BLACKALL TAMBO REGIONAL COUNCIL

INTEGRATED ENVIRONMENTAL MANAGEMENT SYSTEM

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Foreword

Blackall Tambo Regional Council is committed to protecting and enhancing the Region's natural and built environment so that ecological, social and economic benefits are provided to current and future residents and businesses. This commitment uses the Integrated Environmental Management System (IEMS) as a cornerstone upon which Council will provide environmental benefits to the Region.

This Integrated Environmental Management System has been developed in accordance with the Environmental Protection Act (1994) and provides Site Based Management Plans for Council's licensed Environmentally Relevant Activities. It also acknowledges the principle of general environmental duty, and the due diligence required by all Council officers in their duties throughout the Region.

Council's commitment to ongoing improvement of environmental management is a key element of the Integrated Environmental Management System. The development of a draft Waste Management Strategy is an example of this improvement process. Ongoing training of staff in environmental best practice, along with programs to examine energy and waste management of all Council activities, are other components of the Integrated Environmental Management System.

Council's Environmental Policy recognises that environmental well-being is essential to the social and economic vitality of the Blackall Tambo Region. The environmental regulation of commercial activities in the Region, together with Council's Integrated Environmental Management System will provide benefits for the entire region.

Abbreviations/glossary

Throughout the document, reference is made to terms and abbreviations commonly used in environmental management. The meanings of the terms are briefly outlined in this section.

AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AWWA	Australian Water and Wastewater Association
BOD	Biochemical oxygen demand
BTRC	Blackall Tambo Regional Council, also Council
COD	Chemical oxygen demand
DO	Dissolved oxygen
EHO	Environmental Health Officer
EHP	Department of Environment and Heritage Protection
EO	Environmental Officer
ep	equivalent persons
EPA	Environmental Protection Act, 1994
ERA	Environmentally Relevant Activity
IEMS	Integrated Environmental Management System
NHMRC	National Health and Medical Research Council
PER	Preparatory Environmental Review
SBMP	Site Based Management Plan
SS	Suspended solids
STP	Sewage treatment plant

Environmental Aspect: Element of an organisation's activities, products or services that can interact with the environment.

Environmental Management System (EMS): A part of the overall management system that focuses on achieving the organisation's environmental responsibilities and goals. The EMS includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.

Environmental Policy: Statement by the organisation of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives.

Environmental Audit: The systematic, documented verification process of objectively obtaining and evaluating audit evidence. The process determines whether specified environmental activities, events, conditions, management systems or information about these matters conform with audit criteria. The results of the audit are presented to the client.

Continual Improvement: Process of enhancing the EMS to achieve improvements in overall environmental performance in line with the organisation's environmental policy.

Environmental Performance: Measurable results of the EMS based on its environmental policies objectives and targets.

Environmental Impact: Any change to the environment, whether adverse or beneficial, resulting from an organisation's activity, product or service.

Local Agenda 21 or Agenda 21: A long term strategic plan for achieving sustainability in the 21st Century. It incorporates economic development, employment, environmental protection and social justice concerns, specifically at the local government / community level.(United Nations, 1994)

Site Based Management Plan: A document presenting an ERA's description and action plan for environmental management and improvement.

IEMS—INTEGRATED ENVIRONMENTAL MANAGEMENT SYSTEM

An IEMS is required when:

- an application is made to carry out an itinerant activity in more than one local government area; or
- a single application is made for an environmental authority for different activities to be carried out by the applicant or activities to be carried out by the applicant at different places.

The IEMS must address the following matters about the carrying out of activities:

- the monitoring of releases of contaminants into the environment and an environmental assessment of the releases;
- staff training and awareness of environmental issues;
- the conduct of environmental and energy audits;
- waste prevention, treatment and disposal.

(Environmental Protection Regulation: Section 41 and 42)

ERA—ENVIRONMENTALLY RELEVANT ACTIVITY

An activity may be prescribed by regulation as an ERA if the Governor in Council is satisfied:

- a contaminant will or may be released into the environment when the activity is carried out;
- the release of the contaminant will or may cause environmental harm. (EPA: Section 38).

ENVIRONMENTAL AUTHORITY

Is a licence, permit or other authority that:

- is issued under an interstate law
- is prescribed by regulation to be an environmental authority under the EPA.

EPA: Section 48 (1)

BPEM—BEST PRACTICE ENVIRONMENTAL MANAGEMENT

The management of an activity to achieve an ongoing minimisation of the activity's environmental harm through cost-effective measures assessed against the measures currently used nationally and internationally for the activity. (EPA: Section 18)

ENVIRONMENTAL HARM

Environmental harm is any adverse effect, or potential adverse effect (whether temporary or permanent and of whatever magnitude, duration or frequency) on an environmental value. Environmental harm may be caused by an activity:

- whether the harm is a direct or indirect result of the activity; or
- whether the harm results from the activity alone or from the combined effects of the activity and other activities or factors.

EPA: Section 14 (1 and 2)

EMP—ENVIRONMENTAL MANAGEMENT PROGRAM

EMP is a specific program that, when approved, achieves compliance with the Environmental Protection Act for the matters dealt with by the program by: -

- reducing environmental harm; or
- detailing the transition to an environmental standard.

(EPA: Section 80)

1 Approach to environmental management

1.1 OVERVIEW

The Environmental Protection Act and Regulation were introduced to help meet the challenge of protecting Queensland's environment, while allowing for sustainable development. A key provision of the Act, is the *general environmental duty*. This means that a person may not carry out an activity that causes, or is likely to cause harm to the environment, unless the person takes all reasonable and practical measures to prevent or minimise the harm. The principles of due diligence in BTRC require individual responsibility by all staff, Managers, Councillors and the CEO.

Many activities have the potential to release contaminants into the environment and cause environmental harm. The Environmental Protection Regulation defines activities that are likely to cause environmental harm as Environmentally Relevant Activities (ERAs).

Under the Act, the operator of an ERA must apply to the Queensland Department of Environment and Heritage Protection (EHP) for an environmental authority. Where more than one ERA is conducted, the operator may choose to link the activities together under a single application, by means of an Integrated Environmental Management System (IEMS).

The Blackall Tambo Regional Council operates a number of ERAs, including:

- wastewater treatment
- landfill waste disposal
- motor vehicle workshops
- extractive and screening
- chemical and fuel storage.

Council has chosen to develop and implement an IEMS to manage the potential environmental impacts of its operations. The IEMS incorporates a number of supporting programs, namely:

- site based management plans
- specific objectives and performance targets
- documentation and reporting systems to track and record environmental issues
- procedures for review and continual improvement
- monitoring programs for the release of contaminants into the environment
- environmental training
- community consultation
- waste prevention and management
- energy management

- the conduct of environmental and energy audits.

Some of the supporting programs are in the early stages of implementation. Where the need for further work has been identified, a program outline, proposed development approach and implementation schedule are provided. Council's annual return to EHP will report on the implementation progress.

Site specific programs such as operational procedures, emergency response plans and monitoring procedures will be independent documents and will be held at the respective ERA facilities. Reference to these programs are noted in the IEMS.

Site Based Management Plans (SBMPs) have been developed to demonstrate a commitment by Council to continual improvement. A SBMP details the specific steps being undertaken to ensure compliance with the EPA and provides a mechanism for regular auditing of environmentally relevant activities.

1.2 ENVIRONMENTAL POLICY

An Environmental Policy sets an overall sense of direction for action. Blackall Tambo Regional Council's Policy is a statement that stresses the importance of conservation, pollution prevention and continual improvement in environmental management.

The policy is presented on the following page.

1.3 ENVIRONMENTALLY RELEVANT ACTIVITIES

Blackall Tambo Regional Council operates Environmentally Relevant Activities including waste disposal, wastewater treatment and water treatment. The full classification of ERA's is provided in Table 1.1.

Table 1.1 Environmentally relevant activities

Site	Location	Environmentally Relevant Activities (ERA's)	
Aerodrome Road, Blackall	Lot 62 TB 293	63 2 (b) (ii)	Sewage Treatment >100 <1500 EP
66-68 Rose Street, Blackall	Lot 2 RP 607504	21	Motor Vehicle Workshop
Evora Road, Blackall	Lot 134 SP 148063	60 2 (b)	Waste Disposal 2000t – 5000t p.a.
Sale Yards, Gut Pit, Blackall	Lot 145 TB 247	60 1 (a)	Waste Disposal <50,0000t p.a.
Landsborough H'way, Tambo	Lot 3 SP 157686	63 2 (b) (ii)	Sewage Treatment >100 <1500 EP
Dawson Development Road, Tambo	Lot 1 SP 197820	60 2 (a)	Waste Disposal 50t – 2000t p.a.
Mobile Activity	Within Queensland	57 2 (b)	Regulated Waste Transport 6 - 35 vehicles.

Site	Location	Environmentally Relevant Activities (ERA's)	
'Avington' , Blackall	Lot 2 MTL 25	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
'Melrose', Blackall	Lot 4 RP 899423	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
'Yallaoi', Blackall	Lot 12 SP 181916	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
'Jabinda Pit', Tambo	Lot 1 RP 615624	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
'Enniskillen', Tambo	Lot 1144 SPPH 767	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
'Mt Enniskillen', Tambo	Lot 6 WYR 42	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
Tambo Common, Tambo	Lot R59 TB 2887	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
Tambo Road, Tambo	Lot 5144 PH 732	16 2 (b)	Extractive and screening activities – 5000t – 100000t p.a.
Coolatai Road Reserve Parcel	Lot 1 on PER 5689	16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Blackall-Jericho Road Reserve	Adj to Lot 78 on SP 193807 & Lot 191 on TB 211	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Sumnervale-Alva Road Reserve	Lot 1 on PER 5689	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Evora Road, Blackall	Lot 158 on TB 240 &	16 2 (b)	Extractive and screening

	Lot 25 on TB 222	16 3 (a)	activities – 5000t – 100000t p.a.
Site	**Location**	**Environmentally Relevant Activities (ERA's)**	
Pentwyn Road Reserve	Adj to Lot 2 on TZ 228255 & Lot 4 on SP 123559	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Neverfail Road Reserve	Stock Route	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
McFarlane Downs	Lot 2 on TB 23	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Thrungil 1	Lot 1 on TB 276	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Thrungil 2	Lot 1 on TB 276	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Thrungil 3	Lot 1 on TB 276	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
'Harold Park', Windeyer	Lot 1 on Plan WYR 17	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Mount Pleasant Road, Tambo	Lot 6 on Plan WYR 13	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.
Romulus-Cooee	Lot 4 on TB 74 & Lot 5 on WOO 55	16 2 (b) 16 3 (a)	Extractive and screening activities – 5000t – 100000t p.a.

1.4 KEY ASPECTS OF ENVIRONMENTAL MANAGEMENT

1.4.1 Objectives

The primary objectives of the IEMS are to:

- develop and implement programs for the management and operation of Council's ERAs to comply with, and where feasible, exceed the environmental requirements;
- provide state government authorities with a framework to assist in the assessment of the effectiveness of policies and practices;
- provide continuing evidence of environmental due diligence;
- inspire community confidence in the intentions and ability of council to manage its operations in an environmentally acceptable manner.

1.4.2 Environmental criteria

All Council employees have an obligation to environmental protection, including legislated responsibilities:

> *A person must not carry out any activity that causes, or is likely to cause environmental harm, unless the person takes all reasonable and practical measures to prevent or minimise the harm, and*
>
> *a person must not cause land to become contaminated land.*

The guiding principles for the IEMS and supporting programs include those embodied in the principles for Ecologically Sustainable Development. The key features are:

- Enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations.
- Provide equity within and between generations.
- Protect biological diversity and maintain essential ecological processes and life support systems.
- Ensure decision making processes integrate both long and short-term economic, environmental, social and equity considerations.
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- Recognise and consider the full scale of potential environmental impacts resulting from actions and policies.
- Provide for broad community involvement on decisions and actions that affect them.

- Recognise the need to maintain and enhance competitiveness in an environmentally sound manner.

The IEMS has been prepared with the knowledge that new legislation and changes to existing legislation have been forecast. However, these changes cannot be anticipated and, while reference may be made to future legislation, compliance with the legislation in force at the time is essential. The IEMS Coordinator and IEMS Committee are responsible for managing the implementation of the IEMS as well as being aware of the changes to the legislation, regulations, policies and guidelines.

In accordance with the requirements of the EPA, the IEMS and supporting programs will be assessed against the following standard criteria:

- The principles of ecologically sustainable development, as set out in the National Strategy.
- Any applicable environmental protection policy (EPP).
- Any applicable Commonwealth, State or Local government plans, standards, agreements or requirements.
- The licence conditions issued under the environmental authority.
- Applicable environmental impact study assessments or reports.
- The character, resilience and value of the receiving environment.
- Submissions made by interested parties.
- Best practice environmental management for the activity.
- The financial implications of the requirements of the SBMP.
- The public interest.
- Any other matter prescribed by regulation.

The following standards, guidelines and other criteria apply to monitoring and auditing of performance:

Water and wastewater

- Environmental Protection (Water) Policy.
- Australian Water Quality Guidelines for Fresh and Marine Waters—ANZECC.
- Standard Methods for Examination of Water and Wastewater— APHA/AWWA/WEF USA.
- AS2031—Selection of Containers and Preservation of Water Samples for Chemical and Microbiological Analysis.
- Water quality sampling manual—EHP.

Soils

- ANZECC/NHMRC—Guidelines for the Assessment and Management of Contaminated Sites.
- Guidelines for the Assessment of Contaminated Land in Queensland.
- Queensland Government Chemical Laboratory—Guidelines for Soil Sampling.

Air

- AS3580—Methods of Sampling and Analysis of Ambient Air
- NHMRC National Guidelines For Control Of Emission Of Air Pollutants From New Stationary Sources

Noise

- AS1055.1 and AS1055.2—Acoustics—Description and Management of Environmental Noise.
- AS2436—Guide to Noise Control on Construction, Maintenance and Demolition Sites.
- AS2659.1—Guide to the Use of Sound Measuring Equipment.
- AS2659—Sound Level Meters.
- Noise Measurement Manual—EHP.

Dangerous goods

- AS1216—Classification, Hazard Identification.
- Information Systems for Dangerous Goods.
- AS1678—Emergency Procedure Guides—Transport.
- AS1940—Storage and Handling of Flammable and Combustible Liquids.
- AS2508—Safe Storage and Handling Information Cards for Hazardous Materials.
- AS2809—Road Tank Vehicles for Dangerous Goods.
- AS2931—Selections and Use of Emergency Procedure Guides for Transport of Dangerous Goods.
- Australian Dangerous Goods Code—Department of Transport and Communications

1.5 IEMS STRUCTURE

1.5.1 Overview

Schematically, the IEMS has four tiers of management focus as shown in Figure 1.1. The lowermost tier includes components that are prescriptive and site specific, while the top tier is more strategic and Council-wide. The second tier contains issues that are required under the *Environmental Protection Act 1994*, and include programs that will be implemented to meet Council's specific needs. This tier contains component programs, such as training, that will be centrally coordinated. The third tier contains the SBMPs to address the environmental programs for individual ERAs. The SBMPs are prescriptive, but still contain the scope for innovation not normally associated with standard procedures (fourth tier).

The Figure also indicates a hierarchy of responsibility, with Councillors and senior management ensuring the system operates properly (e.g. focus on level 1), while site staff use and continually improve their procedures (e.g. focus on level 3).

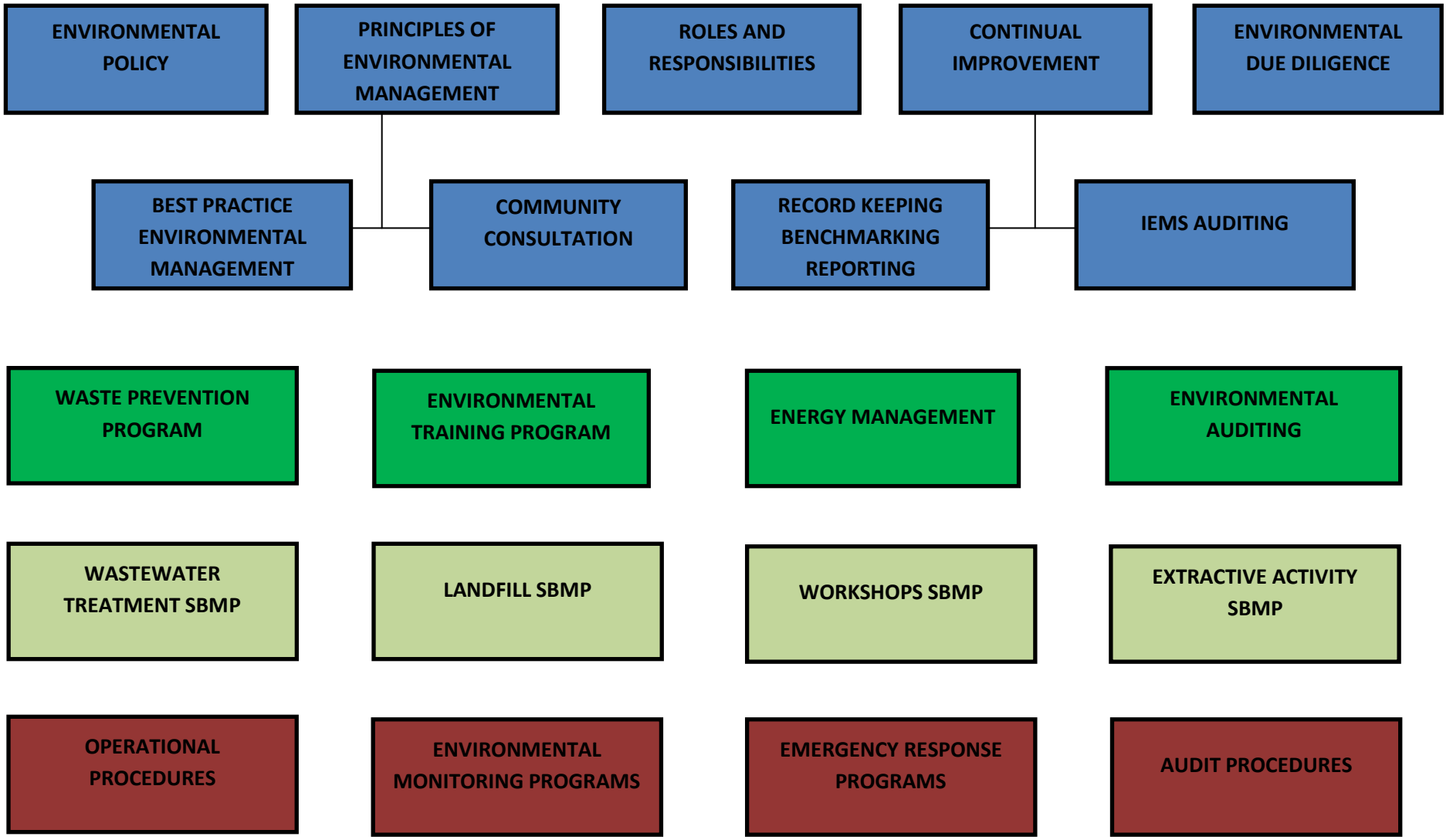


Figure 1.1 **IEMS Structure** **Blackall Tambo Regional Council**

1.5.2 IEMS Programs

Section 42 of the Environmental Protection Regulation requires that specific programs be addressed as part of the IEMS. These programs include environmental monitoring, environmental training, energy audits, environmental audits and waste prevention.

Where environmental monitoring is proposed, it is site specific and is included in the SBMPs. Section 2 contains Council-wide programs involving environmental training, energy conservation (including audits), and waste prevention programs. The environmental audit program is an extension of the initial audit and is described below.

1.5.3 Audit Structure

Prior to the development of the IEMS, Council has not had a formal environmental management system. As an initial step, preparatory environmental reviews and environmental audits were conducted at Council's nominated ERAs, to determine the current status of Council's operations. The objective was to identify the environmental aspects associated with each ERA, and evaluate which aspects may have a significant environmental impact. The audit and evaluation addressed:

- environmental concerns:
    - the scale of the impact
    - the severity of the impact
    - probability of occurrence
    - duration of impact;
- management concerns:
    - potential regulatory and legal issues
    - cost and difficulty of changing the impact
    - effect of change on other activities and processes
    - concerns of interested parties and community perception.

Specialised programs (for example, sludge management or trade waste management) were developed for individual ERAs where deemed necessary. Under the Environmental Protection (Interim) Regulation, Council must address environmental audits. Council will conduct internal environmental audits utilising checklists and proformas developed specifically for mechanical workshops, sewage treatment plants, extractive activities and the landfill operations. Following Council's initial internal audit, these checklists and proformas will be modified to focus on issues that may change between audits, such as a site's chemical inventory.

The audits will be carried out with reference to ISO14010—Guidelines for Environmental Auditing–General Principles. The internal audit program will be augmented by external audits on occasions. The audit and post-audit criteria will include a number of key components as described in the following: -

Monitoring and reporting

The monitoring requirements which will measure actual performance and the reporting structure to be followed.

Review and corrective action

The process of comparing performance targets with actual targets and determining actions to be implemented where a performance target is not met.

Improvement opportunity

Where a target is not reached, or where an action may be implemented to more efficiently achieve the performance target.

1.5.4 Site Based Management Plans Structure

Under Section 41 of the EPA, an application for an environmental authority must be supported by enough information to enable the authority to decide the application. Under the IEMS, this information is in the form of Site Based Management Plans (SBMP). Each SBMP describes the sites and the specific steps being undertaken to ensure compliance with the EPA. Each plan has been categorised based on ISO14000 and typically include:

- air emissions
- liquid effluents
- waste management and minimisation
- land management (including soil contamination and erosion)
- community concerns
- use of resources (including energy, water and chemicals as appropriate).

Each SBMP outlines the environmental programs that are conducted at the ERAs. The structure of the SBMP is based on a combination of ISO14000 and EHP guidelines and includes the following components for each proposed environmental program, (e.g. air emissions, land management):

Objectives

The operational objectives that guide the strategies and tasks.

Performance indicators

The results or product that relates to the objective.

Performance targets

Auditable goals to assess and measure the level of achievement relating to the performance indicators target completion dates.

Strategies

An action plan to achieve the objectives; consisting of tasks, outcomes, responsibilities, implementation schedule and references to inter connected programs.

1.6 ROLES AND RESPONSIBILITIES

1.6.1 Overview

The responsibility for IEMS performance involves staff at all levels of the Blackall Tambo Regional Council. The CEO and elected Councillors are ultimately responsible for the implementation and continual improvement of the IEMS. An IEMS Committee will be formed, based on Council's Executive Team including the Managers of the relevant operational branches.

The Integrated Environmental Management System is managed by the Environmental Health Officer (EHO). The EHO is the main contact for Department of Environment and Heritage Protection on aspects of the IEMS. All external SBMP reporting will be approved by the EHO. A full annual review and report on the implementation, compliance with and improvement of the SBMP, will be prepared by the EHO for submission to EHP. The EHO will report to the IEMS Committee and to the elected Councillors on IEMS issues.

The officer responsible for the overall management and implementation at the ERA level is the SBMP Supervisor (eg Works Supervisor). The SBMP Supervisor reports to the EHO on IEMS issues.

The internal audits will be coordinated by the Council's Audit Team. The hierarchy of responsibilities is summarised in Figure 1.2.

1.6.2 SBMP Management

SBMP Supervisors are responsible for compiling the relevant data for documenting environmental compliance and due diligence. SBMP Supervisors will maintain the system for record-keeping and will forward relevant information to the EHO. The minimum frequency of reporting is quarterly. An annual summary will be prepared by each SBMP Supervisor to assist the EHO with the annual return submission to the EHP. All external environmental management reporting will be approved by the EHO.

The SBMP Supervisors will appoint Delegated Personnel from within existing staff to conduct the routine actions specified under the SBMP. The Delegated Personnel may be operators or technical officers with experience in the operation and management of their particular ERA. The nominated Delegated Personnel will report to the SBMP Supervisor. It is feasible that the role of Delegated Personnel can be combined with the role of the Site Safety Officer.

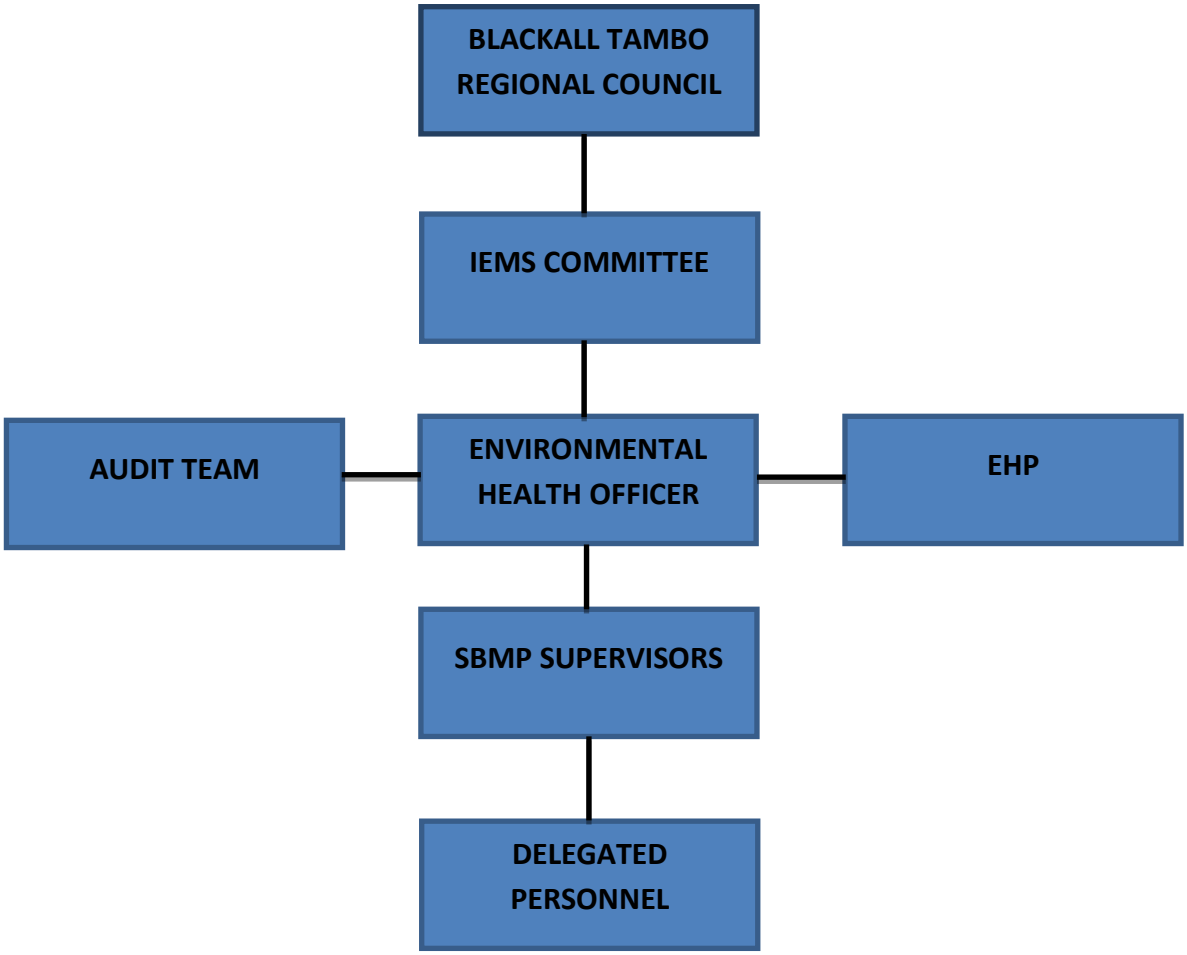


Figure 1.2
KEY IEMS ROLES

The Delegated Personnel will compile the raw data (e.g. analyses, inspection checklists, energy consumption), assess its validity and provide it to the SBMP Supervisor.

The Delegated Personnel are responsible for ensuring that the required inspections, monitoring and recording of data, as specified in the SBMP are undertaken. The Delegated Personnel may choose to delegate some activities; however, all such delegations must be documented, responsibilities clearly stated and staff authority levels approved by the appropriate SBMP Supervisor.

Under the general environmental duty, all personnel and the public have a responsibility to prevent and minimise environmental harm. For Council personnel, this will include at a minimum reporting environmental incidents to a Delegated Personnel.

The Delegated Personnel are responsible for recording the date, time and nature of any non-conformance events or infringements and reporting this to the appropriate SBMP Supervisor. A report on significant environmental incidents will be prepared by the EHO.

The EHO is responsible for notifying EHP in the event of a significant environmental incident. Where the potential for environmental harm from an incident is considered significant, notification should be an *Environmental Protection Act 1994*, Section 101 'Program Notice'. The submission of a program notice provides a degree of immunity from prosecution for the incident and commits Council to prepare and submit a program to ensure non-conformances are brought back to compliance.

1.7 COMMUNITY CONSULTATION PROGRAM

1.7.1 Introduction

The purpose of this Section is to assist in the development and implementation of a community consultation program for environmental management, to complement Council's IEMS. Community consultation is essential for the long term success of the environmental management system. A key principle of ISO14000 series for Environmental Management Systems is:

> *to establish and maintain communications with internal and external interested parties.*

The provision of appropriate information to Council employees and other interested parties, serves to motivate employees and encourage public understanding and appreciation of Council's efforts to improve its environmental performance.

1.7.2 Objectives

Through the implementation of a community consultation program, Council should seek to:

- involve all sectors of the community;
- demonstrate a commitment to continual improvement and accountability within Council;
- integrate consultation, planning and policy making;
- provide feedback on community input;
- focus on long term outcomes and sustainability;
- ensure equity within and between generations;
- encourage information sharing between Council, regulatory bodies, local industry and community groups.

As achieving continual improvement in environmental management is a long term process, Council and community commitment to the project will have to be renewed over and over again. This means that information sharing must occur on a regular basis, to keep details regarding progress, new developments, problems and other issues as a mainstream theme in community and Council activities.

1.7.3 Current activities

Council has an Executive Team, consisting of CEO and Managers with access to professional environmental and planning advisors. The role of this group is to provide advice to Council on environmental matters of concern to the community and of ways and means of addressing these concerns.

Council involves relevant community representatives on project working teams. This involvement helps ensure that community views are considered and utilised in developing policies, facilities and operational plans undertaken by Council.

1.7.4 Consultation techniques

There are many techniques available which may be used to facilitate community involvement, not all of which will be applicable to any given situation. In most cases, a combination of strategies will be required to reach all the necessary stakeholder groups. The following factors should be considered in the selection of appropriate consultation techniques:

- The profile of the target groups (e.g. age, education, demographics)
- The nature of the information to be communicated
- The nature of any feedback required
- Organisation of community groups
- Anticipated receptiveness of the community
- Skills and resources of consultation team
- Time frame and budget constraints.

1.7.5 Standards

The development and implementation of Council's Community Consultation Program should be undertaken with reference to current best practice standards and guidelines. A selection of appropriate guidelines is provided as follows:

- AS/NZS ISO14001, AS/NZS ISO14004—Environmental Management Systems (1996)
- AS4269—Complaints Handling (1995)
- Australian Manufacturing Council: The Environmental Challenge—Best Practice Environmental Management (1993)
- Local Agenda 21: Managing for the Future (1994)

The application of these guidelines will assist in establishing an effective consultation program which meets Council's requirements and facilitates community involvement in the development of best practice environmental management techniques.

2 Programs

2.1 INTRODUCTION

The IEMS programs address the areas required under Section 42 of the Environmental Protection (Interim) Regulation. The programs are:

- Waste Prevention
- Energy Management
- Environmental Training
- Environmental Auditing.

These programs will be coordinated on a Council-wide basis, as opposed to a site specific basis, and will not be limited to environmentally relevant activities. This approach will better utilise Council's resources and improve environmental performance in a wide range of facilities. One area required under Section 42 that is addressed at the site specific level is environmental monitoring.

2.2 WASTE PREVENTION AND ENERGY MANAGEMENT

2.2.1 Overview

The purpose of these programs is to provide a holistic approach to Council's waste and energy management. The programs will address activities at all Council facilities, especially those locations not covered by a Site Based Management Plan, such as libraries, community centres and Council administration buildings. The individual projects will be diverse and may be applicable to sites such as an office environment or a mobile construction and maintenance job. The developmental phase of each program is flexible to allow Council to prioritise issues and to focus on the sites that will provide the maximum benefit.

2.2.2 Officer responsibilities

Successful waste prevention and energy management programs will require input from all levels of Council. Program establishment is based on support from senior management. This commitment aims to produce environmental benefits and potential cost savings.

Given the commitment, the roles and responsibilities of the program are to be established and subsequently resources can be allocated. The operational structure for both programs is consistent with the overall IEMS structure and is presented in Figure 2.1.

To provide guidance during the implementation phase of both programs, a Waste and Energy Technical Working Group will be formed. The members of the Working Group are to be familiar with Council's operations and should represent the major relevant departments. The Working Group will assist the EHO in developing and establishing the waste prevention

and energy management program. The expertise of the Working Group will augment the EHO and assist in supervising the program.

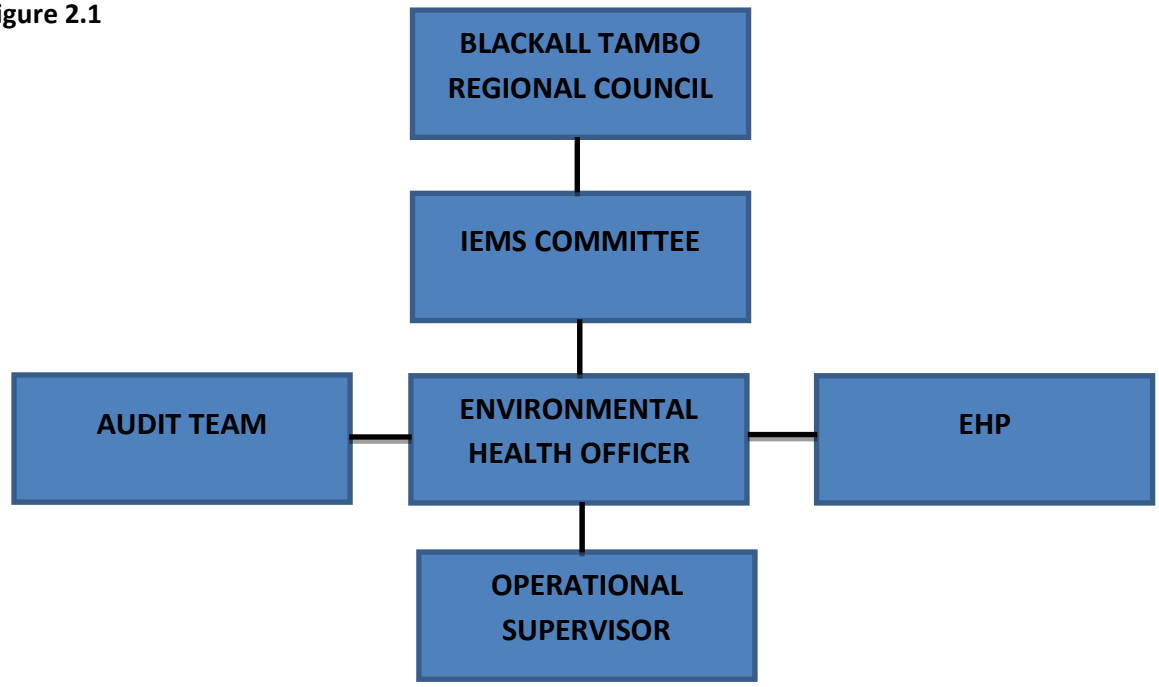
An Operational Supervisor will be given the responsibilities and the resources to conduct the waste prevention and energy management programs. The Operational Supervisor will manage specific programs within the individual work groups with the guidance of the EHO. In some instances, for example remote sites, it may be advantageous for the Operational Supervisor to delegate specific responsibilities to on-site personnel.

In general, reporting will follow the hierarchy shown in Figure 2.1. The Operational Supervisor will compile data and identify opportunities for improvement. It is envisaged that the reports will be brief. The reports to the Waste and Energy Technical Working Group may be a checklist report, waste generation and tracking chart or audit summary. The EHO will discuss the findings with the Operational Manager to help ensure that individual perceptions are recognised and a balanced overview is maintained. The Waste and Energy Technical Working Group will review the reports and continually improve the programs.

The EHO, with review and input from the Waste and Energy Technical Working Group will prepare summary reports for the Executive Team and Council. These reports should be prepared twice yearly, one forming part of the IEMS annual review and the other being an interim report.

Training will be an important part of the long term success of the waste prevention and energy management programs. The Operational Supervisor will require training in waste prevention and energy management and auditing to perform their duties, and to help educate other Council employees on these issues. Implementation of an educational program will increase employee awareness in waste prevention and energy management. This may be augmented by the use of questionnaires and self-assessments, to further highlight opportunities for improvements.

Figure 2.1



2.2.3 Waste prevention program elements

Benchmarking waste generation

One of the most fundamental aims of any waste strategy is to reduce the amount of waste generated. A national goal has been set for local authorities to reduce waste disposal to landfill by 50% per capita by 2020. As a target, it is consistent with the principles of ESD which requires that resources be used more efficiently. From this perspective, waste is best avoided or reduced at the source. The waste management protocol, which is a cornerstone of this waste prevention program, is shown in Figure 2.2.

As an initial step, benchmarking will be implemented to determine the source and quantity of waste produced from Council operations. Operational Managers will review the existing data for their areas of responsibility. The Operational Managers will then audit those areas using a standardised checklist. The audit is followed by an assessment meeting and then the implementation of improvement measures. These tasks form a cyclical program of data review, audit, assessment, planning, implementation and review.

Planning and best practice waste prevention

The goal of maintaining accurate knowledge of legislation, regulations and other criteria can be achieved in part by systematically maintaining a communication network with the agencies responsible for the relevant issues. In the case of waste management, the Queensland Department of Environment and Heritage Protection is the lead agency. Other State agencies of relevance include the Department of Natural Resources and Queensland Health. Commonwealth agencies that may publish relevant criteria include Environment Australia, the Australian and New Zealand Environmental Conservation Council, and the National Health and Medical Research Council.

Council has adopted a Waste Management Strategy designed to meet the targets established by the Queensland Government. Proactive communication with these organisations will help ensure new criteria are identified at an early stage. Once the new criteria have been identified, it can be incorporated into the Waste Management Strategy and Council's Waste Prevention Program through review and internal audit procedures. Review of the current practices in the waste management industry will be an ongoing process. Information regarding the current practices in the waste management industry will be obtained from various sources including:

- professional societies, e.g. WMAA, AWWA, IEAust, EIMAA;
- journals, e.g. Waste Disposal and Water Management in Australia, Waste Management and Environment;
- waste industry source books (published annually);
- telephone interviews with selected manufacturers, suppliers and users.

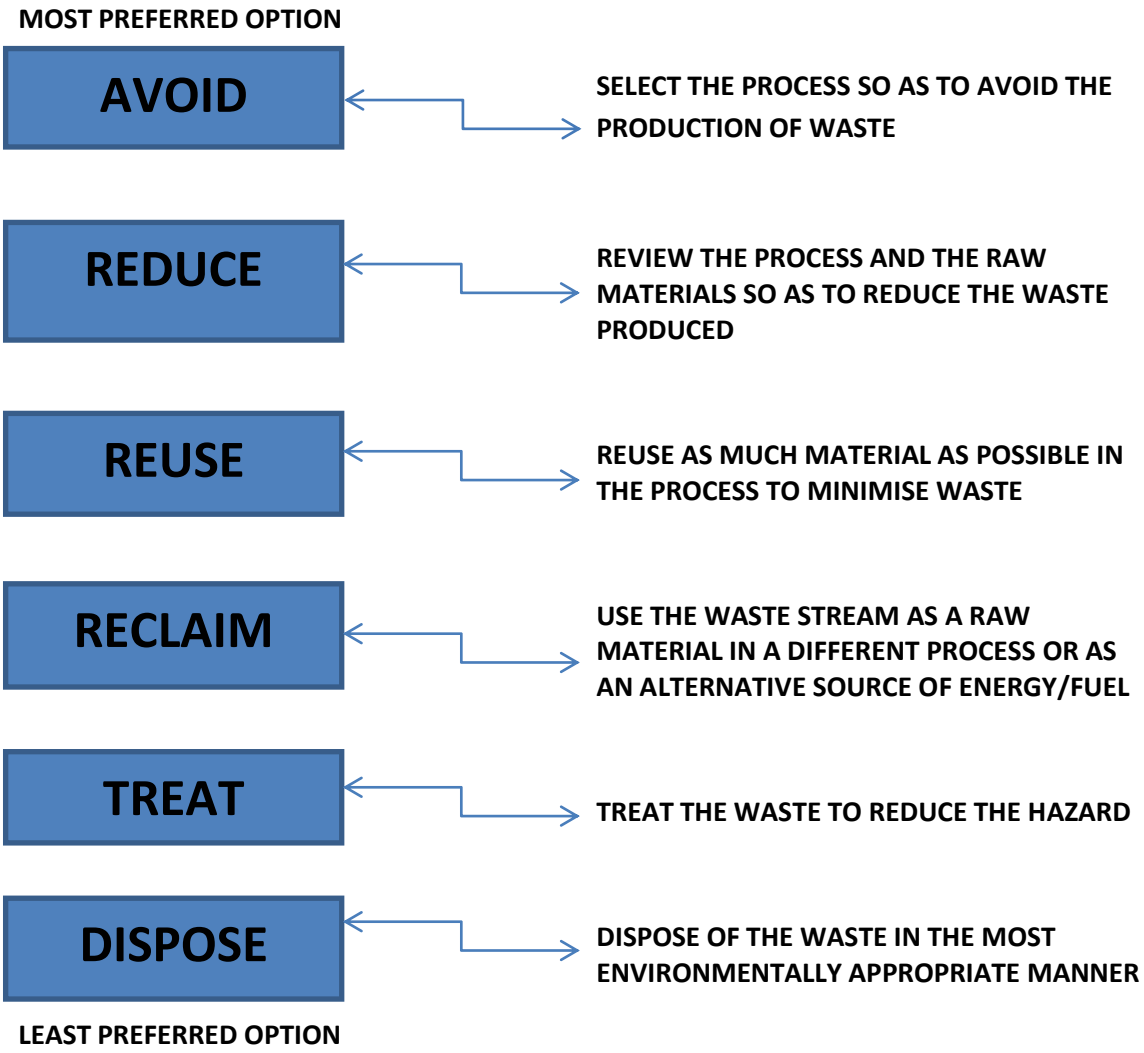


Figure 2.2 WASTE MANAGEMENT HIERARCHY

Implementation and review

Continual improvement is one of the cornerstones of the IEMS. Improvements in waste management will occur by using the same techniques that will be employed for environmentally relevant activities. These techniques include specific investigations, formulation of programs, auditing and review. Benchmarking for waste generation, waste stream type, recycling and seasonal effects will provide data for future comparisons. After the implementation of the Waste Management Strategy and the Council's Waste Prevention Program, this auditing and review will occur annually. Benchmarking will be achieved through the use of the checklist/reporting system as monitored through programs such as surveys and audits. A detailed description of the continual improvement system is given in Section 2.4.

2.2.4 Energy management program elements

Benchmarking energy management

A review of historical energy use will familiarise the Waste and Energy Technical Working Group with the existing situation and the scope for improvement. The review may suggest switching pricing structures or other means of implementing conservation programs. Historical data alone is not sufficient to reveal the energy use details. Energy audits provide a means to investigate energy use by specific processes and machines, as well as provide insight into inefficient operations. The audits may identify simple housekeeping and maintenance practices that can to lead to energy savings. For example, clean light fixtures provide better illumination and clean ventilation filters reduce air pressure drop. Payback periods for the replacement of existing equipment with new energy efficient items (particularly high energy use equipment such as pumps and compressors) should also be examined.

After establishing the structure, it should be determined how and where energy is being used. The first step is to have the Operational Supervisor review the existing data for their areas of responsibility. The Operational Supervisor will then audit those areas using a standardised checklist. The audit is followed by an assessment meeting and then the implementation of improvement measures. These tasks form a cyclical program of data review, audit, assessment, planning, implementation and review.

The EHO will design the final structure of the audit program, and the following section provides sufficient information to start developing specific checklists.

Energy audits

The Operational Supervisor will conduct the audits for their areas and prepare a report to document the findings. The checklists will include the identification of energy management opportunities. The EHO will review the draft audit report prior to finalisation. When the audit reports have been completed, a meeting of all Operational Supervisors should be convened to discuss the results, prioritise opportunities, and develop and schedule future tasks. The Coordinator will prepare a report for a review by the Waste and Energy Technical Working Group followed by presentation to Council. The audits will consider:

- energy entering the site
- energy distribution
- energy consumption
- energy leaving the site
- internal energy generation, reuse or recirculation.

Energy includes electricity, fuel, oil, natural gas, steam, chilled water and compressed air. Important survey items include:

- lighting–unnecessary use, excessive levels in stairwells, unused areas, parking areas;
- HVAC–extreme thermostat settings, filter maintenance, system capacity;

- process areas–heat losses, inadequate insulation, compressed air losses, lubrication, verify the need for equipment, use of pinch technology;
- electrical and special equipment–continuous operations, demand control, capacity;
- water–pumping capacity, pump efficiency, head losses;

After the first round of audits, some areas may have been identified as needing a detailed series of measurements. Instruments are available for the measurement of electrical power as well as thermal, mechanical and flow measurements.

Implementation and review

Improvements in energy management will occur by using the same techniques that will be employed for environmentally relevant activities. These techniques include specific investigations, formulation of programs, auditing and review. Benchmarking of energy use will provide data for future comparisons. After the implementation of an Energy Management Plan, this auditing and review will occur annually. Benchmarking will be achieved through the use of the checklist/reporting system as monitored through programs such as surveys and audits. A detailed description of the continual improvement system is given in Section 2.4.

2.3 ENVIRONMENTAL TRAINING

2.3.1 Introduction

EHP requires that an IEMS submission details how the applicant proposes to manage the environmental impacts of their activities. In particular, an IEMS must address *staff training and awareness of environmental issues*. This section outlines the steps to be taken to formalise the training process and demonstrate compliance under the EPA.

2.3.2 Approach

Blackall Tambo Regional Council staff and contractors, as appropriate, will receive training on a variety of topics, including:

- the implications of the EPA on their work practices
- general environmental awareness
- identification of potential environmental harm
- reporting measures and notification procedures for potential environmental harm
- the general environmental duty/duty of care
- Council's environmental policy.

Future training may also address:

- specific performance objectives for ERAs
- routine environmental control procedures
- emergency response procedures.

The level and method of training should be commensurate with each individual's role and responsibilities. Training techniques may vary from on-the-job instruction to a formal certified course, as is most appropriate to the subject matter.

The basic training in environmental issues and awareness will be incorporated into the standard induction course. A copy of Council's environmental policy, a summary of general environmental duties and other supporting documents will be included in an employee's induction kit.

Council will maintain records of environmental training sessions courses and conferences. Specific environmental duties may be written into individual job descriptions, and may be included in routine employee appraisals.

2.3.3 Training priorities

Table 2.1 presents an indication of the types of environmental training, together with the intended audience.

Table 2.1 Indicative environmental training priorities

	Councillors	Managers	Supervisors	ERA Employees	Non-ERA Employees
Overview & Policy	High	High	High	High	High
Due Diligence	High	High	High	High	Medium
Principles of the IEMS	Low	High	Low		
Environmental Programs	Low	Low	High	Low	Low
Site Based Management Plans		Low	High	High	
Operational Procedures, Emergency Response Procedures			High	High	Low

2.3.4 Technical training options

This section presents a selection of environmental training courses that are regularly offered by professional bodies within Australia. The selection is not comprehensive, as new courses are offered each year. Council will assess relevant external training courses as appropriate, and correlate the course outlines with the training requirements of individual personnel. Council will update the list of available training courses and contact details on an annual (minimum) basis.

Conferences and seminars will also play a role in Council's environmental training program as appropriate. The organisations listed below also offer a range of conferences and seminars throughout the year.

Most training courses offer certificates of accreditation on the successful completion of the program.

The Association of Professional Engineers, Scientists and Managers, Australia

- Risk Management Skills
- Environmental Management
- Benchmarking
- Best Practice Management.

National Association of Testing Authorities, Australia (NATA)

- Understanding the ISO14000 Series
- Implementing an Environmental Management System.

Australian Water and Wastewater Association (AWWA)

- Hazardous and Solid Wastes.

Quality Assurances Services (QAS)

- Documenting a Quality System
- Internal Auditor Training
- Quality Management in Purchase and Supply
- Continual Improvement.

Australian Association for Environmental Education (AAEE)

- Sustainable Development
- Landcare Management.

Sustainable Energy Industries Council of Australia (SEICA)

- Meeting the Energy Challenge
- Sustainable EnergyRus.

Australian Centre for Cleaner Production (ACCP)

- Waste Minimisation and Management.

Other Potential Training Options

- Institute of Engineers of Australia (IEAust)
- Clean Air Society of Australia and New Zealand (CASANZ)
- Environment Management Industry Association of Australia (EMIAA)
- Water Industry Education and Training Association (WIETTA)

- Local Government Association of Queensland (LGAQ)
- Environmental Employment Strategies Australia
- Lloyd's Register Advisory Service

2.4 AUDITING AND CONTINUAL IMPROVEMENT

2.4.1 Overview

Periodic review of the IEMS is required to determine if the system has been properly implemented, conforms to its original intent and purpose, and is still representative of Council's Policy and activities.

The implementation of a continual review and improvement process is also a primary objective of best practice environmental management and the ISO14000 Environmental Management Series. The first stage will comprise a systematic audit of the specific environmental controls and procedures detailed in the IEMS and SBMPs. The review will determine the progress made towards implementation and assess the degree of compliance.

The second stage will involve a review of the overall direction and focus of the system. For example, the Environmental Policy will be reviewed, along with any changes in Council's organisational structure.

2.4.2 Environmental audits

Prior to the development of the IEMS, Council did not have a formal environmental management system. As an initial step, preparatory environmental reviews and environmental audits were conducted at Council's ERAs to determine the current status of the operations.

The audit objective was to identify the environmental aspects associated with ERAs, and evaluate which aspects may have environmental impact. The audit and evaluation process addressed:

- environmental concerns:
    - the scale of the impact
    - the severity of the impact
    - probability of occurrence
    - duration of impact;
- management concerns:
    - potential regulatory and legal issues
    - cost and difficulty of changing the impact
    - effect of change on other activities and processes

- concerns of interested parties
- effect on the community perception.

Under Section 42 of the Environmental Protection (Interim) Regulation, Council is required to address environmental audits. The audit proformas and checklists for Council's initial internal audits are provided in an appendix. Following the review of the initial audit, these checklists will be modified to focus on questions on issues that may change between audits.

The initial internal environmental audits of Council's ERAs will be conducted over a one year period and will be completed within two years of IEMS approval. Information will be obtained from a variety of sources as appropriate, including:

- Site Based Management Plans
- site inspections
- interviews with on-site staff
- updates of site layout plans or process flow diagrams
- site logbooks
- complaints registers
- any environmental notices
- environmental monitoring data
- specific licence conditions
- staff training programs
- any additional environmental studies undertaken.

The audits will be carried out with reference to ISO14010—Guidelines for Environmental Auditing–General Principles. The audit findings will be structured to reflect the programs identified in each individual SBMP and incorporated in an annual return to the EHP. The internal audit program will be augmented by external audits.

2.4.3 Scheduling

Council will adopt a staged approach to the conduct of both the environmental and systems reviews. This will ensure a more efficient use of Council resources. An audit schedule will be developed and distributed to the SBMP Supervisor. The Supervisor will be responsible for ensuring the relevant data and personnel are available at the scheduled time. Audits will have been completed for the IEMS, landfills, wastewater treatment plant and depots within two years of EHP approval of the IEMS.

2.4.4 Compliance assessment

The compliance assessment will be conducted in parallel with the environmental audits. The purpose of the compliance assessment is to compare the data collected through the environmental audits with the criteria in the licence conditions (or Environmental Management Program). This will determine each ERA's degree of compliance with each specific objective.

The assessment criteria may include:

- licence conditions specified in the environmental authority;
- targets and performance objectives established in individual SBMPs;
- the EPA, subordinate legislation and standard criteria;
- relevant Australian Standards;
- Best Practice Environmental Management practices for each ERA;
- any additional Commonwealth, State or Local government plans, standards or agreements.

If incidents of non-compliance are identified, a report will be completed by the SBMP Supervisor for submission to the EHO. If the incident is determined to have the potential for environmental harm, a report will be forwarded by the EHO to EHP.

2.4.5 Systems review

The overall performance of the IEMS structure and its supporting programs will be reviewed. The assessment will determine the effectiveness and suitability of systems under the IEMS and identify opportunities for improvement. This may include:

- waste prevention
- energy management
- environmental training
- community consultation
- roles and responsibilities
- lines of communication
- reporting procedures
- resource allocation
- standard operating procedures
- emergency procedures.

The impetus for improvement should be drawn from:

- changes in Council policy or direction
- Council's experience of operating within the IEMS
- changes in Council operating procedures
- best practice environmental management
- relevant Commonwealth or State Legislation or other criteria
- changes in licensing conditions
- community expectations
- additional studies undertaken with reference to Council's activities.

Any agreed refinements made to the IEMS will then become the criteria against which Council will be assessed in future audits.

APPENDIX A

BLACKALL TAMBO REGIONAL COUNCIL

WASTE WATER TREATMENT

SITE BASED MANAGEMENT PLAN

TABLE OF CONTENTS

1 Introduction

This Site Based Management Plan (SBMP) addresses Blackall Tambo Regional Council's wastewater treatment ERA's including the Blackall treatment plant, the Tambo treatment ponds and the associated pumping stations.

An environmental audit of the facilities were completed to assist with the development of this SBMP to ensure the wastewater treatment operations remain in compliance with the *Environmental Protection Act 1994* and its supporting legislation, as well as to achieve continual improvement in environmental management.

The SBMP addresses the following issues:

- Air Emissions
- Liquid Effluents
- Waste Management
- Land Management
- Community Concerns
- Use of Resources.

2 Preparatory environmental review and environmental audit summary

2.1 INTRODUCTION

An organisation that does not have an established environmental management system should ascertain its status by means of a preparatory environmental review and environmental audit. The purpose is to identify the environmental aspects of the organisation, and then to evaluate which aspects may have a significant environmental impact. The evaluation process considered:

- environmental concerns:
    - the scale of the impact
    - the severity of the impact
    - probability of occurrence
    - duration of impact;
- management concerns:
    - potential regulatory and legal issues
    - cost and difficulty of changing the impact
    - effect of change on other activities and processes
    - concerns of interested parties and the community.

The evaluation was used to develop environmental management programs. The identification and evaluation addressed the following environmental aspects:

- air emissions
- liquid effluents
- waste management
- land management
- community concerns
- use of resources.

The following six sections examine the environmental aspects for Blackall Tambo Regional Council's wastewater treatment systems as observed during the preparatory environmental review and environmental audit.

2.2 AIR EMISSIONS

The most significant air emission is odour, and the major odour emission sources include:

- the inlet works
- screening and grit removal
- trickling filters
- open air digesters
- activated sludge works
- sludge drying beds.

2.3 LIQUID EFFLUENTS

Liquid effluents include stormwater, wastewater generated on-site and the treated effluent.

The effluent is tested daily at a number of points within the process and is reported to be of consistent quality and within the required licence limits.

Development and implementation of a Stormwater Management Plan is an objective of the SBMP. Some on-site stormwater flows are currently discharged to the Barcoo River. The waste water treatment plants are not significantly affected by stormwater runoff from adjacent sites as they are protected with surface water diversion barriers.

2.4 WASTE MANAGEMENT

The waste water treatment plants are not currently operating under a formal waste management program. Several waste streams are segregated on-site, but do not necessarily undergo independent disposal. The following presents a summary of these waste streams.

Waste Stream	**Disposal**
Screening waste	landfill
Chemical containers	landfill
Domestic waste	landfill
Grit on-site	burial
Spent absorbent	landfill

2.5 LAND MANAGEMENT

It is anticipated that some areas of the site may contain elevated levels of heavy metals (e.g. zinc, lead, manganese and chromium) typical of sewage sludge. Other than the on-site burial and sludge storage areas, there are no known potential areas of land contamination.

2.6 COMMUNITY CONCERNS

Community concerns include noise, odour, perceptions of risk and visual amenity.

Noise emissions from the waste water treatment plants may arise from the operation of on-site plant and equipment, including:

- pumps
- air compressors
- lawn mowers
- on-site vehicles.

Excessive noise levels were not noted during the site audit. Given that the site is relatively isolated from residential and community areas, noise impacts are not considered significant.

Environmental incidents are recorded in a daily diary by the site operator and this data is transposed into monthly reports.

3 Action plan

3.1 OBJECTIVES

The primary objectives of the SBMP action plan include:

- develop and implement practical and achievable programs for the management and operation of TCC's Wastewater Treatment and pumping stations to ensure compliance with, and where possible exceed, the environmental requirements;
- provide State Government authorities with a framework to assist in the assessment of the effectiveness of policies and practices;
- provide evidence of environmental due diligence;
- provide community confidence in the intentions and ability of TCC to manage the operation of the wastewater treatment ERA in an environmentally acceptable manner.

The structure of the SBMP is based on Department of Environment & Heritage Protection guidelines and includes the following components for each environmental aspect category, such as air emissions or use of resources:

Objectives:	The operational objectives that guide the strategies and tasks.
Performance Indicators:	The results or products relating to the objective.
Performance Targets:	Auditable goals to assess and measure the level of achievement relating to the performance indicators and target completion dates.
Strategies:	The action plan to achieve the objectives, consisting of tasks, outcomes, responsibilities, implementation schedule and references to interconnected programs.

3.2 ROLES, RESPONSIBILITIES AND REPORTING

The responsibility for IEMS performance involves staff at all levels of the Blackall Tambo Regional Council. The CEO and elected Councillors are ultimately responsible for the implementation and continual improvement of the IEMS. An IEMS Committee will be formed, based on Council's Executive Team including the Managers of the relevant operational branches.

The Integrated Environmental Management System is managed by the Environmental Health Officer (EHO). The EHO is the main contact for Department of Environment and Heritage Protection on aspects of the IEMS. All external SBMP reporting will be approved by the EHO. A full annual review and report on the implementation, compliance with and improvement of the SBMP, will be prepared by the EHO for submission to EHP. The EHO will report to the IEMS Committee and to the elected Councillors on IEMS issues.

The officer responsible for the overall management and implementation at the ERA level is the SBMP Supervisor (eg Works Supervisor). The SBMP Supervisor reports to the EHO on IEMS issues.

SBMP Supervisors are responsible for compiling the relevant data for documenting environmental compliance and due diligence. SBMP Supervisors will maintain the system for record-keeping and will forward relevant information to the EHO. The minimum frequency of reporting is quarterly. An annual summary will be prepared by each SBMP Supervisor to assist the EHO with the annual return submission to the EHP. All external environmental management reporting will be approved by the EHO.

The SBMP Supervisors will appoint Delegated Personnel from within existing staff to conduct the routine actions specified under the SBMP. The Delegated Personnel may be operators or technical officers with experience in the operation and management of their particular ERA. The nominated Delegated Personnel will report to the SBMP Supervisor. It is feasible that the role of Delegated Personnel can be combined with the role of the Site Safety Officer.

The Delegated Personnel will compile the raw data (e.g. analyses, inspection checklists, energy consumption), assess its validity and provide it to the SBMP Supervisor.

The Delegated Personnel are responsible for ensuring that the required inspections, monitoring and recording of data, as specified in the SBMP are undertaken. The Delegated Personnel may choose to delegate some activities; however, all such delegations must be documented, responsibilities clearly stated and staff authority levels approved by the appropriate SBMP Supervisor.

Under the general environmental duty, all personnel and the public have a responsibility to prevent and minimise environmental harm. For Council personnel, this will include at a minimum reporting environmental incidents to a Delegated Personnel.

The Delegated Personnel are responsible for recording the date, time and nature of any non-conformance events or infringements and reporting this to the appropriate SBMP Supervisor. A report on significant environmental incidents will be prepared by the EHO.

The EHO is responsible for notifying EHP in the event of a significant environmental incident. Where the potential for environmental harm from an incident is considered significant, notification should be an *Environmental Protection act 1994,* Section 101 'Program Notice'. The submission of a program notice provides a degree of immunity from prosecution for the incident and commits Council to prepare and submit a program to ensure non-conformances are brought back to compliance.

3.3 ACTION PLAN TABLES

The following action plan tables address:

- general approach
- air emissions
- liquid effluents
- waste management
- land management
- community concerns
- use of resources.

General Approach for Environmental Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
This SBMP and its component strategies will be implemented as part of Blackall Tambo Regional Council's IEMS.	• Annual environmental audits.	• Implementation of SBMP on IEMS approval. • Annual audit from IEMS approval.
Ensure employees are aware of their obligations under the *Environmental Protection Act 1994*.	Percentage of employees aware of regulatory environmental requirements.	100%

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Maintain existing data collection systems including; (a) power consumption; (b) effluent discharge rate and quality; (c) sludge production rate and quality; (d) offsite sludge disposal; (e) chemical usage; (f) mechanical/electrical faults or malfunctions.	A base of information that will assist in cost effective operations with minimum effect on the environment.	SBMP Supervisor, EHO	Ongoing
Review data collection system.	Reliable data.	SBMP Supervisor	Annually
Establish a standardised complaints registration system.	Higher standard of service to the public and a reduction in complaints.	All staff	
Staff training to address duty of care and requirements of the EPA.	Help satisfy obligations under the EPA. Improved environmental performance.	SBMP Manager	Within 1 year of IEMS approval

Air Emissions

OBJECTIVES

Goal	Performance	
	Indicator	Target
Nuisance odours and dusts will be minimised.	Complaints handling system. Onsite personnel.	No legitimate complaints received.

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Develop an Odour Management Plan to address: (a) sludge drying beds; (b) point source odour emissions; (c) identification of fugitive odour sources; (d) review of odour treatment options.	Odour Management Plan.	SBMP Supervisor, EHO	Within three years of IEMS approval.
Staff training to address potential environmentally hazardous incidents and appropriate responses.	Safe operations. Improved environmental responses.	SBMP Supervisor, EHO	Training will occur in a three-year program commencing within one year of IEMS approval.
All complaints regarding air quality shall be investigated, rectified if possible, and recorded on the complaints register.	Odour management system.	All staff	When required.
Staff training to address duty of care and requirements of the EPA.	Help satisfy obligations under the *Environmental Protection Act 1994*. Improved environmental performance.	SBMP Manager	Within 1 year of IEMS approval.

Liquid Effluents

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Minimise the potential for contamination of the on-site stormwater system by operational wastes.	Number of spills or contamination incidents.	Ongoing

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop a Stormwater Management Plan for the STP to address: (a) identification and mapping of stormwater drains and discharges; (b) diversion of stormwater around potentially contaminated areas; (c) monitoring of offsite stormwater discharges.	A site specific Stormwater Management Plan.	SBMP Supervisor, EHO	Within two years of IEMS approval.
Ongoing staff training in the management of environmentally significant incidents including sludge handling, spill prevention and control.	Prevention and good management practices for spills.	SBMP Supervisor, EHO	Within one year of IEMS approval.

Waste Management

OBJECTIVES

Goal	Performance	
	Indicator	Target
Minimise the volume of waste produced on-site.	Extent of environmental impacts from operational wastes.	Nil

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Develop a Sludge Management Plan for the STP to address: (a) monitoring of sludge generation rates and quality; (b) segregation of wet/dry sludges, aged/new sludges; (c) documentation of offsite sludge disposal; (d) review of alternative sludge reuse options; (e) establishment of appropriately controlled sludge stockpile areas.	Site specific Sludge Management Plan.	SBMP Supervisor, EHO	Within one years of IEMS approval.

Land Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Prevent contamination of sites and their surrounding environs through Council activities.	Number of contaminated sites or contamination events.	Nil contaminated sites or contamination events.
Achieve remediation for any on-site areas identified as contaminated.	Number of contaminated sites requiring remediation.	As required.
Minimise or prevent erosion of the sites and the surrounding environs.	Extent of erosion.	No erosion.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop a Spill Control Plan to address: (a) installation and maintenance of spill control equipment; (b) storage and handling of dangerous goods and hazardous wastes; (c) potentially contaminating activities to be conducted in sealed and covered areas; (d) operator training in spill control techniques.	Site Specific Spill Control Plan.	SBMP Supervisor, EHO	Within one years of IEMS approval.

Community Concerns

OBJECTIVES

Goal	Performance	
	Indicator	Target
Minimise noise impacts on the surrounding areas.	Number of complaints received.	No complaints.
Maintain a good visual amenity at the STP site.	Number of complaints received.	No complaints.
Address all complaints in a diligent manner.	Percentage of complaints finalised.	100%

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Maintain a complaints register.	Public query record.	SBMP Supervisor, EHO	Ongoing
Implement a response program to address valid community concerns.	Level of service.	SBMP Supervisor, EHO	Ongoing
All maintenance activities will be conducted within standard operating hours, were possible.	Minimise cost and disruption.	Activity Manager	As required

Use of Resources

OBJECTIVES

Goal	Performance	
	Indicator	Target
Conserve water and reduce water demand.	Per capita consumption.	300 litres/day/person
Achieve efficient energy use.	kW hrs / ML treated.	To be defined

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Implement and monitor Council's water conservation program.	Waterwise community.	SBMP Supervisor, EHO	Ongoing
Benchmark fuel and chemical use in each work area.	Resource use database. Develop quantified goals for resource conservation.	SBMP Supervisor, EHO	Ongoing
Undertake an energy audit of each Sewage Treatment System.	Awareness of energy usage patterns.	SBMP Supervisor, EHO	Annual

APPENDIX B

BLACKALL TAMBO REGIONAL COUNCIL

WORKS DEPOTS

SITE BASED MANAGEMENT PLAN

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1 Introduction

This Site Based Management Plan (SBMP) addresses Blackall Tambo Regional Council's Works Depots. A preparatory environmental review and environmental audit was conducted to assist with the development of this SBMP. Based on the audit findings, this SBMP was developed to help the Depots comply with the *Environmental Protection Act 1994*, and to achieve continual improvement in environmental management.

2 Site activities

2.1 ENVIRONMENTALLY RELEVANT ACTIVITIES

The preparatory environmental review and environmental audit identified activities that warrant the consideration of the following ERA categories:

Blackall — potential ERAs

Part	ERA
8(a)	Petroleum Product Storage
18	Boiler Making or Engineering
21	Motor Vehicle Workshop

Tambo — potential ERAs

Part	ERA
8(a)	Petroleum Product Storage
18	Boiler Making or Engineering
21	Motor Vehicle Workshop

The depots do not meet the minimum thresholds for some ERAs, including petroleum product storage and Boiler making.

All activities will be assessed in future audits of the workshops to determine whether the status has changed.

3 Preparatory environmental review and environmental audit summary

3.1 BACKGROUND

An organisation that does not have an established environmental management system should ascertain its status by means of a preparatory environmental review and environmental audit. The purpose is to identify the environmental aspects of the organisation, and then to evaluate which aspects may have a significant environmental impact. The evaluation process may consider:

- environmental concerns:
    - the scale of the impact
    - the severity of the impact
    - probability of occurrence
    - duration of impact;

- management concerns:
    - potential regulatory and legal issues
    - cost and difficulty of changing the impact
    - effect of change on other activities and processes
    - concerns of the community and interested parties.

The evaluation will then be developed into the site based management plan (SBMP). The identification and evaluation process was designed to consider:

- air emissions
- liquid effluents
- waste management
- land management
- community concerns
- use of resources.

Detailed site audits of both the Blackall and Tambo workshops were conducted by the Environmental Health Officer.

The following six sections examine the environmental aspects for both of TCC's workshops as developed during the preparatory environmental review and environmental audit.

3.2 AIR EMISSIONS

The depots' predominant sources of air emissions result from fugitive emissions rather than point sources or discharge stacks. The main emissions include:

- vehicle exhausts
- road dusts
- chemical fumes (volatilisation from fuel, solvents, thinners, etc.)
- wood dust from the carpentry works
- odours from emoleum tank.

No complaints from neighbouring residents or businesses regarding air emissions (including dusts and odours) were reported. Air emissions from the workshops are not considered to pose a major environmental risk, but the emissions are addressed in the action plan in Section Four to further minimise impact. Chemical and metal working fumes may pose workplace health and safety concerns.

3.3 LIQUID EFFLUENTS

Stormwater

The topography of the site is such that the majority of surface runoff from the workshops is directed to the existing stormwater collection system. The stormwater discharged includes all runoff from roofed and guttered areas, hardstand, vehicle parking/access ways and open storage areas.

Few areas of the workshops are bunded and a significant spill or leak would flow directly to the stormwater system. There is no separation of oily wastes from the vehicle wash down area. Mixing of chemicals, particularly pesticides and herbicides, is undertaken outside the small storage shed. Any spill resulting from chemical handling would drain to the stormwater system.

Trade waste discharge

Discharges to sewer include standard domestic and sanitary wastes. No trade waste discharges for the workshop were reported. Based on the results of the audit, effluent generated from certain activities undertaken at the depot are not suitable for disposal to the stormwater system. Such wastes should be discharged to the sewer (with possible pre-treatment) or collected for off-site disposal by a licensed contractor. Areas of particular concern include the vehicle and heavy machinery wash downs.

3.4 LAND MANAGEMENT

The external asphalt and hardstand areas were observed to contain significant surface staining, primarily hydrocarbon material. The surface also contained a considerable number of cracks and holes that provide an increased potential for subsurface soil contamination.

Significant layered surface staining was observed around the distillate tank, indicating that spill or leak events had occurred. There is a low risk of erosion from normal depot activities.

3.5 WASTE MANAGEMENT

The workshops have a waste separation program with waste oil, batteries and scrap metal being stored separately for disposal or collection by recycling merchants. Several waste streams are routinely segregated at the depot but are not currently being recycled. These waste streams are disposed at the landfill and include:

- food wastes
- workshop floor sweepings
- oily rags
- packaging material (including chemical containers and excess 200 litre drums)
- spent absorbent material
- paper and cardboard
- aluminium cans.

3.6 COMMUNITY CONCERNS

Community concerns include noise, odours, visual amenity and the perception of risk.

Noise emissions at the depot arise from several primary sources as follows:

- Vehicle traffic (exhaust and road noise);
- Engine testing; and
- Machining operations.

Noise is currently controlled on-site by the following means:

- Maintenance of vehicle exhaust systems;
- Main activities only during standard hours of operation;
- Location of noise producing operations away from residential areas;
- Exhaust silencers fitted to all compressors;
- Engine testing conducted indoors.

No complaints from neighbouring residents or businesses regarding noise emissions were reported. The issue of potential noise pollution arising from the depot's operations is not considered to pose a significant environmental risk.

3.7 USE OF RESOURCES

The depots currently have no formal energy conservation program and only limited energy use data. Data is to be collected and a program developed and implemented as described in Section 4.3.

4 Action Plan

4.1 OBJECTIVES

The primary objectives of the SBMP are:

- to develop and implement practical and achievable programs for the management and operation of Council's workshops to achieve compliance with, and where possible exceed, the environmental requirements;
- to provide State Government authorities with a framework to assist in the assessment of the effectiveness of policies and practices;
- to provide evidence of environmental due diligence;
- to provide community confidence in the intentions and ability of Blackall Tambo Regional Council to manage the operation of the Blackall and Tambo workshops in an environmentally acceptable manner.

The structure of the SBMP is based on EHP guidelines and includes the following components for each environmental aspect category, such as air emissions or use of resources.

Objectives:	The operational objectives that guide the strategies and tasks.
Performance Indicators:	The results or products relating to the objective.
Performance Targets:	Auditable goals to assess and measure the level of achievement relating to the performance indicators and target completion dates.
Strategies:	The action plan to achieve the objectives, consisting of tasks, outcomes, responsibilities, implementation schedule and references to inter-connected programs.

4.2 ROLES, RESPONSIBILITIES AND REPORTING

The responsibility for IEMS performance involves staff at all levels of the Blackall Tambo Regional Council. The CEO and elected Councillors are ultimately responsible for the implementation and continual improvement of the IEMS. An IEMS Committee will be formed, based on Council's Executive Team including the Managers of the relevant operational branches.

The Integrated Environmental Management System is managed by the Environmental Health Officer (EHO). The EHO is the main contact for Department of Environment and Heritage Protection on aspects of the IEMS. All external SBMP reporting will be approved by the EHO. A full annual review and report on the implementation, compliance with and improvement of the SBMP, will be prepared by the EHO for submission to EHP. The EHO will report to the IEMS Committee and to the elected Councillors on IEMS issues.

The officer responsible for the overall management and implementation at the ERA level is the SBMP Supervisor (eg Works Supervisor). The SBMP Supervisor reports to the EHO on IEMS issues.

SBMP Supervisors are responsible for compiling the relevant data for documenting environmental compliance and due diligence. SBMP Supervisors will maintain the system for record-keeping and will forward relevant information to the EHO. The minimum frequency of reporting is quarterly. An annual summary will be prepared by each SBMP Supervisor to assist the EHO with the annual return submission to the EHP. All external environmental management reporting will be approved by the EHO.

The SBMP Supervisors will appoint Delegated Personnel from within existing staff to conduct the routine actions specified under the SBMP. The Delegated Personnel may be operators or technical officers with experience in the operation and management of their particular ERA. The nominated Delegated Personnel will report to the SBMP Supervisor. It is feasible that the role of Delegated Personnel can be combined with the role of the Site Safety Officer.

The Delegated Personnel will compile the raw data (e.g. analyses, inspection checklists, energy consumption), assess its validity and provide it to the SBMP Supervisor.

The Delegated Personnel are responsible for ensuring that the required inspections, monitoring and recording of data, as specified in the SBMP are undertaken. The Delegated Personnel may choose to delegate some activities; however, all such delegations must be documented, responsibilities clearly stated and staff authority levels approved by the appropriate SBMP Supervisor.

Under the general environmental duty, all personnel and the public have a responsibility to prevent and minimise environmental harm. For Council personnel, this will include at a minimum reporting environmental incidents to a Delegated Personnel.

The Delegated Personnel are responsible for recording the date, time and nature of any non-conformance events or infringements and reporting this to the appropriate SBMP Supervisor. A report on significant environmental incidents will be prepared by the EHO.

The EHO is responsible for notifying EHP in the event of a significant environmental incident. Where the potential for environmental harm from an incident is considered significant, notification should be an *Environmental Protection Act 1994,* Section 101 'Program Notice'. The submission of a program notice provides a degree of immunity from prosecution for the incident and commits Council to prepare and submit a program to ensure non-conformances are brought back to compliance.

4.3 ACTION PLANS

The environmental management program for the Blackall and Tambo depots is summarised in the following Action Plans:

- General approach for environmental management
- Air emissions
- Stormwater management
- Waste management
- Land management
- Community concerns
- Use of resources.

General Approach for Environmental Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
This SBMP and its component strategies will be implemented as part of Blackall Tambo Regional Council's IEMS.	• Implemented SBMP. • Biennial environmental audits.	• Upon IEMS approval. • Compliance and continual improvement commencing from IEMS approval.
Ensure employees are aware of their obligations under the *Environmental Protection Act 1994*.	Percentage of employees aware of regulatory environmental requirements.	100%

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Implement and maintain existing data collection systems including: (a) power consumption; (b) waste generation; (c) waste disposal; (d) chemical usage; (e) mechanical/electrical faults or malfunctions.	A base of information that will assist in cost effective operations with minimum effect on the environment.	SBMP Supervisor, EHO	Within one year of IEMS approval
Review data collection system.	Reliable data.	SBMP Supervisor	Annually
Conduct environmental audits. Review, evaluate and improve.	Assessment of SBMP performance.	Audit team and SBMP Supervisor	Within one year of IEMS approval, biennially thereafter
Maintain a standardised complaints registration system.	Higher standard of service to the public and a reduction in complaints.	All staff	System in place to be adopted by depots

Task	Outcome	Responsible Officers	Completion date
Review the complaints register.	Highlight system deficiencies.	SBMP Supervisor	Annually
Train staff to address duty of care and requirements of the EPA.	1. Help satisfy obligations under the EPA. 2. Improved environmental performance.	SBMP Supervisor	Within one year of IEMS approval.

Air Emissions

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Minimise nuisance odours, paint mists, chemical fumes and dusts.	• Complaints handling system. • Observations of onsite personnel.	No legitimate complaints received.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop an air emission management program to: a) identify and briefly assess emission sources, such as spray painting drift; b) assess chemical fumes from storage areas; c) review mitigation options.	A concise document and action plan.	SBMP Supervisor, Safety Co-ordinator.	Within two years of IEMS Approval.
Review dangerous goods storage and handling procedures.	Safe storage and minimum risk of environmental exposure.	EHO	Weekly check
1. Maintain MSDS (Material Safety Data Sheets) system. 2. Develop a spill prevention and control plan. 3. Staff training to address potential environmentally harmful incidents and appropriate responses.	Safe operations. Reduced chance of hazardous gas generation during spill clean-up.	SBMP Supervisor, EHO, Training Co-ordinator	Within one year of IEMS approval.
Maintain records including details of all abnormal air quality observations, potential or actual noncompliance events, corrective action.	Improvement to systems operation, performance monitoring.	EHO	Ongoing
Review the complaints register.	Highlight system deficiencies.	SBMP Supervisor	Annually
Record complaints regarding air quality on the complaints register, investigate and rectify if possible.	Air emission management data. Improved environmental responses.	All staff	When required

Stormwater Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Minimise the potential for contamination of stormwater.	Number of spills or contamination incidents.	Nil
Prevent significant impact from water runoff.	Erosion Sediment transport.	Nil Minimise

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop Stormwater Management Plan for the depots to: (a) identify and map stormwater drains and discharges; (b) assess chemical and waste storage bunding; (c) divert stormwater around potentially contaminated areas; (d) prevent erosion and scour; (e) provide appropriate treatment systems prior to offsite discharge; (f) maintain stormwater infrastructure; (g) conduct potentially contaminating activities in a suitable area (covered areas with sealed flooring); (h) minimise wash water use in clean-up activities.	A concise document and action plan.	SBMP Supervisor	Within three years of IEMS approval.
Develop a spill prevention and control plan, including training.	Operational procedures, training.	EHO, Training Co-ordinator	Within one year of IEMS approval.
Conduct fortnightly site inspections and complete checklist to identify unsuitable operational or storage practices.	Preventative measure.	EHO, Training Co-ordinator	Within one year of IEMS approval.
Maintain log books, to include bunding integrity, potential contamination and erosion issues, corrective action plans and completion dates.	Record of discharges and Associated containment measures.	EHO	Within six months of IEMS approval

Waste Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Benchmark waste generation.	Waste generation rate and total volume of each waste generated.	Rates and volumes to be benchmarked for six months, then reduction targets to be set.
Minimise the impact of waste produced onsite.	Extent of environmental impacts from operational wastes.	Best practice environmental management.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop a waste management plan for the depots to: 1. identify individual waste streams generated onsite; 2. monitor generation rates and quantity; 3. segregate waste streams; 4. document offsite waste disposal and regulated waste transport; 5. establish waste reduction targets; 6. review alternative waste reuse options (e.g. chemical containers); 7. provide appropriate recycling and waste storage areas.	A concise document and action plan.	SBMP Supervisor, EHO	Within one year of IEMS approval.
Maintain records of waste disposal data. Include waste streams, date, disposal and transport costs, disposal site, volume, and contractor.	Accurate tracking data on waste disposal and reuse.	EHO	Within six months of IEMS approval.
Fortnightly site inspection and completion of checklist to identify and record any inappropriate waste handling and storage practices.	Good environmental practice.	EHO	Within six months of IEMS approval

Land Management

OBJECTIVES

Goal	Performance	
	Indicator	Target
Prevent contamination of the depot or surrounding environs.	Number of contaminated sites or contamination events.	Nil contaminated sites or contamination events.
Address any on-site areas identified as contaminated.	Number of contaminated sites requiring remediation.	As required
Minimise and prevent erosion of the sites and the surrounding environs.	Extent of erosion.	No erosion

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Develop a Spill Prevention and Control Plan including: a) install and maintain spill control materials; b) identify storage areas and handling procedures for dangerous goods and regulated wastes; c) conduct potentially contaminating activities in appropriate areas.	Procedures	SBMP Supervisor	Within one year of IEMS approval.
Identify potentially contaminated areas. Assess need for action and/or remediation.	Indication of land use restrictions.	EHO	Within two years of IEMS approval.
Conduct staff training to address contamination prevention, spill prevention and control, reporting requirements and environmental procedures.	Training and Awareness.	SBMP Supervisor	Within two years of IEMS approval.

Task	Outcome	Responsible Officers	Completion date
Inspect site and complete checklist on a fortnightly basis to identify contamination and erosion.	Good environmental practice.	EHO	Within six months of IEMS approval.
Notify EHP of significant contamination events.	Compliance	SBMP Supervisor	As required.
Develop and incorporate environmental procedures into standard operating procedures.	Manual	SBMP Supervisor	Within three years of IEMS approval.
Stabilise and rehabilitate areas of on-site soil erosion.	Land stabilisation.	EHO	As required.
Establish a photographic journal to record site status.	Visual records.	EHO	Annually
Establish site log books, including details of contamination and erosion incidents and any action plans.	History of events.	EHO	Within six months of IEMS approval.

Community Concerns

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Minimise noise impacts on the surrounding areas.	Number of complaints received.	No complaints.
Maintain a good visual amenity.	Number of complaints received.	No complaints.
Address all complaints in a diligent manner.	Percentage of complaints finalised.	100%

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Implement a complaints register and response program to address valid community concerns.	Public query record. Level of service.	SBMP Supervisor	Within six months of IEMS approval.
Conduct activities that may cause nuisance impacts within standard operating hours, where possible.	Minimise cost and potential nuisance.	SBMP Supervisor	As required.
Record abnormal noise observations, nuisance odours, dust generation, vectors, potential or actual noncompliance events and corrective action in the site log books.	History of events.	EHO	As required.

Use of Resources

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Conserve water and reduce water demand.	Water consumption per operational unit.	Benchmark volumes first 6 months, then set target.
Achieve efficient energy use.	Electricity consumption per work area, fuel use.	Benchmark volumes first 6 months, then set target.
Achieve maximum value from chemicals.	Chemical costs and volumes.	To be defined.
Maximise waste recycling.	Recycling volumes.	Benchmark volumes first 6 months, then set target for each waste stream.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Benchmark: 1) water consumption, 2) electricity, 3) fuel, 4) recycling and 5) chemical use in each work area. Develop quantified goals for resource conservation.	Resource use database. Performance targets.	EHO	Within six months of IEMS approval. Targets set in nine months.
Undertake an energy audit.	Assessment of potential savings.	SBMP Supervisor	Biennially
Implement measures for non-essential equipment and lighting to be turned off when not required.	Reduced energy usage.	EHO	Within three months of IEMS approval.
Undertake inventories of chemical storages and wastes.	Waste inventory, Chemical Inventory.	EHO	Annually
Investigate chemical substitution options.	Resource conservation.	EHO	Within one year of IEMS approval.

APPENDIX C

BLACKALL TAMBO REGIONAL COUNCIL

Blackall-Tambo Regional Council

Exploring the past. Innovating the future.

LANDFILL OPERATIONS

SITE BASED MANAGEMENT PLAN

TABLE OF CONTENTS

1 Site description

This Site Based Management Plan addresses Blackall Tambo Regional Council's landfill operations at both Blackall and Tambo. A preparatory environmental review and environmental audit were conducted to assist with the development of this SBMP to ensure the landfill operations comply with the *Environmental Protection Act 1994*, and to achieve continual improvement in environmental management.

2 Operational description

2.1 LANDFILL DEVELOPMENT

The Blackall and Tambo waste disposal facilities are operated by and the responsibility of Blackall Tambo Regional Council. The previous use of the existing landfill sites was Town Common.

Both landfills have been developed as a sequence of excavated cells. Each cell is typically excavated to plan dimensions of 100 m x 50 m, extending to the depth of excavation refusal (typically to 8 m). Soil excavated from each cell is utilised as cover material in the landfilling operation. Waste placement is carried out directly into each cell.

Surface water management is provided by grading cell excavations to limit ponding of water, and construction of outlet points around the site for drainage of surface runoff and ponded water. Despite these measures, ponding of water over the landfill surface may occur following rainfall periods.

2.2 LANDFILL OPERATIONS

The hours of operation are unlimited as the landfill sites are not locked overnight.
Generally, tip users visit the sites during daylight hours.

Blackall Tambo Regional Council is responsible for the day-to-day operation of the site, with Council waste collection operators visiting the sites daily, to monitor the activities onsite.

2.2.1 General landfilling operations

The disposal area possesses distinct landfilling zones as follows:

- Domestic , commercial, construction and demolition waste
- Scrap metal
- Green waste
- Tyres.

Domestic and commercial waste

Domestic waste is generated from the kerbside collection service, which comprises of a 240 litre wheelie bin, provided by Council. The waste is delivered to the Landfill sites and placed within the waste disposal area. The general public also access the landfill areas to deposit waste which typically comprises of garden refuse, white goods and general household rubbish.

Commercial waste

The commercial waste includes waste of a commercial or industrial nature. The waste is delivered to the sites by business owners, building or related contractors and typically includes packaging materials, cardboard, builders' refuse, demolition material and some greenwaste.

Other wastes

In addition to the aforementioned major waste streams, several minor waste streams are also periodically received. These may include:

- contaminated soils
- screenings from the sewage treatment plant
- car bodies.

2.2.2 Landfill management activities

Several management activities are conducted in association with the operation of the Landfills. These include:

- maintenance of litter barriers on the perimeter of the active landfill areas;
- surface profiling to effect release of stormwater through designated drainage points.

2.3 REGIONAL COORDINATION

Council has been in discussions with neighbouring Councils for the purpose of developing options for the operation of a Regional landfill. Regional coordination of waste management should also address issues such as waste acceptance criteria, training and waste transport over Council borders.

Storms may impact on waste management through the sudden generation of a large volume of green waste. Contingency plans to separately process tree branches and other debris would result in the conservation of landfill space.

3 Environmental management

3.1 OBJECTIVES

The primary objectives of this SBMP are:

- to develop and implement practical and achievable programs for the management and operation of the Blackall and Tambo landfills to achieve compliance with, and where feasible exceed, the environmental requirements;
- to provide State Government authorities with a framework to assist in the assessment of the effectiveness of policies and practices;
- to provide evidence of environmental due diligence;
- to provide community confidence in the intentions and ability of BTRC to manage the operation of the landfill in an environmentally acceptable manner.

The structure of the SBMP is based on the Department of Environment & Heritage Protection guidelines and includes the following components for each environmental aspect category, such as air emissions or use of resources.

Objectives:	The operational objectives that guide the strategies and tasks.
Performance Indicators:	The results or products relating to the objective.
Performance Targets:	Auditable goals to assess and measure the level of achievement relating to the performance indicators and target completion dates.
Strategies:	The action plan to achieve the objectives, consisting of tasks, outcomes, responsibilities, implementation schedule and references to inter-connected programs.

3.2 ROLES, RESPONSIBILITIES AND REPORTING

The responsibility for IEMS performance involves staff at all levels of the Blackall Tambo Regional Council. The CEO and elected Councillors are ultimately responsible for the implementation and continual improvement of the IEMS. An IEMS Committee will be formed, based on Council's Executive Team including the Managers of the relevant operational branches.

The Integrated Environmental Management System is managed by the Environmental Health Officer (EHO). The EHO is the main contact for Department of Environment and Heritage Protection on aspects of the IEMS. All external SBMP reporting will be approved by the EHO. A full annual review and report on the implementation, compliance with and improvement of the SBMP, will be prepared by the EHO for submission to EHP. The EHO will report to the IEMS Committee and to the elected Councillors on IEMS issues.

The officer responsible for the overall management and implementation at the ERA level is the SBMP Supervisor (eg Works Supervisor). The SBMP Supervisor reports to the EHO on IEMS issues.

SBMP Supervisors are responsible for compiling the relevant data for documenting environmental compliance and due diligence. SBMP Supervisors will maintain the system for record-keeping and will forward relevant information to the EHO. The minimum frequency of reporting is quarterly. An annual summary will be prepared by each SBMP Supervisor to assist the EHO with the annual return submission to the EHP. All external environmental management reporting will be approved by the EHO.

The SBMP Supervisors will appoint Delegated Personnel from within existing staff to conduct the routine actions specified under the SBMP. The Delegated Personnel may be operators or technical officers with experience in the operation and management of their particular ERA. The nominated Delegated Personnel will report to the SBMP Supervisor. It is feasible that the role of Delegated Personnel can be combined with the role of the Site Safety Officer.

The Delegated Personnel will compile the raw data (e.g. analyses, inspection checklists, energy consumption), assess its validity and provide it to the SBMP Supervisor.

The Delegated Personnel are responsible for ensuring that the required inspections, monitoring and recording of data, as specified in the SBMP are undertaken. The Delegated Personnel may choose to delegate some activities; however, all such delegations must be documented, responsibilities clearly stated and staff authority levels approved by the appropriate SBMP Supervisor.

Under the general environmental duty, all personnel and the public have a responsibility to prevent and minimise environmental harm. For Council personnel, this will include at a minimum reporting environmental incidents to a Delegated Personnel.

The Delegated Personnel are responsible for recording the date, time and nature of any non-conformance events or infringements and reporting this to the appropriate SBMP Supervisor. A report on significant environmental incidents will be prepared by the EHO.

The EHO is responsible for notifying EHP in the event of a significant environmental incident. Where the potential for environmental harm from an incident is considered significant, notification should be an *Environmental Protection Act 1994,* Section 101 'Program Notice'. The submission of a program notice provides a degree of immunity from prosecution for the incident and commits Council to prepare and submit a program to ensure non-conformances are brought back to compliance.

3.3 ACTION PLANS

The environmental management program for the Blackall and Tambo landfills is summarised in the following Action Plans:

- General approach for environmental management
- Air emissions
- Liquid effluents

- Waste management
- Land management
- Community concerns
- Use of resources

General Approach for Environmental Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
This SBMP and its component strategies will be implemented and continually improved as part of Blackall Tambo Regional Council's IEMS. Data will be compiled and kept to facilitate environmental programs.	Audits will be conducted annually from IEMS approval.	Benchmark first 12 months. Clearer understanding of trends, of fewer non-conformances and better environmental performance.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop a Waste Management Strategy.	Long term Strategy.	EHO	Within one year of IEMS approval.
Review data collection system.	A data base will assist in cost effective operation with minimum effect on the environment.	SBMP Supervisor, EHO	Within one year of IEMS approval.
Revise and document the landfill operation program.	Highlight system deficiencies.	EHO	Annually
Train staff to address duty of care and requirements of the EPA.	1. Help satisfy obligations under the EPA. 2. Improved environmental performance.	SBMP Supervisor, EHO	Within one year of IEMS approval.

Air Emissions

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Dust emissions will be minimised.	Visible emissions, dust deposition, dust complaints.	No legitimate dust complaints
Odours will be minimised.	Odour complaints.	No legitimate odour complaints

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Utilise water truck when necessary to minimise dust generation from vehicular traffic.	Reduced dust emissions.	EHO	Ongoing
Establish operational procedures to prevent excessive odour generation.	Standard operational procedures.	EHO	Ongoing
Revise and document the landfill operation program.	Highlight system deficiencies.	EHO	Annually

Liquid Effluents

OBJECTIVES

Goal	Performance	
	Indicator	Target
Prevent significant impact from water runoff on the down-slope environment.	Erosion gullies, sediment laden stormwater.	Nil

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Develop a Stormwater Management Plan · clean water diversion; · ponding / infiltration; · progressive capping; · treatment.	Strategy and action plan.	EHO	Within three years of IEMS approval.

Waste Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Prevent acceptance of waste not suitable for land disposal.	Recyclables to landfill; Hazardous waste to landfill; Illegal dumping.	Maximise recycling and reuse. Minimise co-disposal of hazardous waste. Contribute to regional waste solutions.
Benchmark waste generation and disposal.	Volumes and composition of wastes produced or received.	To be set within one year of Benchmarking.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Develop recycling initiatives.	High rate of recycling.	EHO	Ongoing
Include regional considerations in developing the waste acceptance criteria.	Consultation	EHO	Ongoing

Land Management

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Prevent migration of contamination.	Environmental monitoring.	To benchmark and reduce the downgradient impact.
Minimise or prevent erosion of the site and the surrounding environs.	Extent of erosion gullies.	No significant erosion.
Achieve a beneficial post-closure land use.	Site amenity and utility.	To be set.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Stabilise and rehabilitate identified areas of onsite soil erosion.	Land stabilisation.	EHO	As required
Design and grade intermediate cover and capping to avoid ponding without scouring.	Operational procedure.	EHO	As required

Community Concerns

OBJECTIVES

Goal	Performance	
	Indicator	**Target**
Minimise noise impacts on the surrounding areas.	Number of complaints received.	No complaints.
Maintain good visual amenity.	Photo record.	Continual improvement.
Address all complaints in a diligent manner.	Percentage of complaints finalised.	100%
Monitor community needs and perceptions.	Customer satisfaction levels.	Rating scale to be developed.

STRATEGIES

Task	**Outcome**	**Responsible Officers**	**Completion date**
Maintain a complaints register.	Public query record.	SBMP Manager	Ongoing

Use of Resources

OBJECTIVES

Goal	Performance	
	Indicator	Target
Conserve landfill airspace.	Volume of waste per cell.	Better waste separation.

STRATEGIES

Task	Outcome	Responsible Officers	Completion date
Prepare a landfill development plan.	Sequence of future staging; Utilise onsite material for cover; Store and utilise clean stormwater for dust control.	SBMP Manager, EHO	Within 3 years of IEMS approval.

APPENDIX D

Blackall-Tambo Regional Council

Exploring the past. Innovating the future.

BLACKALL TAMBO REGIONAL COUNCIL

EXTRACTIVE ACTIVITES

SITE BASED MANAGEMENT PLAN

Table of Contents

1.0 Introduction

The activity involves extraction of gravel material from proposed new/old gravel pits and borrows pits adjacent to work area. Extraction of gravel material from borrow pits is used for various purposes within the Region; but mainly for the construction, repair and maintenance of roads within the Region.

The Site Based Management Plan (SBMP) is intended to address the potential environmental issues associated with gravel extraction works and provide details of the action/methodology and monitoring system etc. which are to be used by Blackall Tambo Regional Council and their Contractors.

This document will be continually reviewed, as required under the IEMS, to ensure compliance with all relevant legislation and to provide a structure, which meets and/or exceeds best practice environmental management. The SBMP documents the specific environmental management methodologies that apply to the extraction works.

2.0 Operation of Extraction Sites

2.1 Operation of Extraction

The purpose of these activities is to produce material suitable for road making material (pavement material) for the upgrading of various sections to a sealed pavement. The activities are ERA 16 2(b) - Extracting between 5,000 to 100,000 tonnes of material per year and ERA 16 3(a) Screening, in a year, 5,000 to 100,000 tonnes of material.

2.2 Required Machinery

The required machinery for extraction of gravel pits is shown in Table 8:

Table 8: Details of Required Machinery to extracting gravel.

Type	Operator	Function
Graders	2	Used for ripping material – pushing into stockpiles Used to spread gravel and blend different gravel materials
Excavator	1	Extracting and stockpiling gravel material
Screener	1	Separating and grading material by size
Crusher	1	Crushing material to specific size
Road Trains	2	Hauling material on site and from site to required area
Loaders	2	Loading material from stockpiles to road trains
Water Truck	1	Dust suppressing on site – roads or stockpiles

2.3 Method of Extraction

2.3.1 Extraction from Gravel Pit

The adopted method of extraction is an open cut extraction method. No drilling or blasting will be used for the extraction of the material.

Overburden top soil will be stripped off with bulldozer to approximately 200mm depth (depending on the depth of gravel) and stockpiled to form a maximum 2m high windrow, of slope not steeper than 1:1. Stockpiled top soil will be spread over all disturbed areas for the revegetation process to take place.

Gravel materials will be extracted and pushed up at or near the crusher/screening plants. Generally, depth of gravel extraction will not be more than 1.5m (from undisturbed ground level) and tapering out to the natural surface level. Pit batter will not be steeper than 1:10. The extracted gravel material will be pushed up and stockpiled in a maximum 2m high windrow, of slope not steeper than 1:1. The stockpiled gravel material will be loaded onto the gravel truck with loader and carted to designated work area.

2.3.2 Extraction from Borrow Pit

Overburden top soil will be stripped off with bulldozer to approximately 200mm depth (depending on the depth of gravel) and stockpiled to form a maximum 2m high windrow, of slope not steeper than 1:1. Stockpiled top soil will be spread over all disturbed areas for the revegetation process to take place.

Formation materials will be extracted with scraper within road reserve and carried to the nearby work areas. Generally, depth of gravel extraction will not be more than 1.5m (from undisturbed ground level) and tapering out to the natural surface level. Pit batter will not be steeper than 1:10.

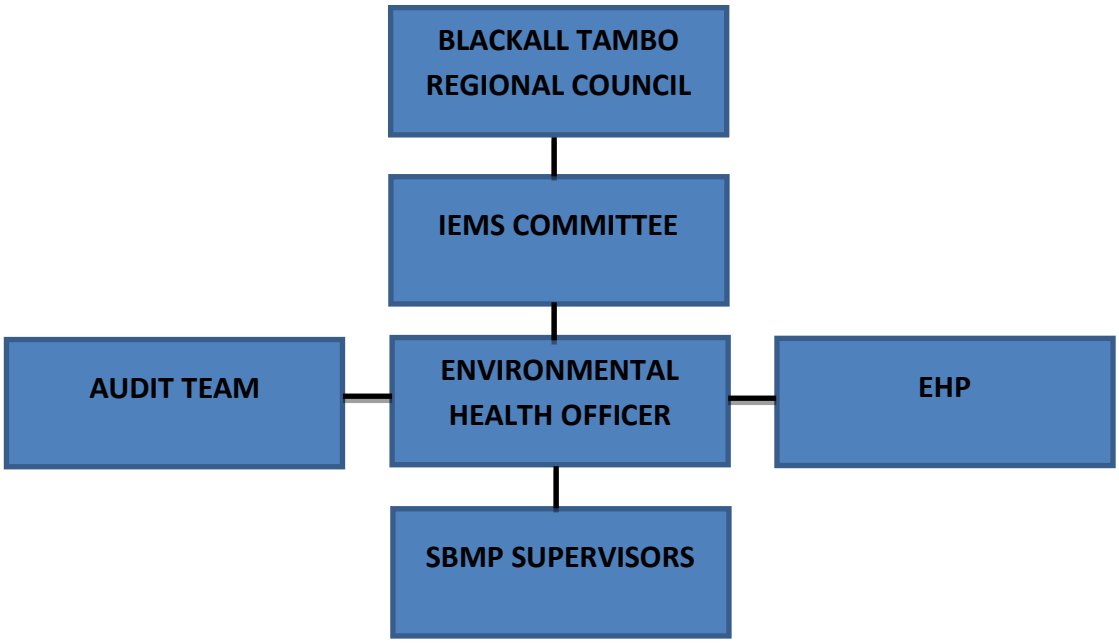
2.4 Operational Hours

Operational hours will be Monday to Saturday, start from 6am to 6pm. There will be no site operations on Sundays or Public Holidays.

2.5 Organisation Structure and Responsibility

The responsibility for IEMS performance involves staff at all levels of the Blackall Tambo Regional Council. The CEO and elected Councillors are ultimately responsible for the implementation and continual improvement of the IEMS. An IEMS Committee will be formed, based on Council's Executive Team including the Managers of the relevant operational branches.

The Integrated Environmental Management System is managed by the Environmental Health Officer (EHO). The EHO is the main contact for Department of Environment and Heritage Protection on aspects of the IEMS. All external SBMP reporting will be approved by the EHO. A full annual review and report on the implementation, compliance with and improvement of the SBMP, will be prepared by the EHO for submission to EHP. The EHO will report to the IEMS Committee and to the elected Councillors on IEMS issues.



2.5.1 Chief Executive Officer (CEO)

The CEO will be responsible for:

- ensuring the maintenance and construction activities comply with the *Environmental Protection Act 1994* and other relevant regulations;
- ensuring the EMP is implemented and continuously improved;
- ensuring the environmental awareness training is conducted.

2.5.2 Manager of Works (MoW)

The Manager of Works will:

- manage the requirements of the Activity Based Management Plan;
- oversee work processes to ensure they are carried out correctly;
- liaise with regulatory agencies regarding requirements for approvals, licences, permits and authorities
- provide training and advice to employees

2.5.3 Works Supervisor

The Works Supervisor will:

- carry out any duties and / or responsibilities as delegated by the MoW/Project Managers as required under Council/State legislation
- assist the EHO in the implementation of the Environmental Management Plan, and the ongoing awareness of environmental issues for the Council Workforce
- assist in the maintenance, monitoring and auditing of the control measures.
- prepare revisions to Activity Based Management Plan for approval
- liaise with regulatory agencies regarding requirements for approvals, licences, permits and authorities
- oversee procurement contracts and works schedules for the project

2.5.4 Environmental Health Officer (EHO)

The Environmental Health Officer (EHO) will:

- be responsible to the CEO for the implementation and operation of the EMP
- in consultation with the Works Supervisor conduct a project site assessment of environmental issues;
- maintain and monitor control measures
- liaise with the Works Supervisor on all matters relating to the environment for the works;
- initiate compliance inspections, tests and measurements in accordance with approved Work Instructions and Checklists , and
- conduct environmental induction and awareness training.

2.5.5 Workplace Health and Safety Officer (WH&S)

The Workplace Health and Safety Officer will:

- carry out safety duties with respect to handling and storage of waste materials or chemicals on the site
- report on any incidents or problems to Council's Manager of Works and;
- provide safety training and advice to employees

2.5.6 Council/Contractor Workforce

The Council Workforce will comply and assist in the implementation and maintenance of measures outlined in the EMP.

3.0 Environmental Management

3.1 Air Emissions

Description	To ensure that the activities do not result in air quality impacts by the unreasonable release of contaminants to the air environment, including odours, dust, smoke or other air contaminants.
Performance Criteria	To minimise the effects of emissions and dust on the environment. To comply with the requirements of the following: • *Environmental Protection (Air) Policy 1997*; • *Environmental Protection Act 1994*; • *Fire and Rescue Services Act 1990*.
Action	All plant and equipment to be regularly serviced and maintained to permit efficient operation and minimise exhaust and fuel emissions targets below the limits set by Australian design rules. Burning will only be allowed on sites where the necessary permits have been obtained, as required under the Fire and Rescue Services Act 1990. Control measures may include: • Regular watering of the site and access roads. • Fitting equipment with dust suppression devices. • Covering loads. • Maintaining clean roadways to and from the maintenance/construction zone. • Ensuring that all work facilities erected at the works are designed and operated to prevent the emission of smoke, dust and other objectionable matter into the atmosphere.
Control Devices	Water carts/sweepers. Regular maintenance of plant and equipment.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Monitoring Procedures	The Works Supervisor shall continuously monitor the effects of dust, vehicle emissions and rectify by implementing the required control measures.
Recording	The Environmental Health Officer shall record any incident or complaint.

3.2 Water Management & Discharge

Description	To ensure activities do not result in environmental harm or nuisance to: • Water bodies adjacent to the site; • Water bodies downstream of the site; and/or • Permanent water bodies within the site.
Performance Criteria	To comply with the water quality provisions of the *Environmental Protection (Water) Policy 1997*.
Action	Any potential affected water bodies and potential 'contaminants' from the work activities to be identified prior to commencing the activities. Control measures may include: • Only essential chemicals, fuels, oils etc, be kept on work sites. • Storage and handling of chemicals on work sites to be in accordance with the requirements of AS1940-1993. • On-site refuelling of vehicles not to be conducted within 30m of a river, creek or floodway to protect drainage channels and watercourses from accidental spillage and/or loss incident. • Spillage kits are to be available and kept on site where necessary. • Spray bars not to be cleaned in drainage lines or in the immediate vicinity of watercourses or on areas prone to erosion. • Spraying should be conducted in such a manner that spray drift into riparian zone does not occur. • Stockpiles are not to be established in watercourses. • Bins and portable ablution blocks to be used.
Control Devices	Approved waste disposal facilities. Spill kits. Rubbish bins and portable ablution blocks.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/ WH&S Officer.
Monitoring Procedures	The Works Supervisor to ensure work activities are carried out as prescribed above.
Recording	The Environmental Health Officer shall record any incident or complaint.

3.3 Erosion & Sedimentation

Description	To ensure adequate erosion and sediment control measures are in place to: • manage erosion and sedimentation within the work zone; and • minimise the impact of erosion and sedimentation particularly stormwater runoff from uphill areas on downstream water quality.
Performance Criteria	To comply with the requirements of the following: • *Environmental Protection (Water) Policy 1997;* • *Vegetation Management Act 1999;* • *Environmental Protection Act 1994.*
Action	Control measures may include: • Maintenance of existing drainage, erosion and sedimentation control measures (existing diversion drains). • Minimising the area of clearing and minimising the extent and duration of soil exposure. • Limit grading to those areas involved in current construction activities. • Divert clean waters from areas of disturbance. • Early installation of permanent drainage measures. • Protect exposed soil surfaces from erosion. • On-site capture of sediments. • Manage topsoils. • Progressive stabilisation and rehabilitation of disturbed areas. • Construction of cross drains and water bars (see Appendix 3).
Control Devices	Temporary structures such as dams and drains, sand bag structures, sediment fences, sediment traps, diversion drains, detention basins, bund walls, balks, vegetation may be required in areas of high erosion potential. Other erosion or sediment controls will be considered that it deems necessary to overcome local problems.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Monitoring Procedures	The Works Supervisor shall continuously monitor the erosion and sedimentation control devices.
Recording	The Environmental Health Officer shall record any incident or complaint (land contamination and water quality issues).

3.4 Waste Management

Description	To minimise the impact of waste on the environment by ensuring rubbish and other waste materials generated as a result of the activities are suitably contained until disposal or reuse.
Performance Criteria	To comply with the requirements of the following: - • *Waste Reduction and Recycling Act 2011*; • *Waste Reduction and Recycling Regulations 2011*.
Action	Control measures may include: • No waste or litter to be burnt or buried on a maintenance or construction site. • Excess materials to be reused, recycled or disposed of at approved locations. • Rubbish bin provided. • Contaminated waste to be kept separate of general waste, and disposed of by appropriately licensed waste carriers in a legally approved location. • All hazardous wastes are to be disposed of in accordance with the requirement of EHP and approvals obtained prior to removal or remediation of contaminated land. • The work site is to be left in a neat and tidy state on completion of the activities.
Control Devices	Approved waste disposal facilities. Rubbish bin.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Monitoring Procedures	The Works Supervisor shall ensure waste is reused, recycled where possible. The Works Supervisor shall ensure waste is disposed of appropriately.
Recording	The Environmental Health Officer shall keep a hazardous waste disposal register.

3.5 Noise

Description	To minimise the noise associated with the activities so as not to cause environmental nuisance or harm.
Performance Criteria	To comply with the requirements of the following: *Environmental Protection (Noise) Policy 1997*; *Environmental Protection Act 1994*.
Action	Possible noise sensitive place in relation to work sites should be considered before commencing activities. Control measures may include: • Machineries shall only be operated within normal working hours. • All plant, machinery and tools should be maintained in good order (according to the manufactures specifications) to reduce engine wear and noise. • All plant, machinery and tools shall be fitted with appropriate silencing equipment as required. • All plant and machinery shall be operated with engine covers installed where possible. • Neighbouring properties to be advised of proposed operations.
Control Devices	Work to be conducted during normal working hours. Silencers/Placement of plant and equipment. Minimise number of machines working at a given time where possible. Machinery to be turned off when not in use.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Recording	The Environmental Health Officer shall record any incident or complaint.

3.6 Contaminated Sites

Description	To identify and manage known and additional contaminants found within work sites so as not to cause environmental nuisance.
Performance Criteria	To comply with the requirements of the *Environmental Protection Act 1994*.
Action	Control strategies: • Notify Works Supervisor and Environmental Health Officer. • Notify Department of Environment & Heritage Protection. • Seek advice from EHP and prevent the spread of contamination.
Control Devices	Remediation of contaminated sites by treatment and/or encapsulation and/or removal and disposal of contaminants. Backfilling of remediated sites with clean fill.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Recording	The Environmental Health Officer shall record the location of all known contaminated sites, including the known contaminates and the proposed remediation actions.

3.7 Flora & Fauna

Description	To take due care not to harm native Flora and Fauna and management of vegetation within work sites.
Performance Criteria	To comply with the requirements of the: - • *Environmental Protection and Biodiversity Conservation Act 1999*; • *Nature Conservation Act 1992*; • *Vegetation Management Act 1992*; and • *Land Act 1994*.
Action	Control measures may include: • Confine activities within the existing footprint where possible. • All trees and shrubs are to be left undisturbed as much as practical. • Hollow logs are to be relocated to an area clear of the work site. • Preserve areas of significant habitat value by clearly marking them prior to works commencing and ensure all on-site staff are aware of the designated exclusion zones. • All native fauna are to be avoided if possible and any fauna found injured are to be reported and taken to an animal carer where possible. • All material cleared and grubbed is to be stockpiled for later rehabilitation of the work site.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Monitoring Procedure	The Works Supervisor to monitor clearing activities. On site staff are to be aware of clearance limits and are required to notify the Works Supervisor of any disturbance or damage outside the designated area.
Recording	The Environmental Health Officer shall record all site reviews undertaken and any incidents.

3.8 Storage & Handling of Hazardous Goods & Fuels

Description	To manage all chemicals and fuels on work sites.
Performance Criteria	To comply with the requirements of the following: • *Environmental Protection (Water) Policy 1997*. • *Workplace Health and Safety Act 1995*. • AS1940-1993 "The Storage and Handling of Flammable and Combustible Liquids".
Action	Control measures may include: • Minor maintenance may be conducted on work site. All oils shall be collected in an appropriate vessel and taken to an approved disposal site. No major maintenance to be carried out on work site. • Refuelling of machinery on site shall conform to the following requirements: o There is no refuelling within 30m of a watercourse or drainage line o Fuelling activity to be supervised at all times o Hose to be fitted with a stop valve at the nozzle end. • A bund wall (in accordance with the requirements of AS1940-1993) will be constructed where refuelling of machinery is by overhead tank. • A hydrocarbon spill kit will be kept on-site and shall be of size/capacity to contain/clean up the volume of chemical and fuels being used on site (in accordance with the requirements of AS1940-1993). • All machinery to be maintained to minimise the leakage of oil, fuel and hydraulic and other fluids. • Petroleum product spills are to be managed as per Appendix 6, "Petroleum Spillage Action Plan".
Control Devices	Hazardous goods to be stored in a bunded enclosure. Fuel to be stored at work sites in purpose built tanks.
Responsibilities	Construction: Works Supervisor Recording: Environmental Health Officer Monitoring: Works Supervisor Auditing: Manager of Works/WH&S Officer
Monitoring Procedure	The Contractor Supervisor shall ensure work activities are carried out as prescribed above.
Recording	The Councils Environmental Representative shall record any incident or complaint.

3.9 Pest Control

Description	Identify the "Declared Plants" and other exotic flora and the containment of these weeds.
Performance Criteria	Reduce the spread of weeds and eradicate "Declared Plants". Comply with the requirements of the *Land Protection (Pest and Stock Route Management) Act 2002*.
Action	Measures should be taken to prevent weed spread on and off work site. Adopt the use of any primary pest management strategy developed under *Land Protection (Pest and Stock Route Management) Act 2002*. Control measures may include: • Investigation to work site prior to the disturbance of the natural surface. • Stockpiling and setting aside weed free topsoil for reuse in site rehabilitation. • Cleaning down machinery (water or compressed air) moving to another area (particularly from a known weed infested area). • Installing or use of vehicle and infrastructure wash down facilities. • Isolating and avoiding infested areas. • Use of chemical control methods for pest plant species. • Burial or isolation of infested soil material.
Control Devices	Pest Management Plan. Wash down bays/areas. Chemical control.
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Monitoring Procedure	After cessation of work from pit site, the rehabilitated pit site shall be checked for weed infestations for at least 6 months.
Recording	The Environmental Health officer shall record all site reviews undertaken and any incidents.

3.10 Rehabilitation

Description	To rehabilitate and encourage the establishment of vegetation on the work site at completion similar to its surrounding undisturbed areas.
Performance Criteria	Reduce the risk of slumping. Minimise the potential for erosion of the site. Establishment of vegetation of same species and density.
Action	Control measures may include: • Stockpile of topsoil and cover to protect the integrity of the root stock. • Reuse the stockpile within 12 months where practical. Use of seeds during rehabilitation. • Use of fertiliser if required to promote vegetation establishment. • All batters to be cut to a slope of not greater than 1:4
Responsibilities	Construction: Works Supervisor. Recording: Environmental Health Officer. Monitoring: Works Supervisor. Auditing: Manager of Works/WH&S Officer.
Monitoring Procedure	A joint inspection of the pit site shall be jointly carried out by the Manager of Works and Environmental Health Officer prior to the expiry of defects liability period, (6 months) to identify any defective works.
Recording	The Environmental Health Officer shall record all site reviews undertaken and any incidents.

3.11 Training

All work personnel shall be given basic environmental awareness training and made aware of the environmental management and protection conditions adopted for the works. Part of the basic environmental awareness shall include responsibilities, environmental management/protection requirements and the environmental harm reporting process.

3.12 Other

Only materials and equipment required for the quarry operation are permitted to be stored on site, and these must not be stored within 40 metres of any watercourse or sediment trap. No dwelling or structure of a permanent nature is to be erected on the pit unless necessary.

4.0 Environmental Incidents

An effective response procedure is necessary to preserve the local environment and minimise any potential impacts to community values and health. The environmental incident reporting procedure is a planning and management tool to assist site personnel on dealing with incidents with the potential to cause environmental harm and/or nuisance. It is designed to identify the steps and actions needed to be taken to respond to these incidents.

In the event of an environmental incident that causes or has the potential to cause serious or material environmental harm, the Manager of Works and Environmental Health Officer shall be advised as soon as possible, but not later than 12 hours. The Environmental Health Officer shall notify the Department of Environment & Heritage Protection in compliance with the legislative requirement under Section 320(1) of the *Environmental Protection Act 1994*.

All activities resulting in environmental harm or nuisance will require investigation with the following key elements being covered:

- Determination of the level of the environmental harm;
- Immediate and long term remedial action;
- Monitoring of remedial action for effectiveness;
- Preventive action(s) to ensure non repetition of the occurrence.

Emergency response procedures include:

- Report to Works Supervisor or relevant officers;
- Clean-up procedures;
- Road closure, traffic management and evacuation procedures;
- Location of storage and disposal of contaminants;
- Contact expert advice or licensed specialist of the handling of the contaminants;
- Investigation.

5.0 Complaint Management

Environmental complaints may be received in relation to the work activities. Complaints made will be directed to the Site Supervisor and recorded in the 'Environmental Incidents and Public complaints Recording Form' then determine what if any action should be taken.

In the event of a registered complaint that requires remedial action, all relevant stakeholders such as the property owner's, Department of Environment & Heritage Protection, Council, Contractors, Department of Natural Resources and Mines shall be notified of the incident and kept informed on any remediation actions taken.

Appendix 1

Quarry Development Plan

The activities at this site will be conducted in the following order:

1. Removal of the topsoil. The timber and topsoil will be stripped off using a loader or grader and stockpiled at predetermined areas of the pit. The topsoil will be stockpiled around the edge of the pit in front of the timber stockpiles so that it can be spread over the pit area, once the gravel removal operation has been completed and then the timber can be spread over the topsoil.

2. Areas for parking of light vehicles, heavy machinery hardstand area, refuelling area and amenities will be constructed. All these areas will be signed as to their purpose.

3. The over burden, which varies in depth will be stockpiled using a loader, dozer or grader to form a bund wall to stop water from outside the pit area, entering the pit area and to form bund walls to direct stormwater from within the pit area into sediment ponds.

4. The haulroad will be constructed with stormwater control devices so that water from the haulroad is either diverted into the pit area or directed into a sediment control device such as a sediment trap. These haulroads will be watered and maintained during the hauling operations.

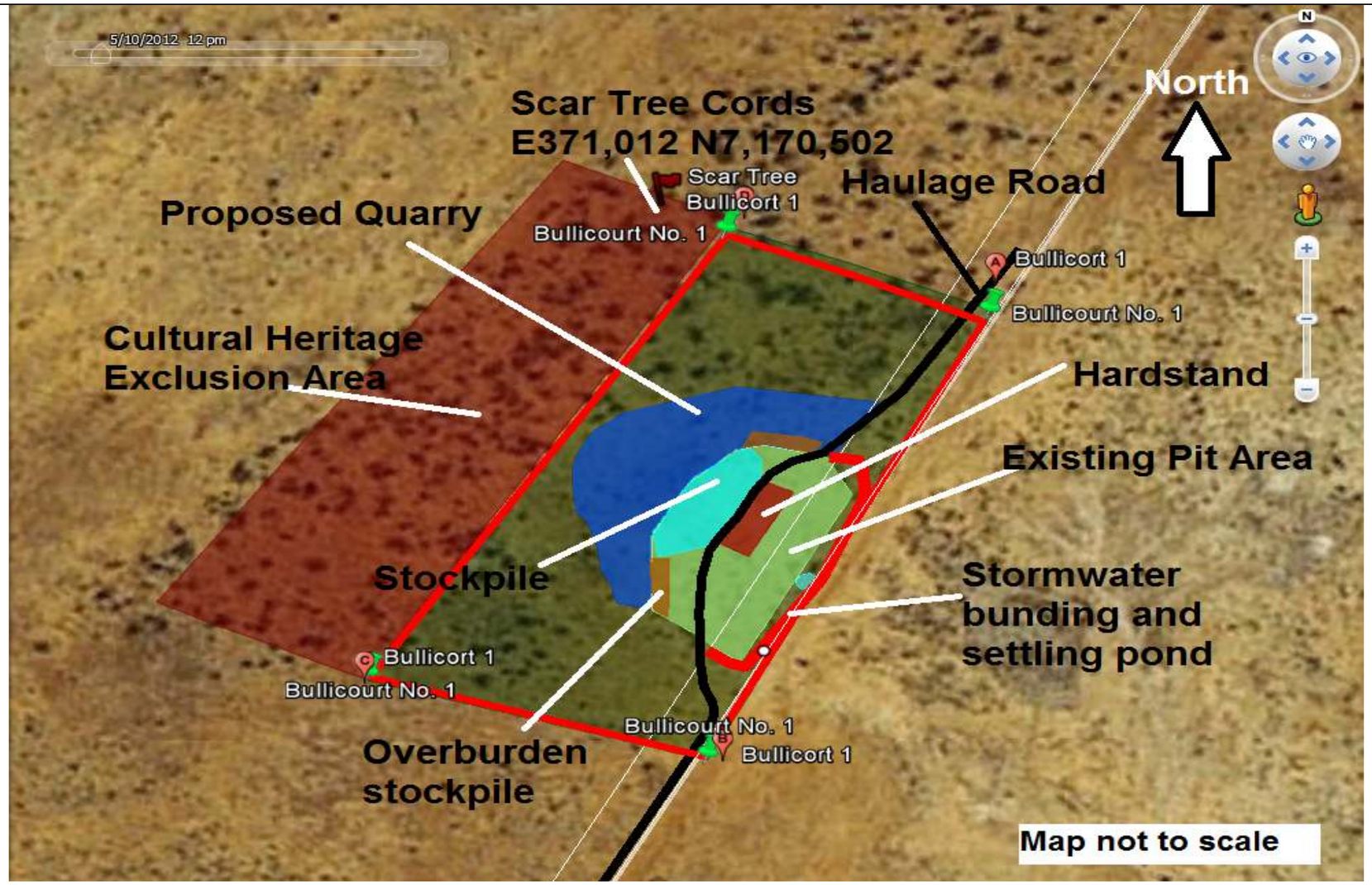
5. The gravel will then be stockpiled with the stockpiles running downhill so that stormwater does not collect and pond against the stockpiles.

6. If required, this gravel will be screened using a 40 millimetre deck. This should produce a material with a “c” grading (from MTRS 11.05 specification). This process will produce a byproduct of material with rock sizes between 40 millimetres and 150millimetres that can be used for environmental, sediment and erosion controls.

7. This screened material will then be hauled to the project site.

8. Each area will be developed and the material removed prior to developing another area. Once the material has been removed from an area, that area and the associated haulroad will be rehabilitated.

Quarry Development Plan Drawing



Pit Boundary Areas: Co-ordinates WGS84 Zone 55J

Bullecourt Pit One

371,266.00mE, 7,223,977.00mN

371,060.00mE, 7,170,000.00mN

370,383.00mE, 7,170,070.00mN

371,071.00mE, 7,170,491.00mN

Red Exclusion Areas: Co-ordinates WGS84 Zone 55J

Bullecourt Pit One

370,933.00mE, 7,170,542.50mN

371,054.00 m E, 7,170,472.00mN

370,783.00 m E, 7,170,070.0mN

370,623.04mE, 7,170,143.46mN

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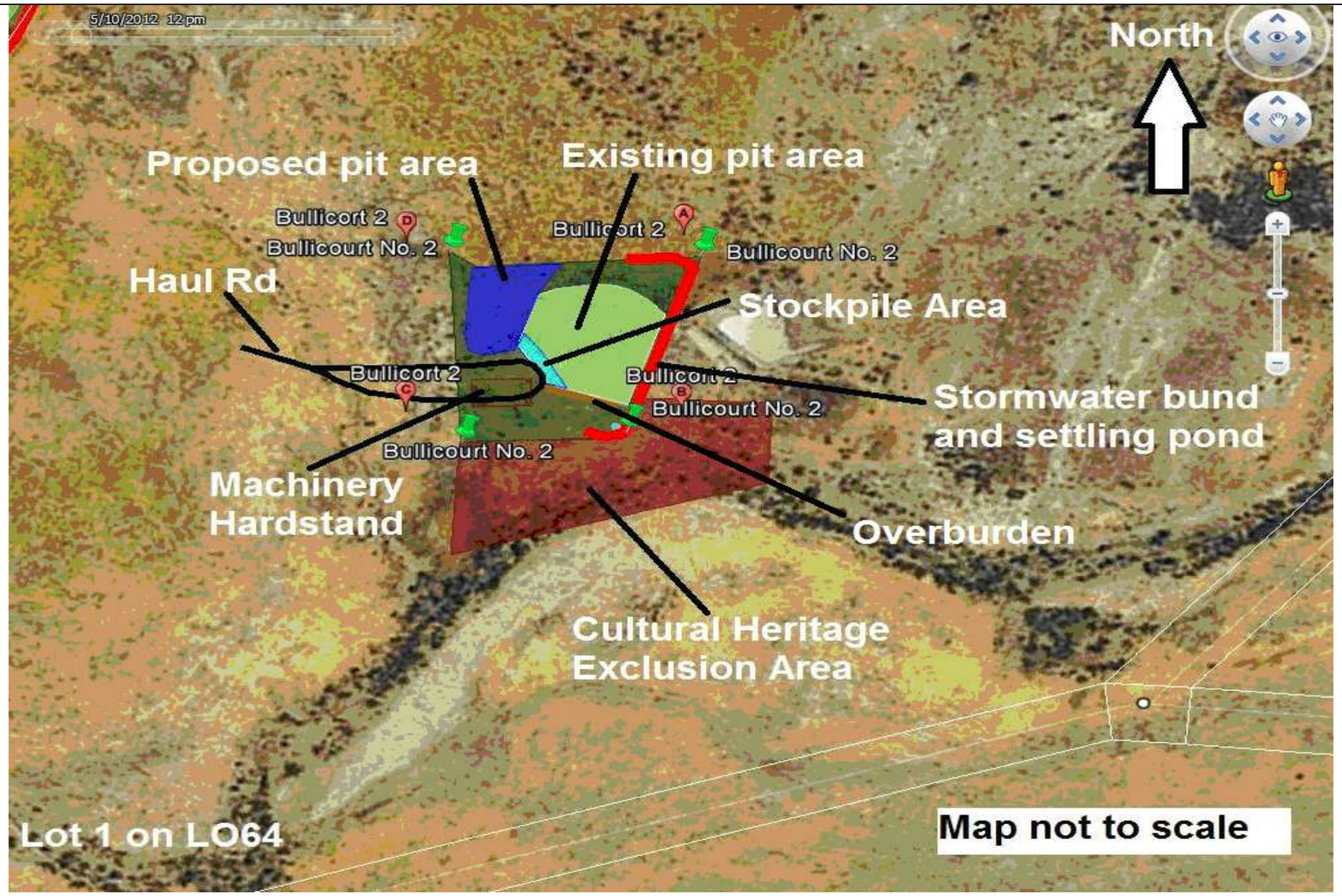
Bullecourt 1 Quarry Operations Plan
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012



Pit Boundary Areas: Co-ordinates WGS84 Zone 55J

Bullecourt Pit Two

371,949.67mE, 7,169,868.86mN

371,864.43mE, 7,196,621.05mN

371,667.00mE, 7,169,604.00mN

371,651.12mE, 7,169,873.72mN

Red Exclusion Areas: Co-ordinates WGS84 Zone 55J

Bullecourt Pit Two

371,667.00mE, 7,169,604.00mN

371,887.78mE, 7,169,669.60mN

371,864.00mE, 7,169,621.00mN

372,037.25mE, 7,169,664.77mN

372,033.11mE, 7,169,555.71mN

371,658.14mE, 7,169,448.31mN

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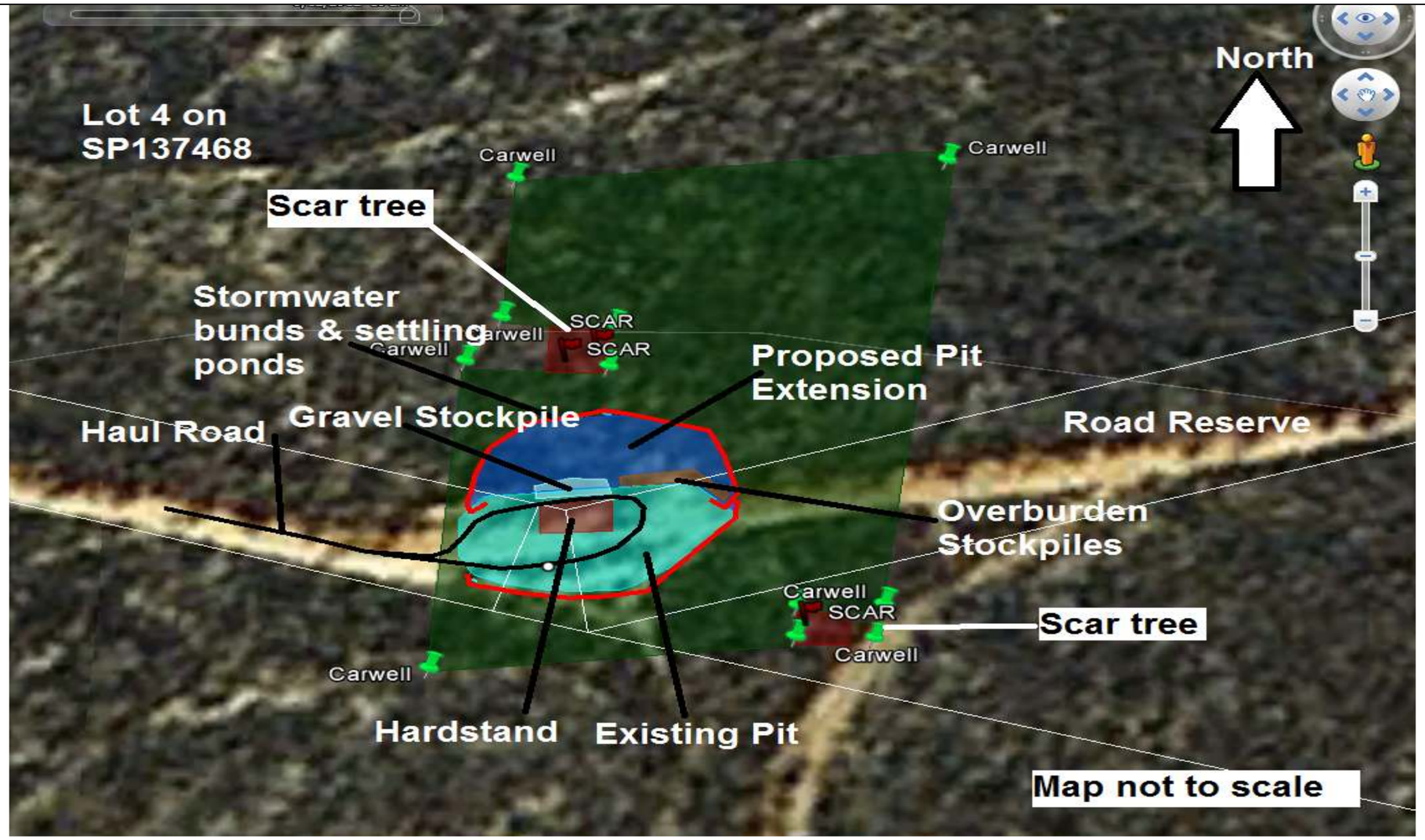
Bullecourt Two Quarry Operations Plan
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012



Sale Boundary Areas: Co-ordinates WGS84 Zone 55J

Carwell Pit Sale Area

Easting	Northing
481,553	7,254,577
481,742	7,254,583
481,525	7,254,305
481,553	7,254,577

Carwell Cultural Heritage Area

Scar tree 1		Scar tree 2	
481,676	7,254,338.	481,549	7,254,496
481,711	7,254,339	481,598.	7,254,491
481,707	7,254,322	481,596	7,254,468
481,675	7,254,322	481,534	7,254,471

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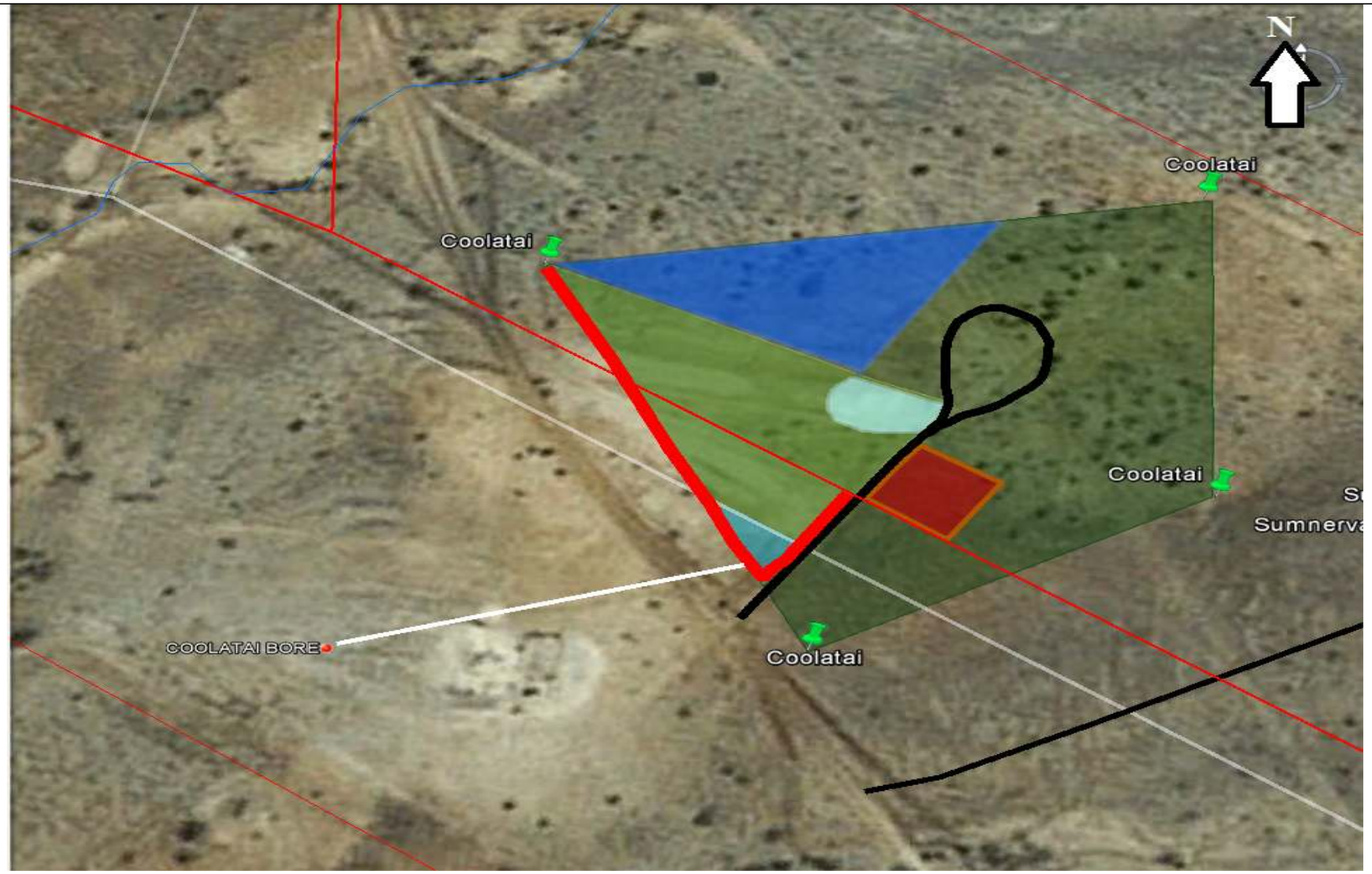
Carwell Sale Area (*Green*)
& Cultural Heritage Exclusion Area (*Red*)
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall-Tambo Gravel Pits
Date	25/01/2013



Coolatai Pit Expansion Area (Decimal Degrees)

S-24.878460° E145.549731°
S-24.881910° E145.551671°
S-24.880584° E145.554656°
S-24.881910° E145.551671°

- Haul Road Coolatai
- Existing Distrubed Area
- Gravel Stockpile
- Bund Wall
- Bund Wall
- Proposed Extraction Area
- Hardstand for Machinery
  Includes re-fueling, maintenance and parking for al
- Sediment Pond
- Coolatai Bore
  300 meters to Coolatai Bore

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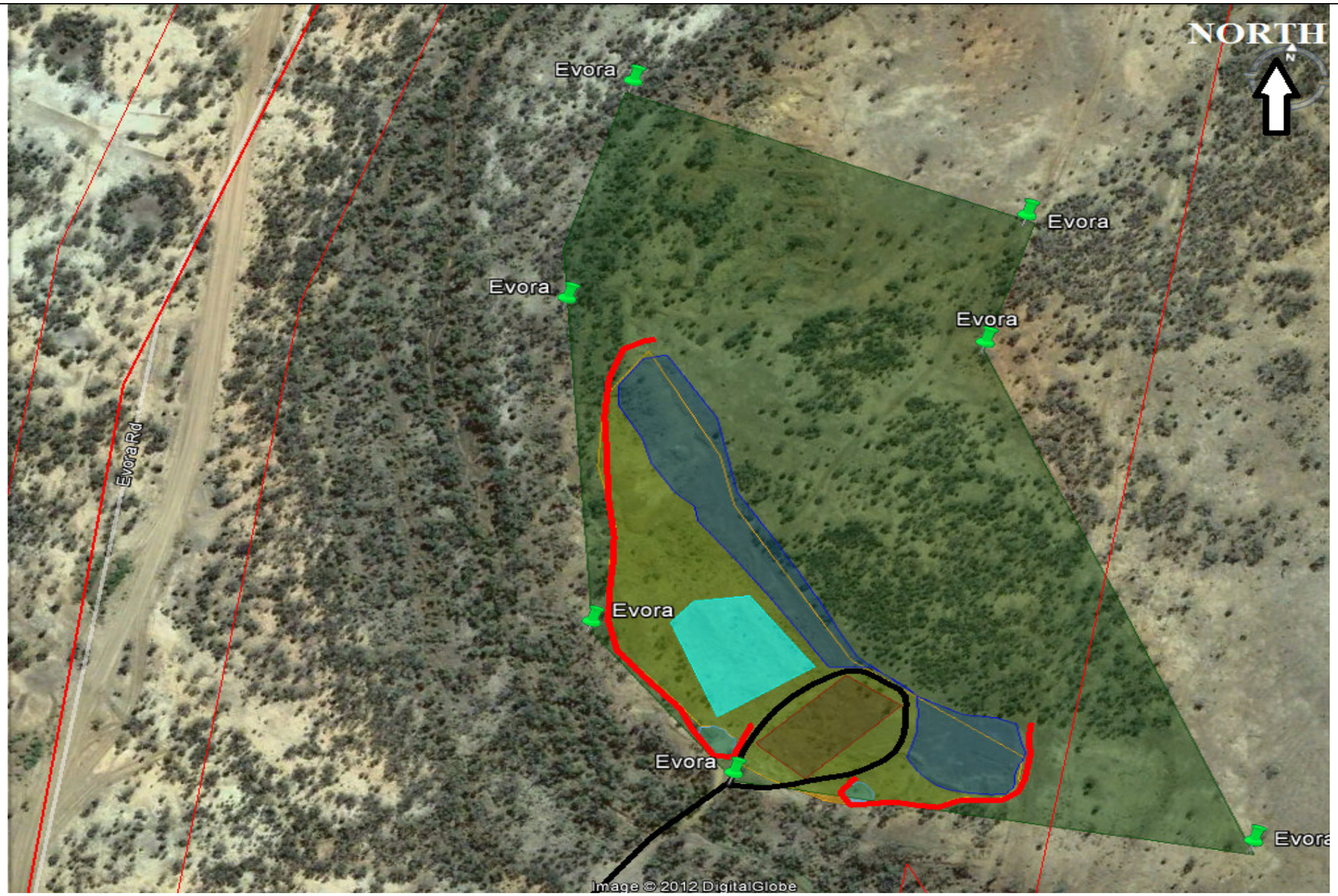
Coolatai Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012



Evora Pit Expansion Area (Decimal Degrees)

S-24.361315°	E 145.496084°
S -24.363310°	E145.495769°
S S-24.366192°	E 145.496332°
S -24.367449°	E 145.497565°
S-24.367667	E 145.501724
S -24.363420°	E 145.499114°
S -24.362251°	E 145.499602°

- Existing Extraction Area
- Pentwyn Haul Road
- Hardstand for Machinery
  Includes re-fueling, maintenance and parking for all machinery on
- Haul Road
- Proposed Extraction Area
- Bund Wall
- Gravel Stockpile
- Sediment Pond

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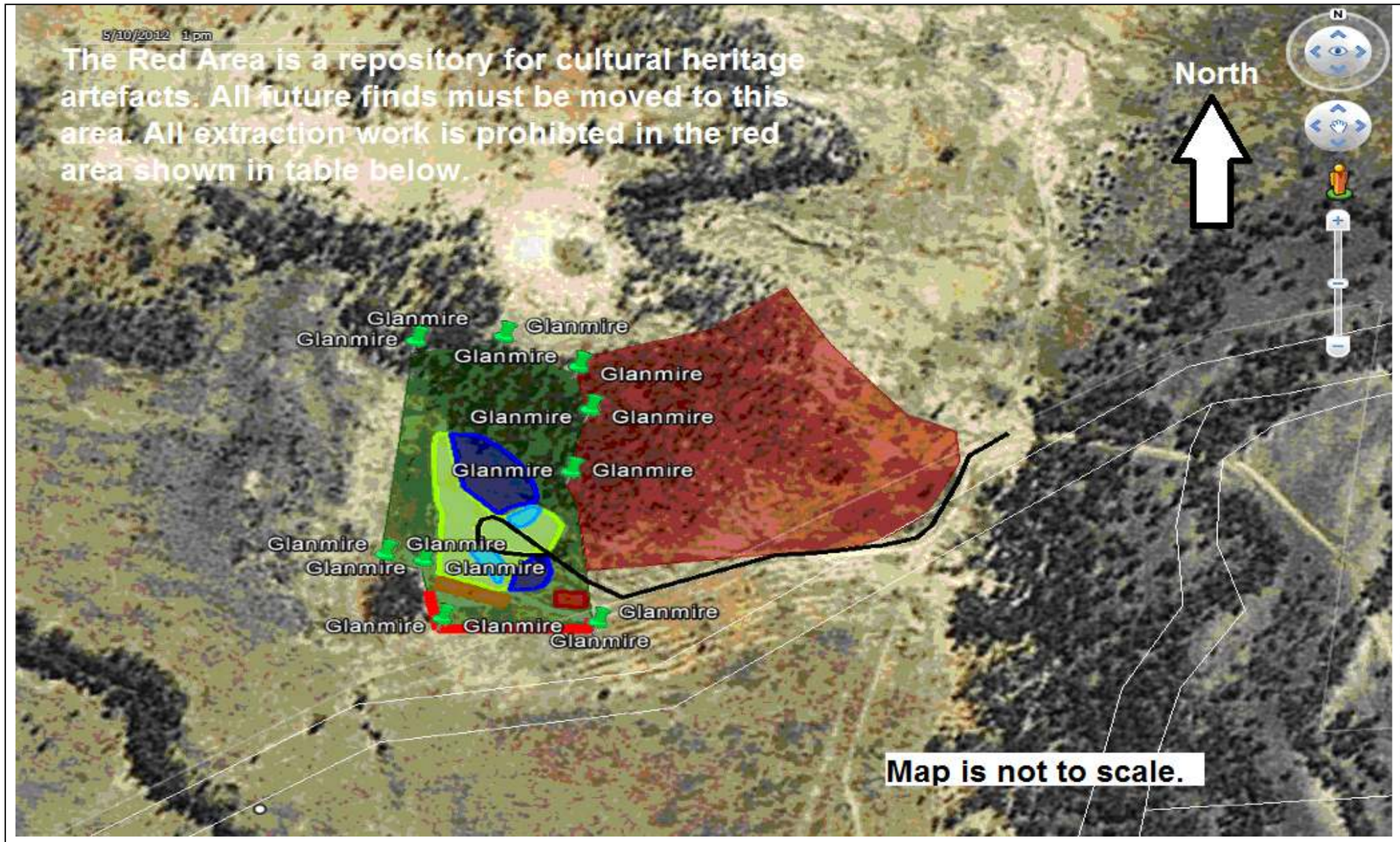
Evora Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012



Sale Boundary Areas: Co-ordinates WGS84 Zone 55J

Glanmire Pit Sale Area

Easting	Northing
375,125.00	7,223,977.00
375,305.40	7,223,940.75
375,326.00	7,223,575.00
375,088.00	7,223,672.00

Glanmire Pit Repository Area for Cultural Heritage Artefacts

Easting	Northing
375,305.00	**7,223,941**
375,536.00	**7,224,076**
375,733.00	**7,223,873**
375,681.00	**7,223,894**
375,732.00	**7,223,830**
375,698.00	**7,223,750**
375,557.00	**7,223,696**
375,319.00	**7,223,669**
375,296.00	**7,223,793**
375,318.00	**7,223,881**
375,304.00	**7,223,967**

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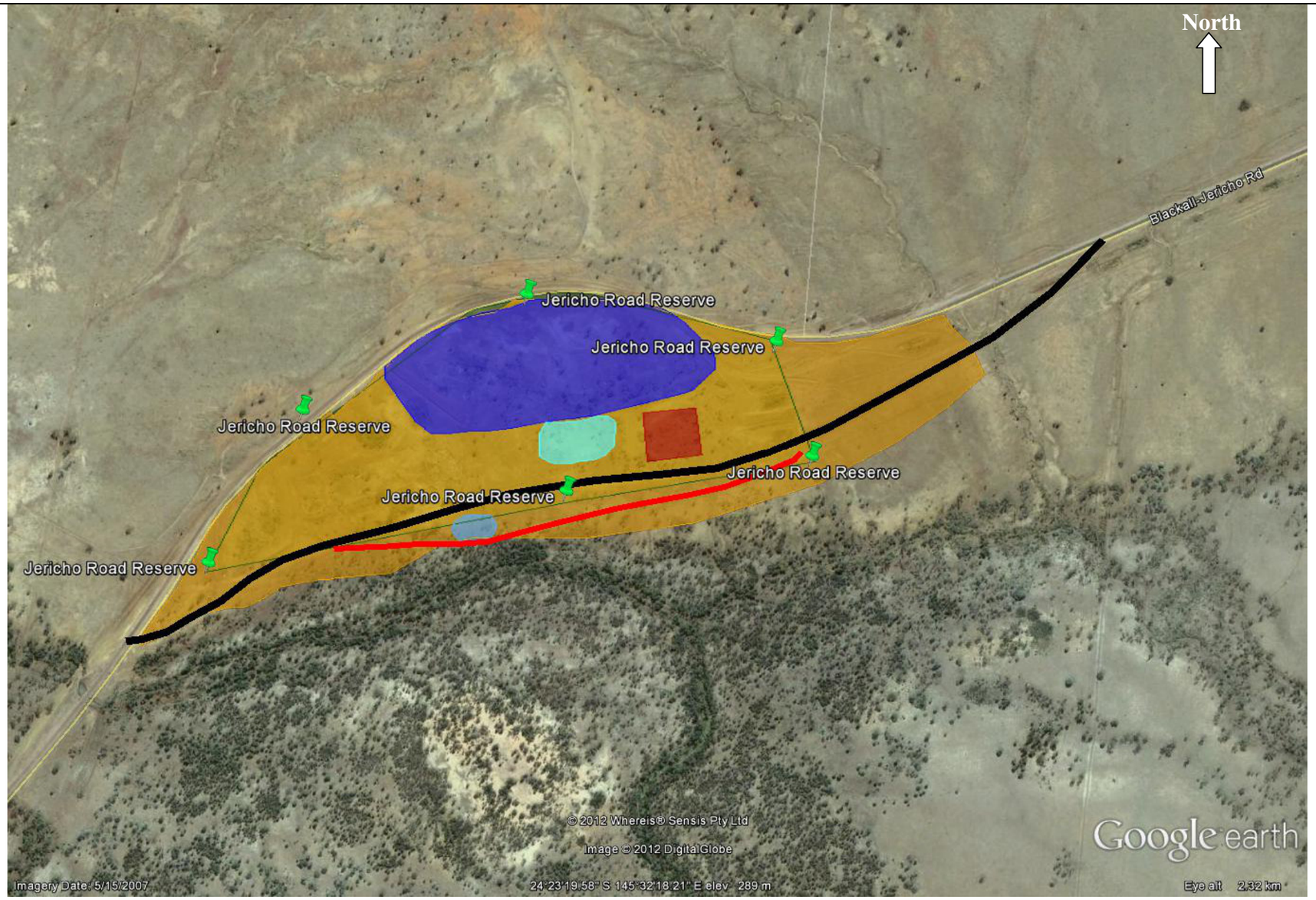
Engineering the Outback

Glanmire Sale Area (*Green*)
& Exclusion Area (*Red*)
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall-Tambo Gravel Pits
Date	15/01/2013



Jericho Road Reserve Pit Expansion Area (Decimal Degrees)

S-24.390761° 145.530316°
S-24.388281° 145.532000°
S-24.386416° 145.536001°
S-24.387176° 145.540430°
S-24.388956° 145.54115°

- Existing Extraction Area
- Pentwyn Haul Road
- Hardstand for Machinery
  Includes re-fueling, maintenance and parking for all machinery on
- Haul Road
- Proposed Extraction Area
- Bund Wall
- Gravel Stockpile
- Sediment Pond

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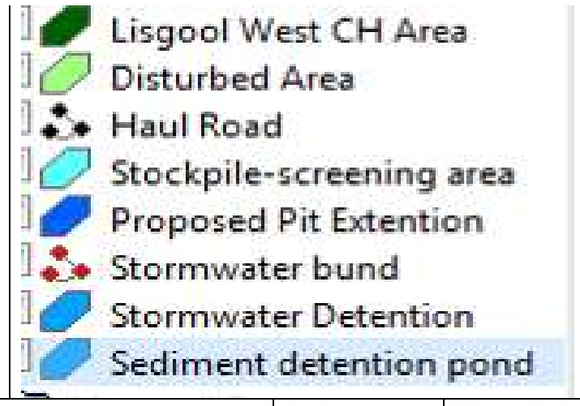
Jericho Road Reserve Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012

Lisgool pit area (WGS 84) Zone 55J

Easting	Northing
419,459.79	7,318,608.63
419,626.37	7,318,244.01
419,319.14	7,318,119.25
419,155.19	7,318,501.39



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Lisgool Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW &DF
Job#	04/55 Blackall-Tambo Gravel Pits
Date	29/07/2012

Listowell Downs pit area (WGS 84) Zone 55J

Easting	Northing
320,968	7,212,890
321,107	7,213,017
321,354	7,212,856
321,169	7,212,697

- Haul Road
- Stormwater Bund
- Disturbed Area
- Pit Extension
- Stockpiling Gravel
- Overburden
- Stormwater Bund
- Stormwater Pond
- Hardstand for Machinery

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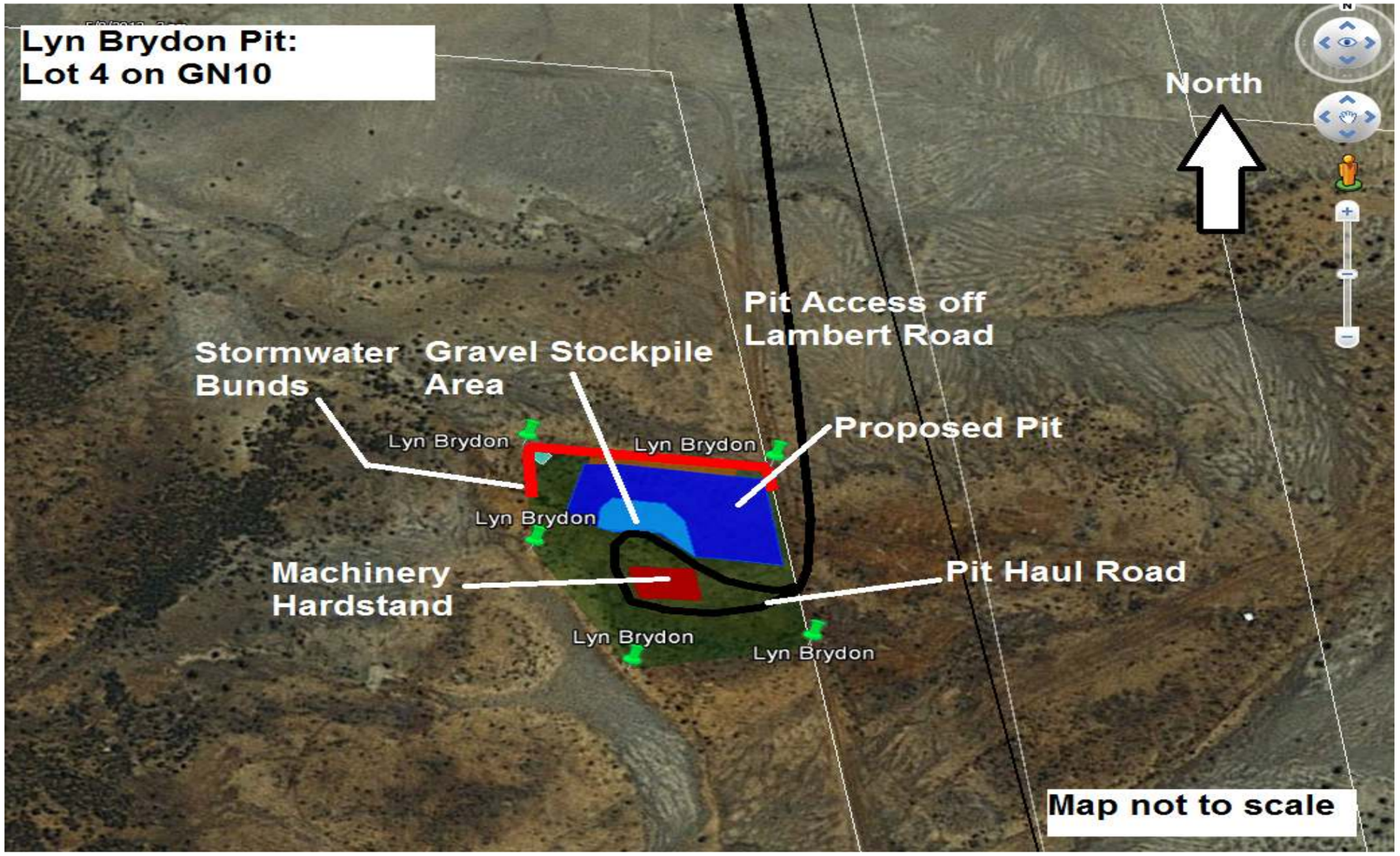
Listowell Downs Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW &DF
Job#	04/55 Blackall-Tambo Gravel Pits
Date	21/07/2012



Sale Boundary Areas: Co-ordinates WGS84 Zone 55J

Lyn Brydon Pit Sale Area

Easting	Northing
322,700	7,206,660
322,299	7,206,699
322,765	7,206,285
322,475	7,206,229

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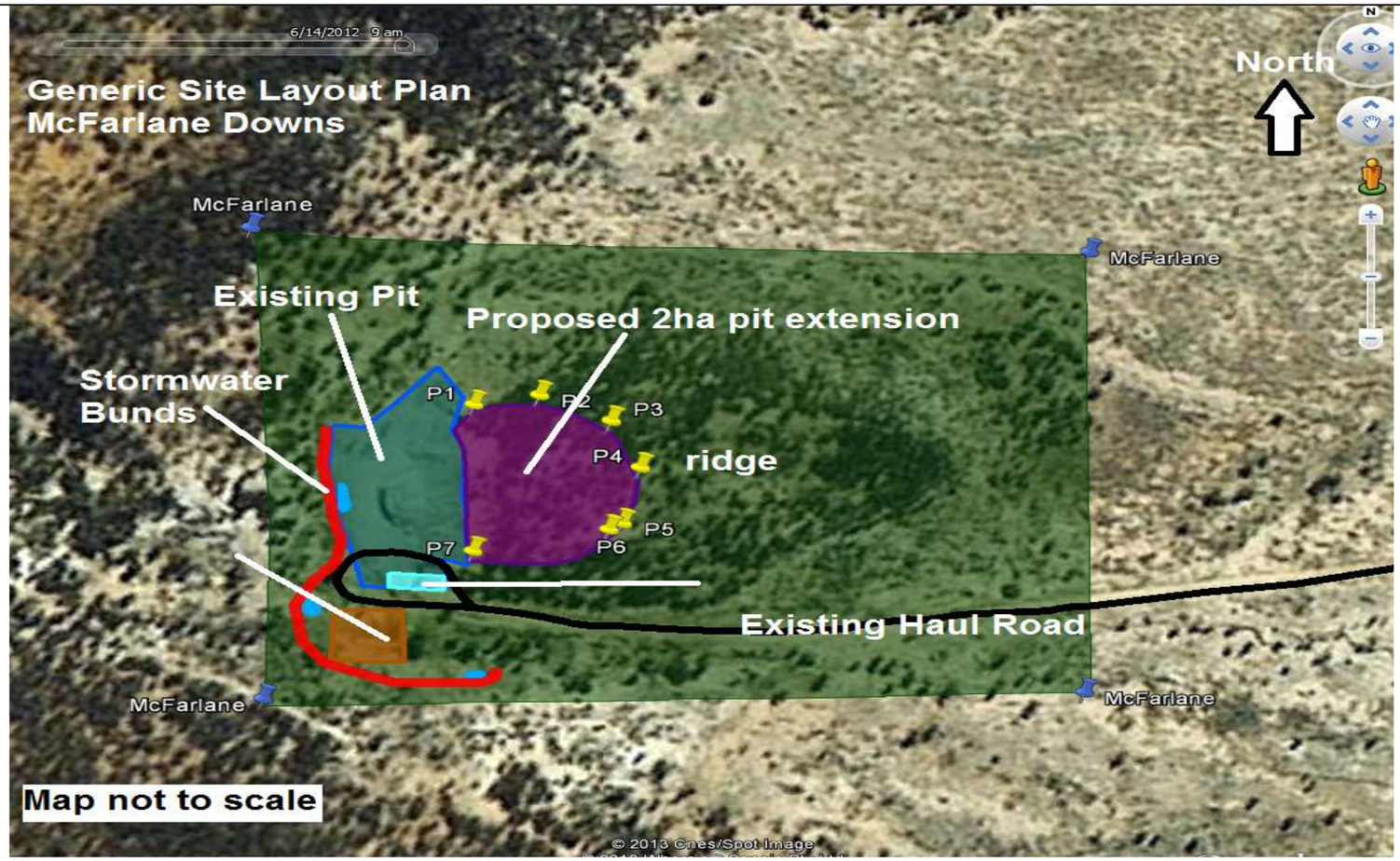
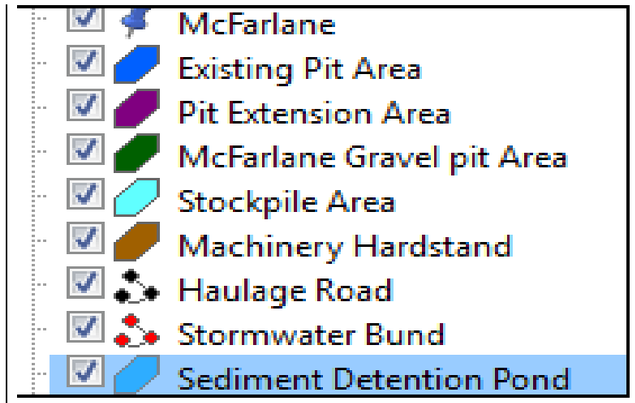
Lyn Brydon Quarry Operations Plan
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall-Tambo Gravel Pits
Date	11/02/2013



MacFarlane gravel pit area (WGS 84)(Green Area)

Easting	Northing
383,950.00	7,254,720.00
384,650.00	7,254,720.00
384,650.00	7,254,200.00
383,950.00	7,254,200.00



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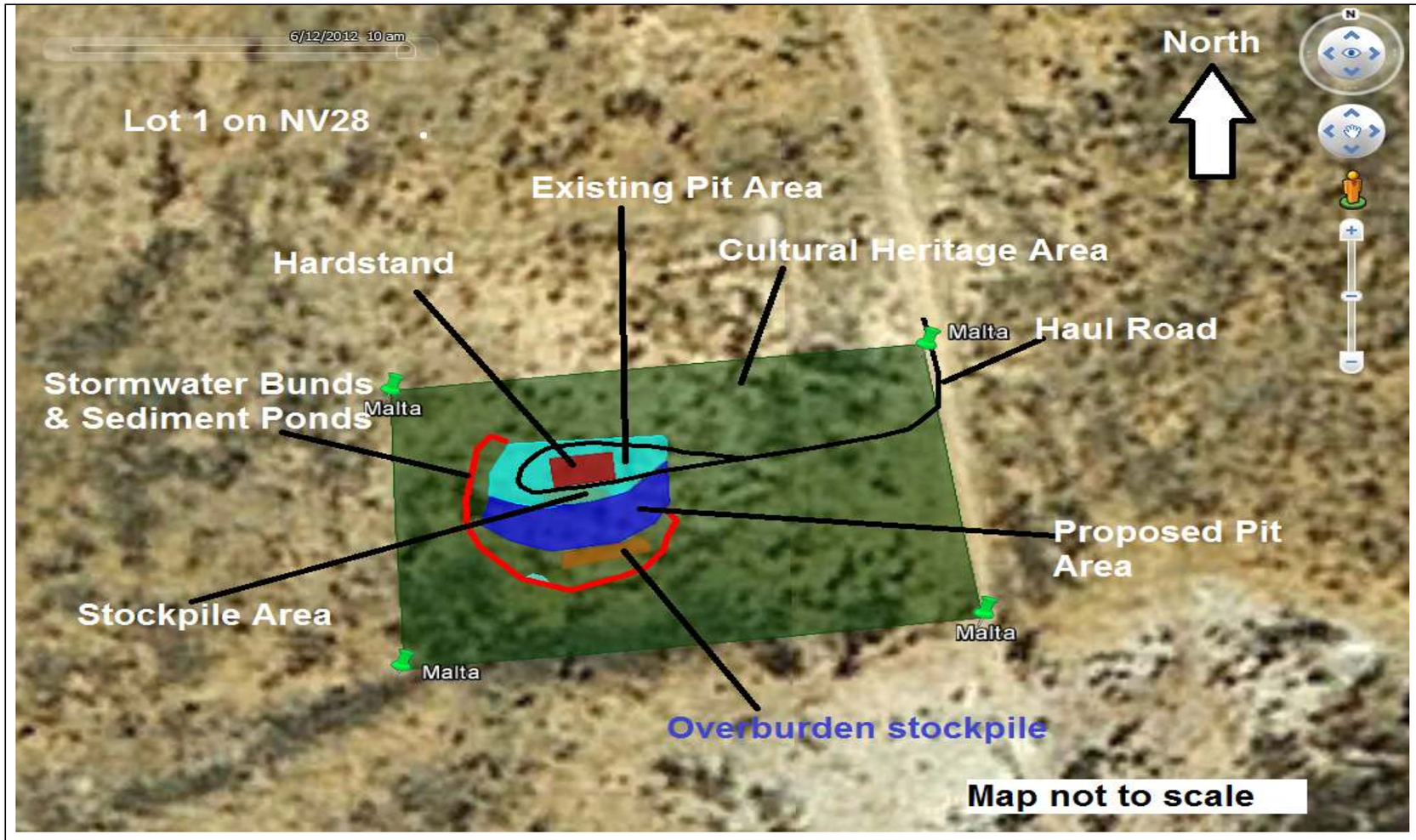
MacFarlane Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW &DF
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	29/07/2012



Sale Boundary Areas: Co-ordinates WGS84 Zone 55J

Easting	Northing
465,655	7,243,934
465939	7,243,956
465,966	7,243,782
465,657	7,243,748

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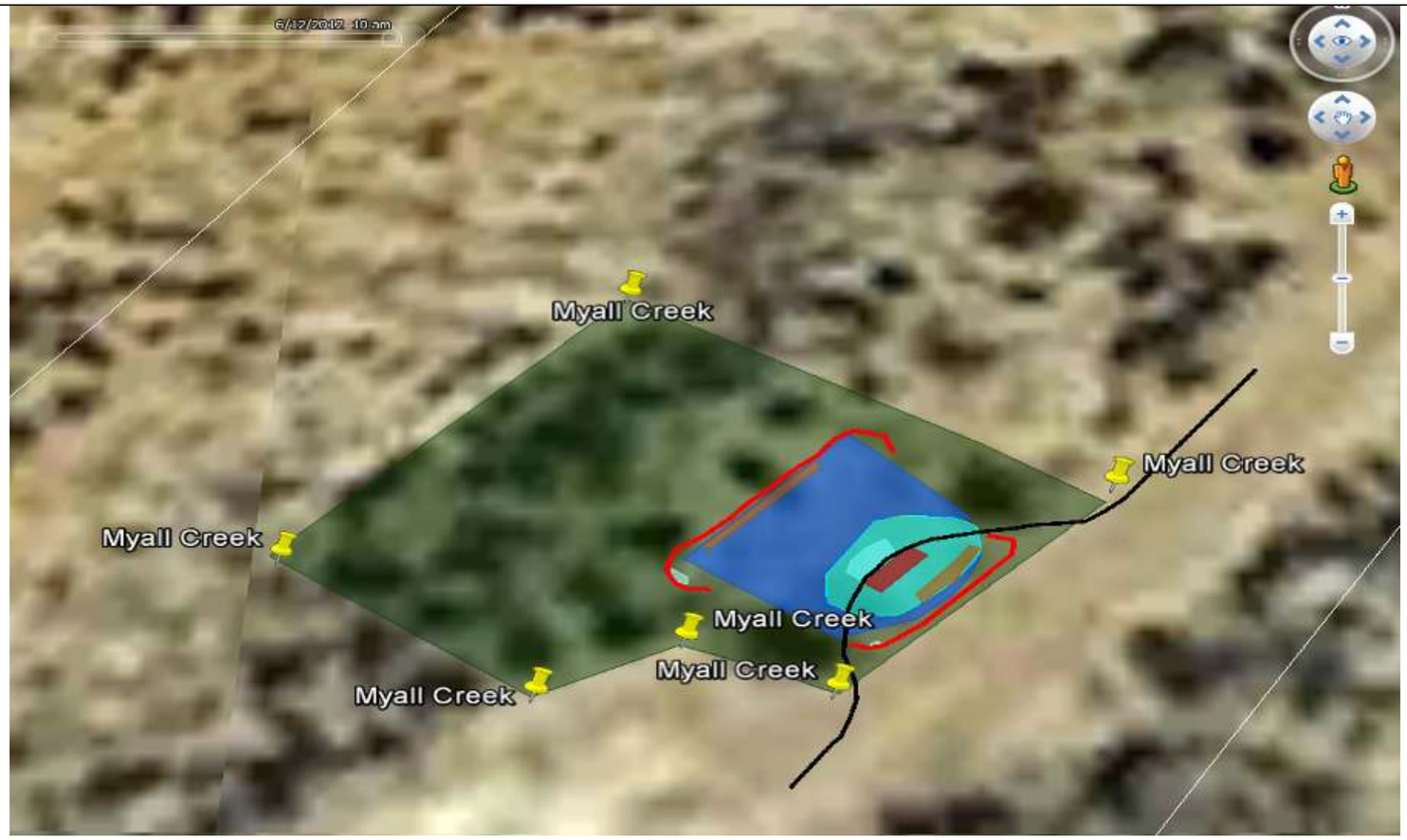
Malta Pit 2 Quarry Operations Plan

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall-Tambo Gravel Pits
Date	23/01/2013



Myall Creek pit area (WGS 84) Zone 55J

Easting	Northing
375,763	7,209,666
375,821	7,209,726
375,903	7,209,681
375,856	7.209,638
375,832	7,209,648
375,808	7,209,637

- Stormwater Bund
- Haul Road
- Disturbed Area
- Pit Extension
- Stormwater Bund
- Overburden
- Overburden
- Stockpile & screening
- Stormwater pond
- Stormwater Pond
- Hardstand Area

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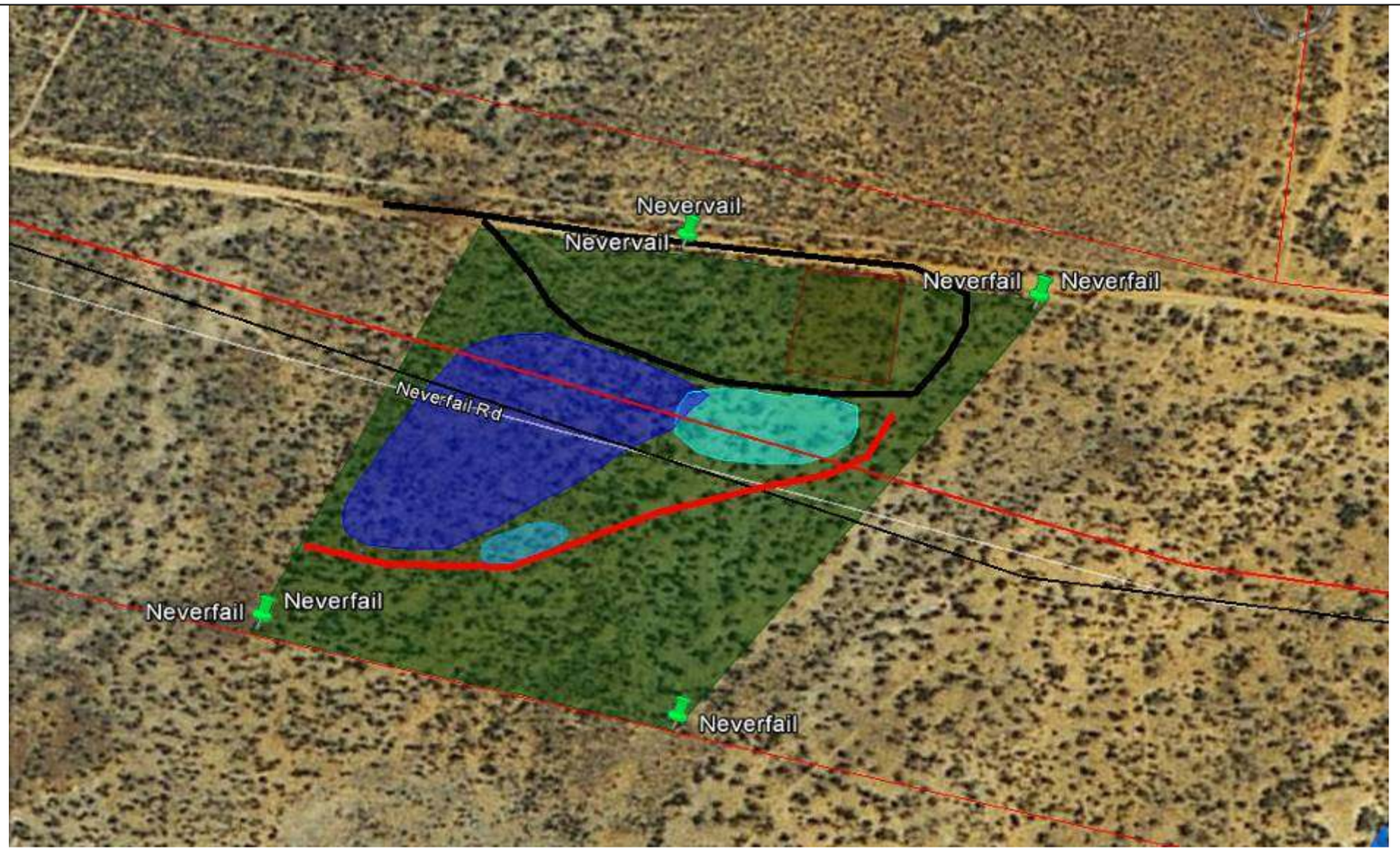
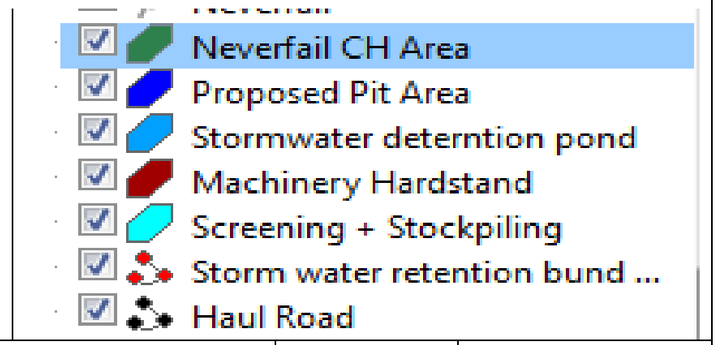
Myall Creek Road Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW &DF
Job#	04/55 Blackall-Tambo Gravel Pits
Date	20/11/2012



Neverfail Road Reserve pit area (WGS 84)

Easting	Northing
383306.24	7337469.85
383,017.00	7,336,904.00
383,577.00	7,337,444.00
384,046.00	7,337,363.00



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Neverfail Road Reserve Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW &DF
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	29/07/2012

Pentwyn Pit Expansion Area (Decimal Degrees)

S-24.546117° 145.658239°
S-24.544369° 145.656805°
S-24.542919° 145.656635°
S-24.542366° 145.658398°
S-24.542314° 145.662066°
S-24.544689° 145.662747°
S-24.545729° 145.660727°

- Existing Extraction Area
- Pentwyn Haul Road
- Hardstand for Machinery
  Includes re-fueling, maintenance and parking for all machinery on
- Haul Road
- Proposed Extraction Area
- Bund Wall
- Gravel Stockpile
- Sediment Pond

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Pentwyn Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012

Powerline/Amaroo pit area (WGS 84) Zone 55J

Easting	Northing
315,600	7,204,256
315,772	7,204,256
315,649	7,203,992
315,512	7,204,059

- Disturbed Pit Area
- Hardstand
- Pit Extension Area
- Stormwater Bund
- Stockpile area
- Overburden for bunding
- Haul Road
- Haul Raod

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Powerline Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW &DF
Job#	Blackall/Tambo Gravel Pits
Date	20/11/2012

Romulus Pit Expansion Area (Decimal Degrees)

S-24.711226° 145.633638°
S-24.706942° 145.633763°
S-24.706989° 145.636888°
S-24.711503° 145.637552°

- Existing Extraction Area
- Pentwyn Haul Road
- Hardstand for Machinery
  Includes re-fueling, maintenance and parking for all machinery on
- Haul Road
- Proposed Extraction Area
- Bund Wall
- Gravel Stockpile
- Sediment Pond

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Romulus Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012

Sumnervale Pit Expansion Area (Decimal Degrees)

Latitude	Longitude
-24.879403°	145.557589
-24.880841°	145.559770°
-24.882208°	145.558230°
-24.880868°	145.556018°

- Existing Extraction Area
- Pentwyn Haul Road
- Hardstand for Machinery
  Includes re-fueling, maintenance and parking for all machinery on
- Haul Road
- Proposed Extraction Area
- Bund Wall
- Gravel Stockpile
- Sediment Pond

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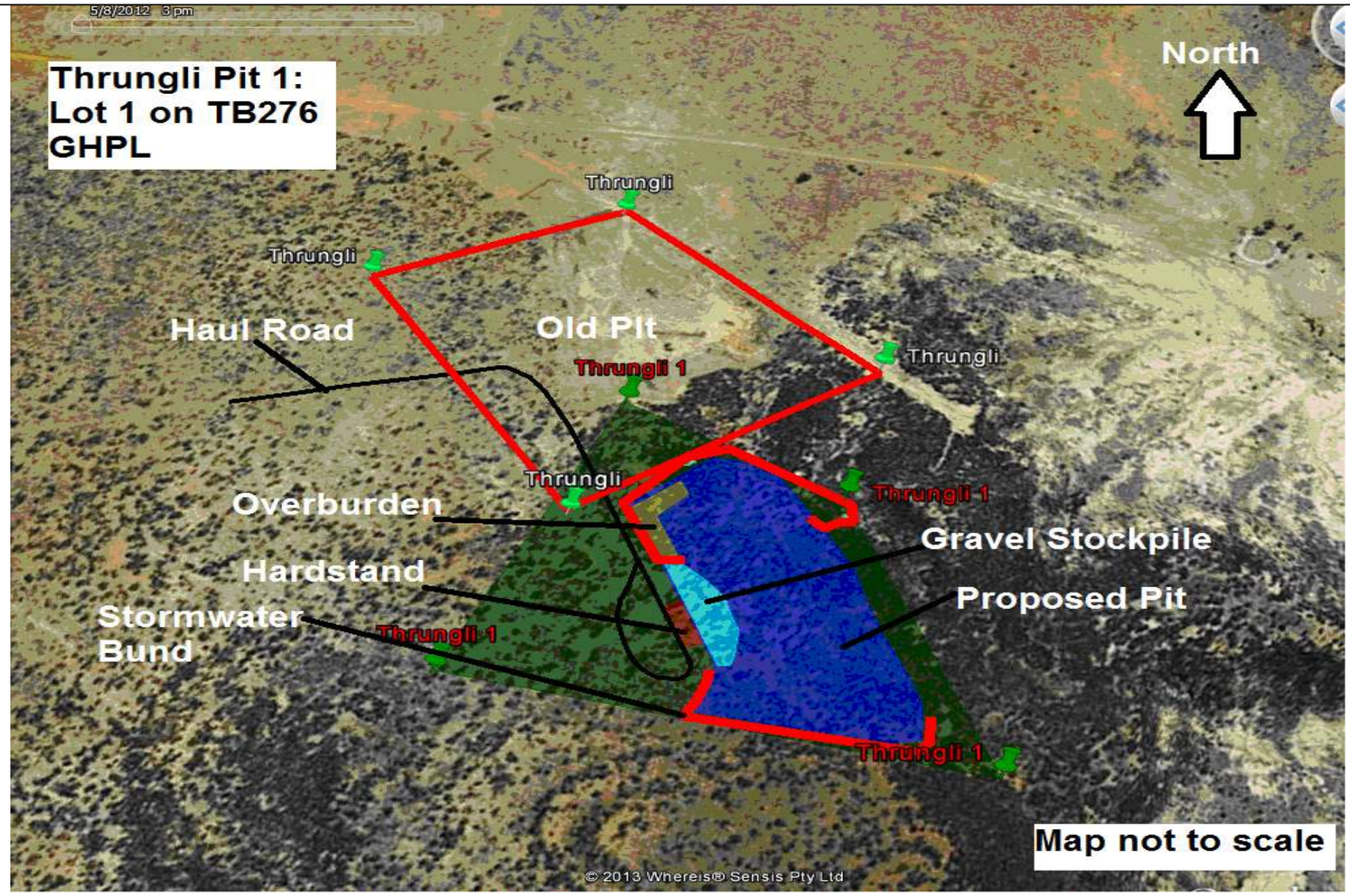
Sumnervale Quarry Development Plan
(Indicative Only)

Scale	Not to Scale
Drawn	NW
File	04-55 Flood Damage – Shire Roads
Job#	Blackall/Tambo Gravel Pits
Date	13/07/2012



Sale Areas: Co-ordinates WGS84 Zone 55J

Thrungli 1 Pit Sale Area

Easting	Northing
403,820	7,299,250
404,180	7,299,070
404,420	7,298,570
403,575	7,298,700

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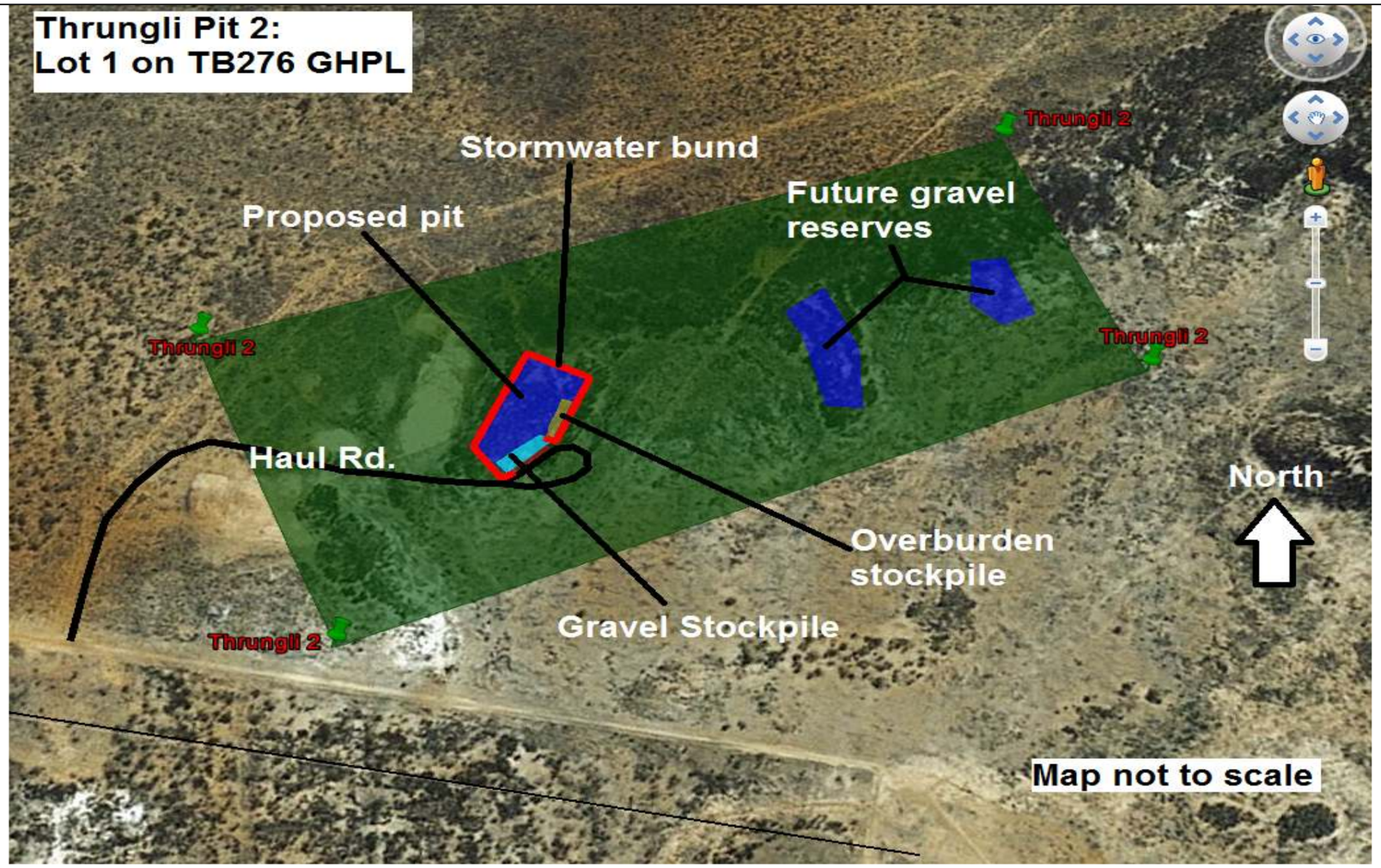
Thrungli Pit 1 Quarry Operations Plan
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall-Tambo Gravel Pits
Date	31/01/2013



Sale Areas: Co-ordinates WGS84 Zone 55J

Thrungli Pit2 Sale Area

Easting	Northing
400,420	7,294,900
401,800	7,295,400
402,075	7,294,930
400,730	7,294,280

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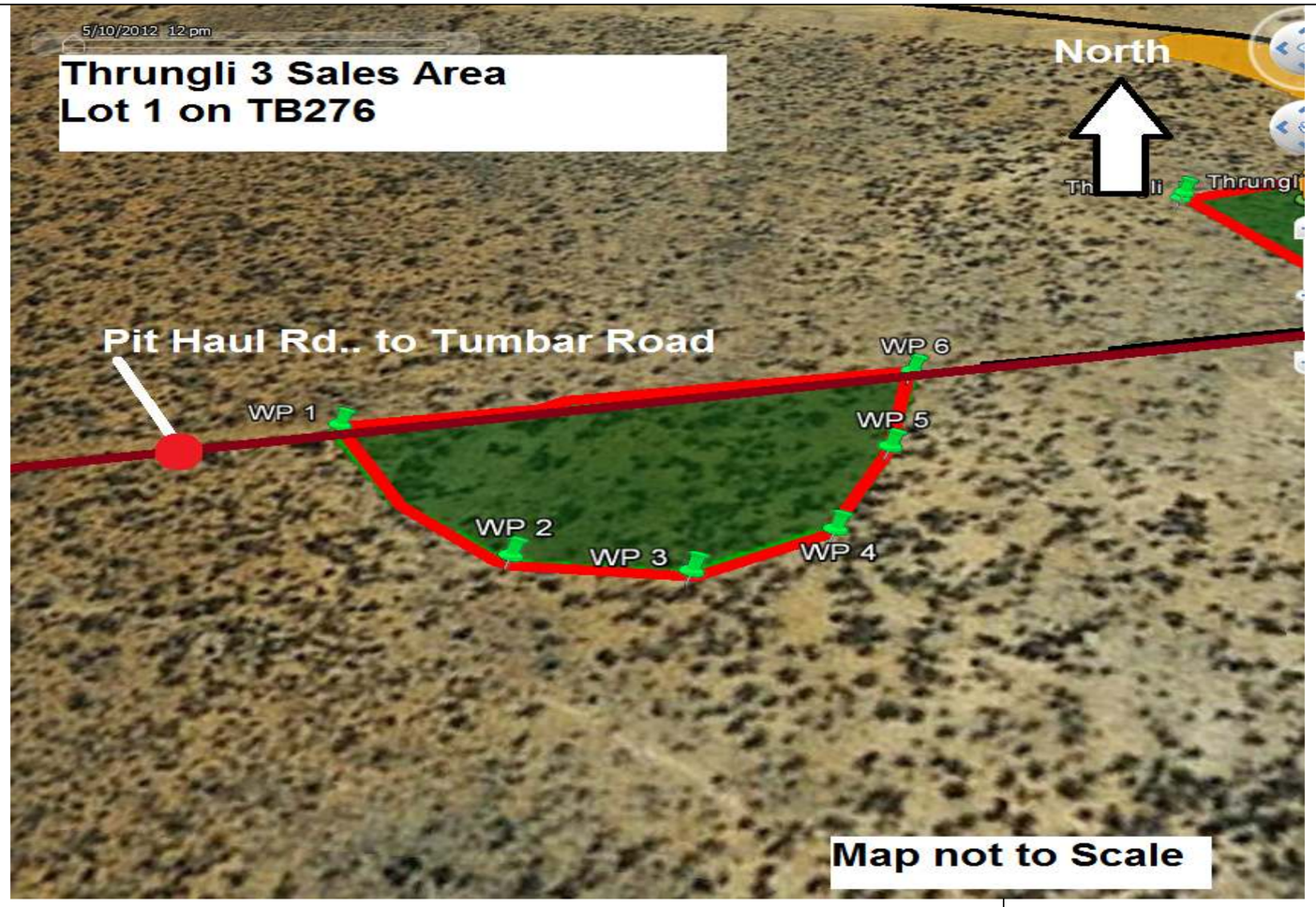
Thrungli Pit 2 Quarry Operations Plan
(Indicative Only)

Scale	Not to Scale
Drawn	
File	04-55 Flood Damage – Shire Roads
Job#	Blackall-Tambo Gravel Pits
Date	31/01/2013



Thrungli pit area 3 (WGS 84) Zone 55J

Thrungli Pit 3 Supply Zone		
Way Points	**Easting**	**Northing**
WP 1	402,626	7,299,086
WP 2	402,803	7,298,932
WP 3	402,942	7,298,928
WP 4	403,047	7,298,986
WP 5	403,086	7,299,096
WP 6	403,102	7,299,203

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Thrungli Sale Area 3

Scale	Not to Scale
Drawn	NW &DF
Job#	04/55 Blackall-Tambo Gravel Pits
Date	24/04/2013

Appendix 2

Stormwater Management Plan

The stormwater management plans (see attached) consist of handling two types of stormwater, firstly stormwater from outside the pit area and secondly, stormwater from within the pit area.

The stormwater in the pit area will be collected in a sediment pond located on the lowest side of the pit. As the pits have a limited life span, the pond will be designed to collect water from a 24 hour duration event at a recurrence level of 5 years.

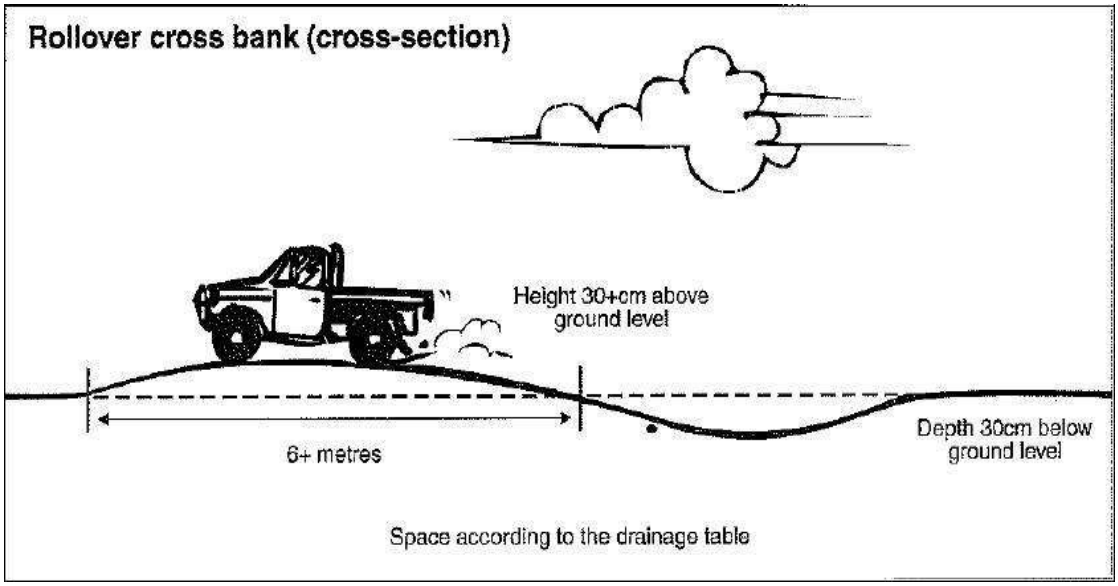
The by-wash areas will be either lined with plastic or lined with oversize rock to act as a water dissipater. These by-wash areas will be a minimum of 5 metres wide to spread the water, on discharge, over a large area. Over topping events will be recorded as discharges into the environment, through the council's recording systems that are part of their QMS. The stormwater from outside the pit areas will be directed by bund walls around the pit area, where required, and onto undisturbed grass areas. This process will be conducted in such a manner to minimize water velocity, spread the flow over the largest area, where possible, and not to have the water running over disturbed areas, if possible. Where the water is running across the haulroad, a flat contour bank will be constructed across the road so that the water does not run down the road.

On completion of extracting and removing the gravel material from each area, rehabilitation of the site will take place. The sediment ponds will be partly filled in so that the total depth is less than 500 millimetres. This will allow the water to dissipate through evaporation. Once the disturbed areas regenerate, with grasses and shrubs, the amount of sediment runoff will decrease and the requirement for sediment ponds will no longer exist.

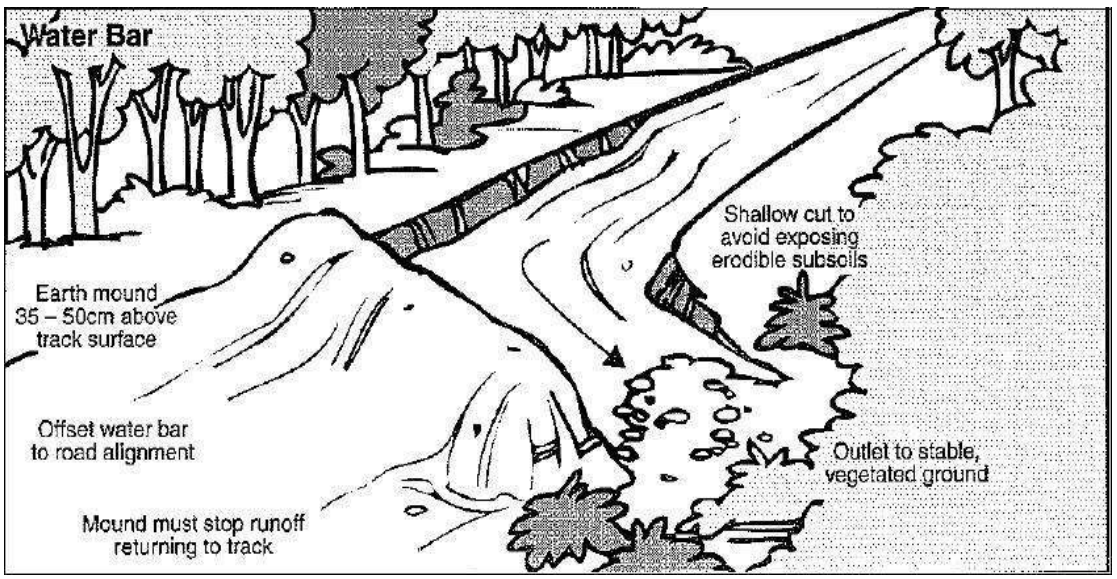
Appendix 3

Typical Road (Track) Drainage Construction

Rollover cross banks are used where the road or track is intended to be trafficable. They are constructed as per diagram by excavation and/or deposition of material to create a long and gently slope.

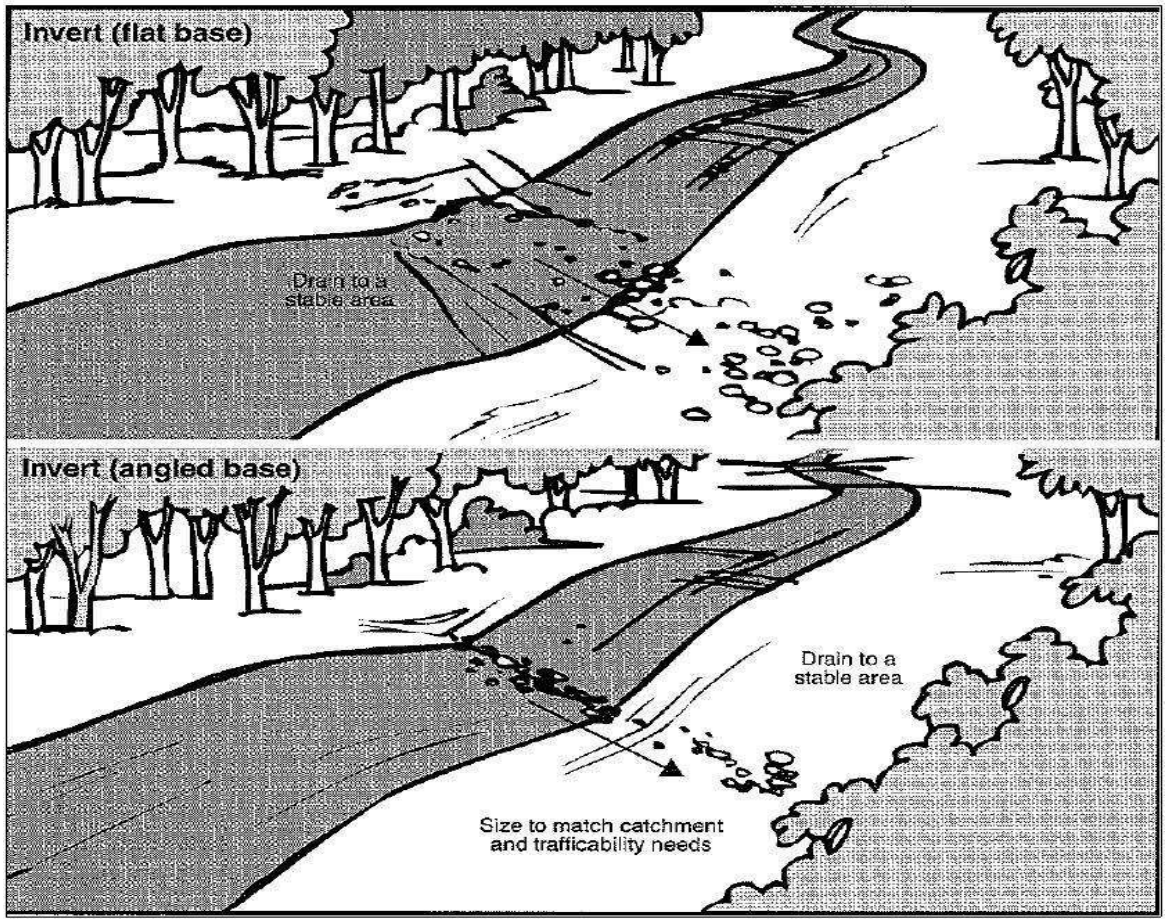


Water bars (whoa boys) are steep cross banks that are used on roads and tracks that are not required to be trafficable. They are primarily erosion control structures best used to stabilize surfaces on the completion of use. Water bars operate by slowing and diverting water from tracks to a stable outlet without water returning to the track down slope.



Inverts – inverts are trafficable depression in the road surface that intercept surface water and convey it across the road. They are most suitable on lower grades (slopes). Inverts are built by excavating material from the road to form the drain. In some cases this materials may be spread on the road surface down slope of the drain itself. The invert size should be adequate to match flow requirements.

Inverts may be constructed with a flat base or a narrow base (angled). It is important to ensure cross fall will drain the base and outlet drains onto a stable, vegetated area. The base of the depression can be protected with rock if the wetness of the structure makes this necessary.



Appendix 4

Traffic Management Plan

1. The traffic control devices utilized will be in accordance with the document "Manual of Traffic Control Devices" (MUTCD Part 3 - 2007). All traffic control devices shall be installed in accordance with the requirements and layouts specified in the MUTCD.

2. A set out plan of all temporary regulatory signage will be produced with a detailed traffic control plan for the construction process.

3. Records of all temporary regulatory signs and changes to traffic control will be recorded and maintained.

4. The general public will be advised of any changes to normal traffic movements and of any possible disruptions through one or all of the below methods:
    a. Direct consultation with the affected residents.
    b. Letterbox drops to affected residents.
    c. Radio announcements

5. The relevant authorities and emergency services shall be given no less than 48 hours' notice of any changes to normal traffic movements or possible disruptions.

6. Existing haulroads to gain access to the pit will be used where possible. Drainage of the haulroad will be as per best practice and consist of diversion drains every 50 metres so the stormwater is not collected into larger flows, at grade floodways where water is to traverse the road and flat table drains, where required.

7. The trucks will enter the pit via haulroads, turn around at the turn-around point and load on the way out.

8. Water trucks will be used to maintain a safe working environment, by keeping the haulroad and 80 metres each side of the haulroad access dust free.

9. Truck turning signs will be used to warn the public of traffic entering from the haulroad (in accordance with the MUTCD).

10. The haulroad will be regularly maintained using a grader and water truck, ensuring that the diversion drains are fully functional at all times.

Appendix 5

Rehabilitation Plan

Rehabilitation of each area will take place once the gravel product has been hauled to the project site.

The rehabilitation will be progressive from site to site as the activities move from one site to another, so that a minimum area of land is left in a disturbed state at any one time.

The rehabilitation plan will consist of:-

1. Lightly ripping the pit floor to a depth of 200 millimetres on a contour pattern with a spacing of 5 metres.

2. Spreading out any oversize rock that is excess to requirements over the pit floor, in areas where wash is likely to occur.

3. Spreading out all the overburden over the pit floor, so that all the drainage lines are maintained in their original location.

4. Spreading the topsoil along the ripped sections of the pit floor using a loader. This topsoil should contain enough grass seed to generate grass cover over the pit area. If this process is not successful then more grass seed will be spread over the site. The landholder, EHP and Council will be required to agree on the type variety of seed used.

5. Where requested by the landholder ripping the haulroads to a depth of 300 millimetres and placement of water diverting structures across the haulroad where required. Any stockpiled or riled topsoil resulting from the construction of the haulroad will then be spread over the haulroad area.

6. Reinstating the sediment pond at the bottom of the pit (if required and installed), with a maximum depth of 500 millimetres (If the landholder does not want another stock watering point in the paddock, which will be negotiated on a case-by-case basis) and construct a water dissipater at each end of the pond using oversize rock from the pit to disperse the water over the grassed area outside the pit area. As the area generates regrowth of shrubs and grasses, the amount off sediment carried in the stormwater run-off should decrease until all the area is covered with regrowth and the sediment pond is no longer required (by this time the sediment pond should be almost full of sediment and only holding water for short periods after weather events).

These sites will then be monitored for two years for signs of a successful rehabilitation and for the management of noxious weeds (including parthenium). If further works are required to successfully rehabilitate the sites (damage caused by excessive weather events), the work will be carried out immediately by the Council and/or its agents.

Appendix 6

Petroleum Spillage Action Plan

Minor Spillage (no free flowing liquid)

Soak up spillage with “Envirosorb”, crushed bark, sawdust or sand.

If contaminated with traces of metal (e.g. sump oil) – Take off site and dispose in an industrial bin.

If free of traces of metal (e.g. distillate) – Store “Envirosorb” to allow reactivation OR spread out crushed bark, sawdust or sand away from watercourses to aerate and rehabilitate.

Major Spillage (free flowing liquid)

Contain spillage as quickly as possible. Where possible pump/bucket up into containers for appropriate treatment, recycling or disposal off site.

Soak up spillage with “Envirosorb”, crushed bark, sawdust or sand.

If contaminated with traces of metal (e.g. sump oil) – Take off site and dispose in an industrial bin.

If free of traces of metal (e.g. distillate) – Store “Envirosorb” to allow reactivation OR spread out crushed bark, sawdust or sand away from watercourses to aerate and rehabilitate.

Notify relevant DPI Forestry Supervisor