements and the results of any corrective actions or complaints received will be included in monthly reports.
- Monitoring equipment will be kept correctly calibrated.
- To reduce noise from plant, vehicles and equipment, the project will:
    - investigate whether the noise can be eliminated by using a different method or equipment / machine, e.g. smaller machine
    - keep equipment well maintained
    - monitor equipment sound power levels
    - limit the revving of engines on mobile or stationary machines and shut down any equipment not in use
    - limit the use of horns, bells, hooters or other audible signals on mobile equipment to the maximum practical extent
    - consider ‘white noise’ reverse alarms

- locate fixed plant and equipment (including material stockpiles and vehicle parking areas) as far as practical from residences
- Use two-ways to communicate and try circular or loop loading methods to avoid reversing.

Managing Safety Impacts of Noise

The project will manage the safety impacts of noise as follows:

- The Project Manager will be responsible for ensuring that, where required, a noise survey is conducted using appropriate equipment to determine which activities pose a risk to hearing and which areas of the project are designated hearing protection areas. These surveys will also ensure allowable noise levels are not being exceeded for residents/general public.
- Designated hearing protection areas and equipment will be identified with signs or stickers. All personnel will be provided with instruction in the use and purpose of the relevant personal protective equipment.
- Supplementary surveys will be undertaken if significant alterations to noise emission are identified due to additional machinery or changing work processes.
- The general rule will be observed that hearing protection must be used whenever noise levels interfere with normal speech when individuals are standing at a distance of one metre from each other.
- Noise surveys and the relevant reports will be coordinated by the Health & Safety Manager in liaison with the Site Manager. Assistance in interpreting these reports may be provided by a consultant.
- Measures implemented to control noise will be referenced in the relevant Safe Work Method Statement for the project.

Education

The project will hold toolbox talks on the topic of the effects of noise induced hearing loss and environmental requirements relating to noise.

8.3.9 Control Inspection, Measuring and Testing Equipment

DESCRIPTION

This process describes the control measures to be taken for all inspection, measuring and testing equipment (IMTE) used to verify compliance in accordance with the drawings, specification and ensuring compliance with statutory requirements.

RESPONSIBILITIES

Senior Project Engineer, Project Engineer, Building Cadet

PROCESS

This process will apply to items including (but not limited to):

- all survey equipment, including pipe levels
- air quality monitors used for work in confined spaces
- monitors used to measure water quality, noise and vibration
- all equipment used in construction materials testing
- all measuring equipment used for batching materials
- all equipment used in electrical materials and performance testing
- all measurement 'reference standards' used to self-calibrate IMTE
- any measuring / testing equipment used in plant maintenance, e.g. torque wrench, pressure gauge.

Responsibility for IMTE

The Senior Project Engineer or nominee will be responsible for ensuring that IMTE used on the project is suitable for the intended purposes, calibrated and maintained.

The Engineer or nominee will be responsible for maintaining a register and records of IMTE status.

Employees or contractors bringing IMTE onto the project will be responsible for ensuring the equipment has been maintained and calibrated. They will also be required to provide regular evidence of maintenance and calibration as required throughout the duration of the project.

Inspection on Receipt Of Equipment

All equipment received will be inspected prior to use on site, to verify that:

- the IMTE is suitable for the intended purpose
- (for new equipment) accompanying documentation confirms that the equipment is currently calibrated
- (for existing equipment) records confirm calibration, and the calibration status is clearly indicated on the equipment
- (for all equipment) the equipment container has no apparent damage sustained in transit. If damaged, arrange for inspection, repair, recalibration or replacement
- computer hardware and software used in conjunction with IMTE has a user licence and contains no viruses or corruption.

Upon receipt, all equipment will be entered into the Equipment List. Mandatory information required for entry includes instrument type, manufacturer, model no., serial/ID no., owner/user of equipment and the calibration interval. Other information fields are available such as purchase date, range and rated accuracy.

Equipment shall be regularly inspected by a responsible person to check for obvious signs of damage or other indicators that the equipment calibration may be called into question (see section Non-conforming equipment).

When IMTE is no longer in use, it will be returned to the source and the Equipment List updated with a comment to reflect this.

Calibration

Calibrations will be undertaken in accordance with the relevant standards, which are traceable to international or national measurement standards, or alternatively, by documented standards / processes undertaken by suitably qualified persons. Calibration frequency will be based on:

- historical data
- anticipated usage
- wear and tear
- storage time and environment
- manufacturer's requirements.

Indication of Calibration Status

Wherever practical, the calibration status will be indicated on the equipment for immediate reference by the operators and others. Such indications will be by marking, adhesive sticker, tagging or stamping as is most suitable for the nature of the equipment. In the case of small items, the indication may be attached to the inside of the equipment storage container.

Contractors and Suppliers IMTE

For contractors' and suppliers' IMTE, the minimum requirement will be a review by St Hilliers of the contractors' or suppliers' calibration data to verify that equipment has been calibrated.

For NATA-accredited laboratories, the NATA certificate detailing the appropriate inspection, measuring and testing will be sufficient to meet calibration requirements. The NATA Certificate will be reviewed to ensure that the laboratory is accredited for the test methods specified in the contract and/or as per Australian Standard.

Overseas suppliers will be requested, through contract documentation, to provide evidence of calibration of their IMTE and the standards to which it is calibrated. Regardless of owner, all equipment shall be maintained on the IMTE register.

Non-Conforming Equipment

Any equipment known or reasonably suspected of being out of calibration and which is not repaired and/or recalibrated immediately will be tagged and placed in segregated storage. The tag will be prominent, with the words 'NOT FOR USE - OUT OF CALIBRATION' or similar. Non-conforming equipment will not be brought back into service prior to recalibration.

Where non-conforming equipment is identified, rechecking of measurements (depending on criticality) will be undertaken using calibrated equipment (of known status) to verify / confirm conformance to specified requirements. Identified non-conformances will be managed as per the process Raise Non-Conformance Reports.

If IMTE is damaged, it will be removed from use pending repair, replacement or recalibration. The IMTE will be labelled stating 'Damaged, Do not use' or similar.

8.3.10 Vibration

DESCRIPTION

Exposure to vibration is normally classified as either whole body (e.g. driving a truck) or segmented (e.g. hand held power tools such as jackhammers). Segmented vibration (hand, fingers) can cause carpal tunnel syndrome, nerve and blood vessel degeneration, loss of grip strength, damage to joints and muscles in wrists and elbows and pain and cold sensations between attacks of white fingers. With continued exposure to vibration, symptoms become progressively severe and will reach a stage where they become irreversible. Vibration is measured in acceleration rate.

RESPONSIBILITIES

Safety officer, Senior Project Team,

PROCESS

Protecting Workers

To protect workers from the health effects of vibration, the project will:

- Select appropriate, up-to-date tools. (Newer tools are developed with a lower vibration output)
- keep tools in good, serviceable condition and correctly calibrated
- where possible, substitute a machine driven device for hand held tools
- rotate workers to minimise vibration effects
- tag equipment with exposure limits
- observe good work practices (e.g. anti-vibration tools and gloves, rotation of work)
- implement educational programmes

Vibration hazards will be identified through continual monitoring and control methods instigated through contractors documentation including SWMS.

Managing Environmental Impacts

Vibration management varies depending on the construction activities undertaken. The Safety officer in conjunction with other relevant members of the Senior Project Team will review SAFE Work Method statements to ensure activities involving vibration are correctly assessed and managed.

Measuring Zones of Influence

Zones of influence will be measured according to the following process:

1. Activities and equipment that are sources of vibration will be identified.
2. Impact distances will be measured. Zones of Influence distances are determined by multiplying the safe working distances by predetermined factors (normally 3 times the safe working distance). However, this will be confirmed locally. Examples of safe working distance:
    - Pile Driving is 60 metres multiplied by three = 180 metres
    - Heavy Rolling is 20 metres x 3 = 60 metres
    - Light Rolling is 10 Metres x 3 = 30 metres.
3. From these fields of impact, it will be determined how many workers, people and properties fall within each zone of influence.

4. This information will be overlaid on a site plan to determine where activities are likely to occur, so a Condition Survey for that location can be conducted. Sensitive buildings such as historical monuments may have a smaller zone of influence due to the nature of their sensitivity.
5. The information gathered will be used to identify locations of sensitive receptors and develop strategies to reduce vibration. These will include limits on working hours and times of activities, using alternative methods and techniques such as directional compacting.
6. If possible, activities will be spread during timeframes when impacts will not continue every day. Wherever possible, a break in work activities will be allowed for.

8.3.11 Waste Management

DESCRIPTION

A general environmental duty of care exists to manage and control our waste materials. Policies and guidelines become mandatory if referred to in the Environmental Protection Act 1994. Note: Waste management requirements for asbestos and hazardous substances are included with the processes for those materials.

RESPONSIBILITIES

Site Manager, Health and Safety Manager and or Delegate, Project manager, all Site Personnel

PROCESS

The Senior Construction Team will liaise with the Health and Safety Manager to ensure waste management procedures are enforced on site.

Defence Waste Minimisation Policy

The Defence Waste Minimisation Policy aims to reduce the amount of waste materials generated by Defence being deposited in landfills. This Policy provides a framework within which waste can be managed effectively in accordance with the fundamental principles of the waste management hierarchy as well as being consistent with best practice environmental management and complimentary to the principles of ecologically sustainable development (ESD).

Defence can apply waste management principles in two distinct areas of its business; in procurement and operations. Defence has significant purchasing power and can make a significant contribution to stimulate the effective use of resources, most notably recycled content products produced by markets and service providers. Options also exist for Defence to reuse and recycle waste materials that are generated in day-to-day activities through to the building of new facilities.

During demolition and construction works at least 70% of all waste by weight (except hazardous waste) is to be either reused or recycled.

The Contractor shall provide records each month confirming weight of all wastes leaving site, weight of waste that was recycled/reused (i.e. not sent to landfill) and the destination and/or name of recycler/waste hauler. Soil stockpiled on site for reuse as fill shall not be counted in the calculation of waste.

Mitigation of Waste

The following controls will be implemented by STH to mitigate project waste:

- Identification of possible waste streams generated by the project and management opportunities (e.g. avoid / reuse / recycle).
- Provision of the appropriate number and types of bins onsite for each of the different types of waste. Bins will be clearly marked and monitored for cross-contamination of wastes.
- Disposal of hazardous wastes according to State requirements.
- Daily inspections on all waste collection areas.
- Tracking of disposal of hazardous wastes or goods through dockets and manifests.
- Salvage and reuse of certain demolition materials (drainage structure, electrical cables, fences) and recycling wherever possible.
- Recycling of waste oils and disposal of waste tyres at approved locations only.
- Details of waste disposed of and recycled will be recorded in the monthly Environmental report. All waste dockets and manifests, quantities, methods, location and inspection times and dates will be included.

Waste Management Licenses, Permits and Approvals

The project will observe the following in regards to licences, permits and approvals:

- Contractor must be licensed and require permits for disposal of demolition material.
- Approvals for changes in land use and the disposal of regulated waste materials require a licence.
- Industrial wastes require Local Government approvals prior to disposal in approved sites (in QLD).
- Asphalt and concrete are not regulated wastes. However, approval will be sought from the DMR (Department Main Roads) or Local Government Council before recycling this type of waste.
- Nuisance laws exist to limit littering around sites and are a general duty of care provision.

Waste Removal

At completion of the project:

- Waste piles will be removed from site to the correct receiving facilities
- Specialised bins will be emptied, waste tracking dockets received, and all bins and skips returned to owners
- All project lay-down areas will be cleared of items and waste and returned to a state approved by the Stakeholder and contract administrator.
- The site office area will be cleaned and all items and waste removed.

The Waste Removal Register will be used to capture information about waste removal; the specific waste streams will depend on project input/output.

8.3.12 Surface Water Quality

DESCRIPTION

Managing water quality for the project site ensures that receiving waters surrounding the site do not suffer sustained or significant deterioration and minimises disruption to landholders, property and third party users. Water quality management is closely linked to environmental issues such as erosion and sediment control, hazardous substances management and quality of the surrounding environment.

RESPONSIBILITIES

Project Construction Team, Consultant

PROCESS

Sources of Impacts on Water Quality

Potential sources of impacts on water quality include:

- Sediment from roads, gutters, and kerbs (or from vehicles deviating from defined roadways)
- Stockpile and storage locations, e.g. storage of fuels and chemicals in improper areas
- Plant and equipment vehicle access that may impact drainage and sediment controls, weeds and pathogens into a watercourse
- Existing condition of receiving waters
- Lack of, or inappropriate erosion and sediment controls
- Localised flooding or storm water run-off
- Oil, fuel or chemical spills near waterways and servicing and refuelling of plant and equipment.

Prohibited releases include scrap metal, motor vehicle bodies or parts, building waste, sawdust, domestic waste, water treatment waste, concrete (including slurry), paint products, manufacturing waste with a pH outside allowable limits, biocides, oil. The relevant approvals and permits have been obtained to allow discharging of water to stormwater or sewer subject to the permit conditions.

Mitigation of Water Impacts

In summary the nature of the project means that the area which may receive rainfall and contribute to low quality runoff will be minimal. Potential impacts relate mostly to material trucked onto adjacent roads as a consequence of excavation and cartage of fill as well as discharge of dirty water from site. This will be controlled through maintaining clean loading areas through washing / brooming. Monitoring by the Project Construction Team will be ongoing to ensure no materials are tracked from site. Water will be tested before discharge as required to ensure compliance with license conditions.

Controls to mitigate the impact of water include:

- Maintaining clean loading areas for wash down and maintenance of equipment/plant. Ongoing monitoring will ensure no materials are tracked from site.
- A separate washout area will be established for the concrete pump hopper and truck chutes only. Concrete truck chutes will be washed out in supplied skips on site; the truck itself will be required to wash out off site.
- Clean water will be diverted around the site to minimise the quantity of water impacted by construction.
- All dewatering activities will be controlled.
- Sand, silt or mud will not be deposited in roadside gutters, stormwater drains or swales.

The “Blue Book” (Managing Urban Stormwater: Soils and Construction – Volume 1, 4th Edition reprinted July 2010) shall be used as a reference point for soil and water management.

8.4 Review and Monitor

8.4.1 Conduct Audits

DESCRIPTION

Project audits are part of the continual improvement process used to identify opportunities and ascertain whether systems, processes, products, procedures and quantities comply with specified, agreed and/or statutory requirements.

RESPONSIBILITIES

Project Personnel, Consultant, Contractor, Client, Project Quality Manager, Supplier

PROCESS

Auditing Approach

- Project audits will be performed to ensure compliance with contract requirements, ISO 9001 and the Project Management System, as well as identify opportunities for improvement.
- An audit schedule will be developed to cover a period of at least 12 months or up until the end of the project.
- The audit schedule will be maintained and updated throughout the life of the project.
- Audit timing and frequency will be planned to suit the status, importance and risk of the activities and areas to be audited. The audit schedule will be based on the significance of risks and results of previous audits and the procurement schedule.
- Occasionally an audit my not be carried out as scheduled for a variety of reasons. Where this is the case, the audit shall be rescheduled as soon as possible and the Project Audit Schedule updated to reflect this.
- At the project start-up stage, the focus will be on the preparation of management plans to ensure the Client's requirements as specified in the project agreement are fully addressed. Risks and opportunities will also be fully assessed at an early stage so as to minimise impacts to the project. When proceeding to the construction stage, audits will focus on the review of onsite construction activities. At project close, the focus will be on proper close-out of outstanding and defect items and the proper handover of relevant documentation to the Client for operation and maintenance purposes.
- Scope of audits will include compliance to the Project Management System and St Hilliers Contractor' requirements.
- If any Consultant, Supplier or Contractor managed by St Hilliers Contractor is applying their own management system, it will be included in the audit schedule.
- Only competent, trained resources will be allocated to implement the audit schedule.
- In accordance with legislative requirements Safety related audits will be reviewed and approved by the Project Manager using the relevant approval form.

Internal Environmental Clearance

During construction STH allows for a Regional Environmental Officer to gain escorted access on a fortnightly, monthly or as required basis to the construction site to monitor and formally audit compliance and notifying the Regional SEM and DEIM of any non-compliance and or environmental incidents.

No later than on month after project completion the IAD project director, in conjunction with the contractor, submit a summary report addressing any outstanding issues and ensuring that prior to operation, any environmental operational conditions have been incorporated into the facilities hand over documents.

Contractor/ Consultant/ Supplier Audits

Contractor, Consultant, Supplier audits will be performed at intervals dependent on the risk of the product or service. Audit reports will be retained and a copy forwarded to the project management team. Corrective actions will be reviewed and, if necessary, the audit schedule amended to include more frequent audits.

Conducting an Audit

An audit involves the following stages:

- Audit Checklist: The Auditor will review the relevant documentation to prepare a draft Audit Checklist. Before the audit, the Auditor will circulate this checklist to all attendees for comment.
- Opening Meeting: At the start of the audit, an opening meeting will be conducted to establish the communication protocols that will apply during the audit and to introduce and discuss the Audit Plan.
- Perform Audit: The Auditor will record the audit findings in the Audit Checklist (template dependant on type of Audit being undertaken) and use the following formats to record deficiencies or improvements identified during audits: Observations, Recommendations, Corrective Action Requests, Non Compliances.
- Closing Meeting: After collecting, verifying and reporting on findings, the Auditor will conduct a closing meeting to debrief the auditee with the audit findings and action items for agreement and sign off.
- Audit Report: The Auditor will prepare and issue an audit report that includes an Audit Action List to the auditee.
- The Opening and Closing Meeting may not occur at all audits e.g. Internal Project Safety Audits are on process rather than a specific contractor or team and therefore issues will be addressed by the auditor and communicated as necessary to the various Project Personnel as required.

8.4.2 Perform Environmental Baseline and Conditioning Monitoring

DESCRIPTION

Baseline readings of dust, noise or vibration levels and waterway conditions etc. are undertaken prior to commencing works as required 'Compliance monitoring' then compares those readings to the observed conditions while work is in progress. This continued monitoring establishes compliance levels.

RESPONSIBILITIES

Project Construction Team, Health & Safety Manager, Consultant

PROCESS

The project contract may outline a specific timeframe by which baseline monitoring needs to be completed, and specifies the environmental factors for which monitoring is required, e.g. real time or deposition dust, noise and water quality. Additional factors that will be considered include vibration, vehicle emissions, dust deposition, potential acid sulphate soils, contaminated land, cultural heritage surveys and rain records.

Baseline-monitoring will be undertaken by the Project Construction Team in liaison with the Health & Safety Manager for relevant environmental factors eg noise, dust, water quality etc.

Baseline Monitoring Requirements

- Baseline monitoring will be undertaken by either the Project Construction Team or a Consultant dependant on the requirement.
- Dust (real time or hi volume) and noise (logger) will be monitored on an ongoing basis depending upon the construction activities being performed at the time.
- Condition surveys will be performed on historical or sensitive buildings in accordance with contract requirements.
- When monitoring noise near buildings, the monitor will be a minimum of one metre from vertical structure (e.g. walls, fences) and placed where it can record and add any impacts arising from subsequent St Hilliers Construction' work sites.
- Water quality will be monitored on an ongoing basis (refer topic 'Surface Water Quality).

8.4.3 Site Inspections

DESCRIPTION

Site inspections are used to identify workplace hazards and deficiencies and assess safety and environmental compliance against St Hilliers regulatory requirements and best practice processes and initiatives. Site inspections cover all aspects of project works.

RESPONSIBILITIES

Health Safety and Environmental Manager, Site Manager, Project Manager, Contractor, WHSO, Foreman, Engineer, Client

PROCESS

Types and frequency of inspections for The Greenbank Training Area Project are identified below.

Any Hazards identified through these inspections shall be managed in accordance with the instruction 'Identify Hazards and Improvements'.

Daily Inspections

- All employees are to conduct a daily visual site inspection of their work area and report any hazards to the area supervisor.
- Each Foreman will conduct visual site inspections of their work areas every shift/day to ensure that any potential hazards and deficiencies are identified, assessed and controlled as required. The inspections will include health and safety issues, environmental issues, working practices and housekeeping.
- Any hazards identified during the inspection will be managed and recorded as described in the process Identify hazards and improvements.

Weekly Inspections

Inspections shall be conducted at least weekly to identify Safety and Environmental issues and monitor effectiveness of controls. Outcomes of these inspections shall be documented on the Weekly Safety Inspection Checklist and Weekly Environmental Inspection Checklist.

Closure of raised items

Evidence that items raised during inspections have been closed-out shall be documented on the Weekly Safety Inspection Checklist and Weekly Environmental Inspection Checklist. Subcontractors shall be issued copies of the weekly inspections to address any items they are responsible for closing out.

Trends Analysis

The data shall be transferred to the Weekly Inspection Trends Register for analysis by the site team, and for data collection by the Systems Team.

Weekly site inspections will be managed as follows:

- Weekly site inspections will be performed the Safety and Environmental Manager and the WHSO.
- The Weekly Safety Inspection Checklist will be completed as a record of the inspection.
- Any hazards and deficiencies identified during the inspection will be managed and recorded as described in the process Identify hazards and improvements.

- A weekly inspection of environmental related issues will be undertaken by the Safety and Environmental Manager.

The Weekly HSE Cover Sheet identifies relevant information to be submitted to the HSE Manager on a weekly basis. HSE Manager shall be responsible for assessing submitted information and proposing necessary actions at the Business Systems Team meeting. Information shall be included in the Corporate Services Report (Business Systems Safety section) which then forms part of the monthly State and Board reports.

Contractor Inspections

Contractors Site Safety Person shall inspect the site with St Hilliers Safety officer in the form of Site Safety Walk Inspections. These shall occur on a minimum of twice weekly and the results will be distributed to the Site Safety Committee for review. Where possible, other Contractors workers will also be involved in the Site Safety Walk Inspections.

Client Inspections

The Client or representative may inspect the project under conditions outlined in the contract agreement.

Inspections of Contract Work

In addition to the system audit / surveillance carried out on the Contractor's activities, the Foreman will carry out frequent inspections of all works in progress. Contractors will be required to participate in audits and inspections of their work.

Where applicable, the Contractor understands the importance of completing them correctly and in a timely manner.

If Contractor work on the site is being performed contrary to the Contractor's SWMS and/or applicable legislative requirements, action will be taken immediately. This may include a direction to stop work if necessary.

Performance of scheduled inspections by relevant personnel will be monitored using the 'Monthly Compliance with Health and Safety Inspections & Communications Register'.

8.4.4 Report Monthly Safety and Environmental Performance

DESCRIPTION

Reporting of project data to the state office, Client and St Hilliers senior management is to occur at the end of each month and prior to the 14th of the next month

RESPONSIBILITIES

Health and Safety Manager

PROCESS

The reporting of monthly safety and environmental performance will be managed by the Health and Safety Manager as follows:

The safety, health and environmental data extracted from the system includes but is not limited to:

- Average Lost Time from Injury
- Lost Time Frequency from injury
- Cause/ type/area of injury
- Date of safety meetings
- Monitoring and audits
- Regularity of safety issues arising from inspections
- Instances of non-compliance.

Each month, the project will report the performance to the State Business unit.

8.5 Manage Incident

8.5.1 Report Environmental Incidents

DESCRIPTION

Describes how environmental incidents are classified (as low to high severity) and reported.

RESPONSIBILITIES

Health & Safety Manager

PROCESS

Classifying Incidents

Incident -exposure to a hazardous substance or dangerous good.

The reporting of environmental incidents relating to harmful effects is classified into three levels of incident:

- Level 3:Low severity occurrence defined as pollution or degradation with short-term (less than one month) and reversible detrimental effects on the environment and/or community. For example, minor oil spill completely remediated.
- Level 2:Medium severity defined as pollution or degradation with persistent (greater than three months) but not reversible detrimental effects on the environment and/or community.
- Level 1:High severity event defined as pollution or degradation that has or may have irreversible detrimental effects on the environment and/or community, for example, illegal clearing of endangered plants.

Recording Incidents

HSE Managers shall be contacted immediately when incidents occur to assist the reporting process and provide an Incident Report number from the Master Incident Register. The Incident Report shall be completed by a competent person within 24hrs of the incident occurring or as directed otherwise by HSE Managers.

For this task a competent person is a person who:

- Is a senior site representative (eg Project Manager/Site Manager as nominated in the Project Plan);
- Is a state HSE Manager or HSE Officer; or
- Has received training in incident management; or
- Is nominated by the HSE Manager.

The reporting process shall involve where possible representatives from the project team and senior management (eg Project Managers, Operations Managers, State Managers, HSE Manager etc) and other parties as required. The aim of this report is to document the known facts of the incident and immediate actions taken to prevent further risk of harm. Interpretations and opinions shall not be included. Incident reports shall not be submitted, complete or in part, to external parties, including statutory authorities, without documented approval from St Hilliers Legal. The Incident Report shall be signed off by the person completing the report, the Project Manager and the HSE Manager.

The Project Manager shall be responsible for copying the Incident Report to the National Business Systems (QHSE) Manager and recording the incident on the projects Incident Report Register. The National Business Systems (QHSE) Manager shall be responsible for updating the Master Incident Register and communicating the incident to senior management.

In the event of a serious incident the Serious Incident Response Chart shall be initiated and the above steps in this work instruction followed.

Investigations by Statutory Authorities

Where a Statutory Authority attends site to investigate an incident, the following is a guide for St Hilliers in providing accurate information.

- State the facts only.
- If you don't understand the question or believe it to be two questions in one, ask to "clarify the question further"
- Do not anticipate the questions
- Do not try and reconstruct the events in your own view. Do not speculate or give your opinion - neither is relevant.
- You are not obligated to re-construct the event
- Always state "to my best recollection" when asked a question
- Do not answer with second hand knowledge
- You can always clarify your statement from previous answers

8.5.2 Manage enquiries and Complaints

DESCRIPTION

Enquiries / complaints will be dealt with in a responsive manner so that stakeholders feel their concerns are being seriously dealt with and not dismissed. This will assist in building a relationship of trust and reliability between the community and project team.

RESPONSIBILITIES

Project Manager

PROCESS

The Stakeholder & Community Relations Coordinator will handle the enquiries and complaints that arise on a project and be available 24 hours a day, seven days a week.

If any member of the project team is approached in the field by someone distressed or concerned about the project, they will notify the Project Manager immediately.

A central point of contact will be maintained for enquiries and complaints, to enable the content and distribution of information to the community and stakeholder to be managed and monitored.

Details of enquiries / complaints will be recorded and maintained in the project's Community Database.

The following protocol will be used as a basic guide used for handling enquiries and complaints.

- The member of the project team who receives the enquiry / complaint will record and forward it to the Stakeholder & Community Relations Coordinator immediately; normally the project manager or delegate
- If approached directly by a member of the community with a complaint, the project team member will listen to the person's concerns and advise them to contact the Project Manager. Alternatively, the team member will ask for the person's contact details and advise that a team member will be in contact as soon as possible.
- The project manager will nominate someone from within the project team and ensure a response and appropriate action has commenced within two working hours of receiving the enquiry/ complaint.
- In conjunction with project management, the enquiry / complaint will be managed until resolved.
- No member of the construction team will speak to the media; they will politely decline comment and put them in contact with the project manager.

8.5.3 Manage Incident Involving Hazardous Substance

DESCRIPTION

Describes the management of incidents involving hazardous substances include fire, explosion, spillage, leakage or other escape into the environment.

RESPONSIBILITIES

Project Manager, Environmental Protection Agency, Consultant

PROCESS

- Activities where hazardous substances are in use will maintain an emergency response capability and suitable number of spill kits or suitably stocked area in a proximate container to combat approximately 200 litres of fuel or chemical spill.
- In the event of an incident or near miss involving dangerous goods spill or leak, the project will:
    - take immediate action to reduce any risk associated with the spill or leak
    - investigate the incident to determine the likely cause, record the outcome of the investigation (keep these records for the life of the facility) and take appropriate remedial actions
    - review the risk assessment required in the relevant State regulations and take appropriate actions to reduce risk.
    - excavate or remove contaminated ground (spills up to five litres or less) in a sensitive area, or remedy through an approved process
    - coordinate remediation works through the Environmental Protection Agency (EPA) if the spill is a Level 2 Medium with a persistent impact over three months
    - conduct soil sampling and monitoring of the cleanup area if required
    - obtain inputs from Consultants if required.
- Reporting of spills will be conducted as follows:
    - Less than 20 litres will be reported through the internal SH&E Incident Management System and Monthly Environmental Report.
    - Over 20 litres will be reported to the Project Manager immediately and managed by them.
    - Significant spills / incidents may require upward reporting.
- The appropriate authorities will be notified in accordance with legislative requirements.

St Hilliers

Appendix A

Roles and Responsibilities

Appendix B

Waste Management

Appendix C

Preliminary mitigation strategies to minimise impact to Flora and Fauna during construction

Appendix D

Environmental Policy