Food and Agriculture Organization of United Nations (UN FAO)
And
The Government of Vietnam.

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Introduction

Background

At the (NUI CANG, DIEM THUY, THAI NGUYEN) site several tonnes of soil contaminated with DDT and Lindane were originally deposited on the ground surface on a raised embankment beside a rice paddy field. Subsequently and recently the contaminated soil was placed in a purpose built nine cell concrete bunker located on the site. The most contaminated soils (DDT and LIndane) were placed into Cell 2 of this bunker. This initial project is designed to recover the material that was placed in cell 2, drum the material and transport the material for disposal.

Purpose of this document

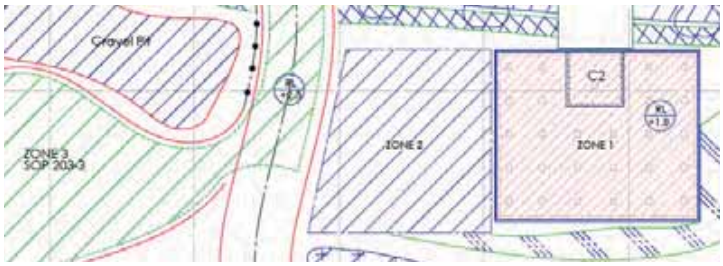
This document is the project plan for the recovery of the material in Cell 2, its packaging and subsequent transportation for disposal. The document contains all the requisite drawings, Standard Operating procedures (SOPs) and health and safety formats. This document is to be used as the project management manual. The drawings and posters are to be printed out and placed in the zones at the work place. The site supervisor shall manage the operation using this document and complete the audit functions therein during the execution of the project.

Document Writer : Dr. Ron McDowall

Document Approval PMU (Vietnam)

Zoning

Zoning involves the demarcation of contaminated and clean working places, and the establishment of strict working rules to confine contaminants (hazardous waste, contaminated material, contaminated dust and liquid, etc.) to the area which is already contaminated (the "dirty zone"). Workers' observance of the zoning and the associated rules for movement between zones should prevent casual exposure and cross-contamination during the handling of obsolete pesticides or contaminated material. Cross-contamination is a critical threat to workers, their families and the community around the site. It occurs when workers leave the work site with contaminated hands, hair, clothing, shoes or other material and spread contaminants around the site or into their homes. It can also affect people involved in subsequent phases of the waste-pesticide processing – such as haulage contractors, workers or storekeepers at collection centres who might come into contact with contaminated material (e.g. repackaging material not properly decontaminated after repackaging). Zoning of workplaces can therefore be seen as the first step in containing contaminants and in protecting workers and people around the site. Figure: Zones 1,2 & 3.



Zone 1
(for construction detail see Drawing 103-1&2 and -SOP 203-1)

The FAO EMTK Took Kit defines Zone 1 as The Hot or Dirty Zone and it is characterized as;

- Close proximity to hazardous materials.
- High risk of exposure when working.
- Focus on repackaging of waste into new containers.
- Control measures in place for the decontamination of workers.
- High levels of supervision and control during operations.
- Close monitoring of workers and work methods based on operating procedures.
- High levels of PPE and environmental protection.

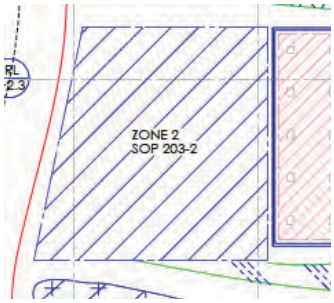
Zone 1 is defined as all the area on top of the burial, see drawing no. 103-1. This zone is provided with barrier marking tape, plastic sheeting, plywood sheets and boundary bunding over the entire zone.

Zone 2

(For construction detail see drawing no. 103-2 and SOP 203-2)

The FAO EMTK Took Kit defines Zone 2 as The Intermediate or Buffer Zone and it is characterized as;

- Lower risk of exposure when working.
- Focus on interim storage of repackaged containers.
- May include removal of residual contamination on the outside of containers.
- Labeling of new containers.
- Lower levels of PPE and environmental protection.



This zone is defined as the area between Zone 1 and the loading road. (see drawing 103-2). This zone is provided for the storage of loaded drums, labeling, palletizing and drum handling. This zone is also provided with plastic sheeting and plywood sheets but no bunding is required in this zone. PPE level is lower and face splash guards are not required.

Zone 3

(For construction details see drawing no. 103-4 and SOP 203-3)

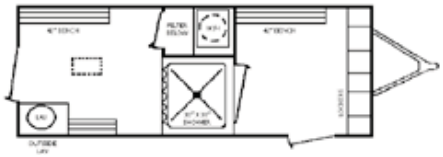
The FAO EMTK Took Kit defines Zone 3 as The Clean Zone and it is characterized as;

- No or minimal risk of exposure.
- Focus on storage of materials pending removal from site.
- PPE related to handling of new, clean packages.
- Use of drum-handling equipment to move items to reduce risk

This zone covers the area between Zone 2 and the lay-down area as shown on drawing 103-1. Note that this area locates the amenities, first aid, emergency equipment and clean empty drums and other equipment along with the project office as shown on drawing 107-1.

Decontamination Facility

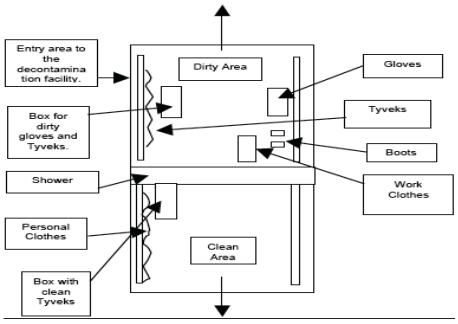
The decontamination facility is normally located so that workers can access it from Zone 2. For this site the decontamination facility will be located at the top end of Zone 1 with its enter point (hot side) near to the bund of Zone 1. This is shown in drawing 103-4. It is proposed that the project be provided with a purpose built trailer for this purpose of a decontamination facility. This facility is then located in the position shown on the drawing. The facility would normally have two zones within it. The first zone is the hot entry zone and is nearest to Zone 1 of the site. A step over barrier in the decontamination facility marks the divides between the hot area and the clean area. The C facility is to be located so that it is the entry pass-way to and from Zone 1.



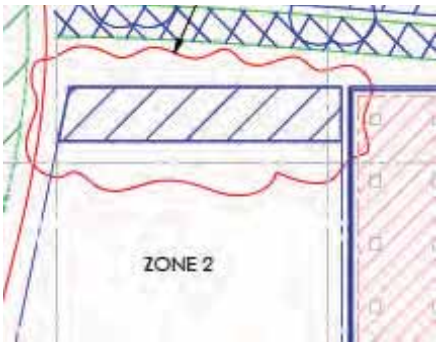
Photos
Clean and dirty areas in C unit

Graphic

Shows locations of gloves suits and clean clothes.



Site Location
rawing 103-4



Zone Working Rules

ithin Zone 1,2 3 various work activities are to take place. As a normal rule of thumb the various work activities that are assigned to each zone should not be undertaken within another zone. It is possible to elevate a work activity up the scale of zone primacy but not downwards. In other words while it is acceptable to perform storage in Zone 1 it is not acceptable to perform ecanting functions in Zone 3. In detail the work activities per zone is assigned as follows

Zone 1

Placement of loose pesticides containers pails etc. and miscellaneous contaminated materials into bunded area by backhoe from the buried cell onto a receiving platform or directly into the drum loader above the bund height packing into transit units or UN rated drums. Transit units and drums lifted into this bund and arranged for the packing of drums, miscellaneous materials etc. Placing into transit units along with packing materials. Specific PPE is to be worn in this area. Each zone PPE is different. (See SOP 203-1)

Zone 2

This area is simply for the storage of the transit units (drums) awaiting shipment by truck to a central warehouse for onwards to disposal facility. No work activity of any kind is allowed in this area other than the loading and unloading and storage of full transit units. (See SOP 203-2)

Zone 3

This area is reserved for the loading of transit units onto trucks or into containers. It is possible to use this area for storage of transit units but it is not recommended practice due to the amount of loading activity in the area. If it is likely that the drums will be containerized then the timber required for blocking of the containers is stored in this zone. The office and amenities are located in this zone. (See SOP 203-3)

Working Area Equipment Requirements

In general equipment is assigned per working zone and this equipment should not travel between zones. Pumping equipment for the transfer of liquid pesticide wastes from partially filled drums to consolidation drums or transit containers should not be moved out of zone 1. This equipment should stay there for the duration of the project. Pumps, hoses, spanners and all tools should have a specified place of occupation within the bund and when not in use are to be located in that place. Emergency spill containment materials are to be located outside zone 1 but within easy reach. The emergency shower, fire fighting equipment and first aid equipment is also to be installed immediately adjacent to zone 1 and can be part of the decontamination facility clean side.

Defence Zones

A defence line should be drawn around both zones 1 2. enerally the zone 3 does allow access to authorized personnel such as container truck drivers who are not required to dress in the personnel protection equipment. Such people are not permitted to enter zones 1 2. For this site the defence line should be plastic warning tape may be used. The rawing 10103- depicts the warning tape requirements as does SOP 203- . All members of the workforce attending the zones must defend the zone against unauthorized entry by anyone.

Emergency Access

The defence system shall be so designed that in the event of a full scale emergency the emergency services can have full access to the working platforms without having to go through the defence lines. In other words the defence line must be able to be readily removable by emergency services. uring such emergencies that are attended by the fire service a position for a Command vehicle both upwind and down wind must be provided.

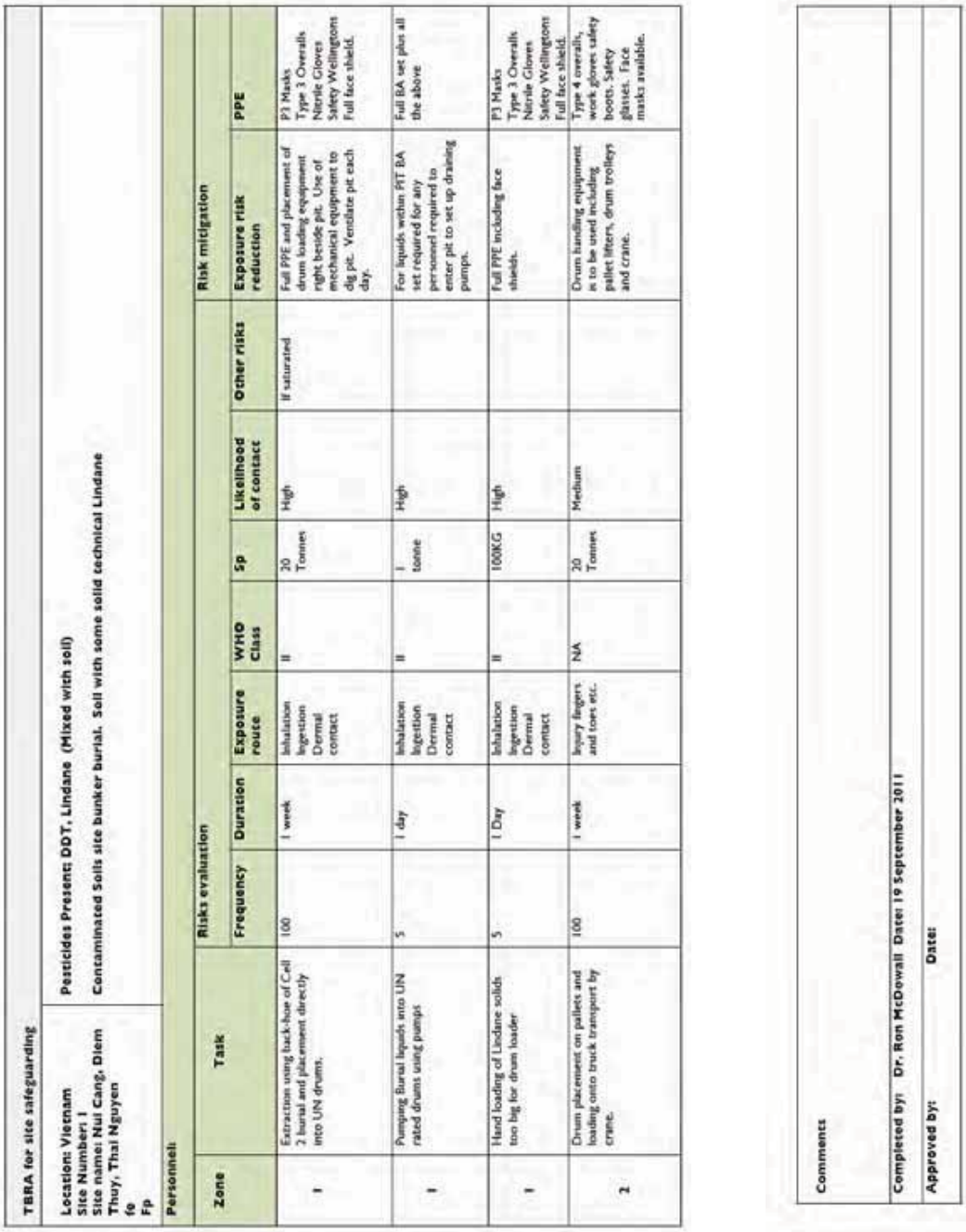
Emergency procedures

If a worker is injured within zone 1 and cannot be readily moved for fear of severe personal injury then members of the emergency services must go through the decontamination facility and place the correct attire before attending the victim. If the injured person is likely to lose his life before emergency personnel can be correctly attired then the emergency personnel must be immediately informed of this possibility, informed as to the danger of the hot zone and then asked to enter the zone without PPE. As soon as the victim is stabilised then the emergency personnel must exit the zone and proceed to full decontamination within the decontamination facility including full body showers and removal and disposal of all clothing. If significant amounts of free liquid pesticides or other hazardous materials are on the working platform during the emergency the personnel entering the zone must be provided with BA sets and after the event blood tests must be organised for those exposed.

A full set of flip chart emergency procedures has been included with the site activity SOPs. These flip charts are to be used during any emergency involving toxic hazardous waste. The charts are used by the supervisor and the relevant part is marked off during the emergency.

TBRA

Tool K of the FAO EMTK Tool Kit 4 provides a general introduction to risk assessment and management and outlines key risk reduction strategies that can be used to safeguard implementation. It then describes the TBRA method. This method, which has been developed over a number of years and is based on projects in many countries, uses the practical risk assessment during the implementation of obsolete pesticide and other hazardous chemical safeguarding projects.



TBRA for site safeguarding

Location: Vietnam
Site Number: 1
Site name: Nui Cang, Diem Thuy, Thai Nguyen
fo
Fp

Pesticides Present: DDT, Lindane (Mixed with soil)

Contaminated Soils site bunker burial. Soil with some solid technical Lindane

Personnel:

Zone	Task	Risks evaluation							Risk mitigation	
		Frequency	Duration	Exposure route	WHO Class	Sp	Likelihood of contact	Other risks	Exposure risk reduction	PPE
1	Extraction using back-hoe of Cell 2 burial and placement directly into UN drums.	100	1 week	Inhalation Ingestion Dermal contact	II	20 Tonnes	High	If saturated	Full PPE and placement of drum loading equipment right beside pit. Use of mechanical equipment to dig pit. Ventilate pit each day.	P3 Masks Type 3 Overalls Nitrile Gloves Safety Wellingtons Full face shield.
1	Pumping Burial liquids into UN rated drums using pumps	5	1 day	Inhalation Ingestion Dermal contact	II	1 tonne	High		For liquids within PIT BA set required for any personnel required to enter pit to set up draining pumps.	Full BA set plus all the above
1	Hand loading of Lindane solids too big for drum loader	5	1 Day	Inhalation Ingestion Dermal contact	II	100KG	High		Full PPE including face shields.	P3 Masks Type 3 Overalls Nitrile Gloves Safety Wellingtons Full face shield.
2	Drum placement on pallets and loading onto truck transport by crane.	100	1 week	Injury fingers and toes etc.	NA	20 Tonnes	Medium		Drum handling equipment is to be used including pallet liners, drum trolleys and crane.	Type 4 overalls, work gloves safety boots. Safety glasses. Face masks available.

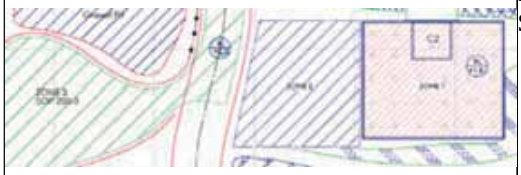
Comments

Completed by: Dr. Ron McDowall Date: 19 September 2011

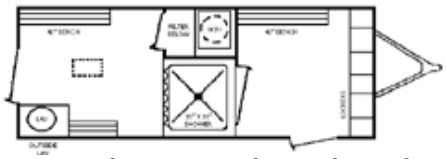
Approved by: Date:

Standard Operating procedures

POSTERS

Site Specific Standard Operating Procedure SOP – POSTER Site 1 Nui Cang, Diem Thuy, Thai Nguyen		Activity SOPs
	**Site Description and Zones** Site is concrete burial with nine cells • Zone 1 - Covers the whole of the burial chamber top - in red. Decon unit placed at top of Zone 2 with entrance adjacent Zone 1. Barrier tape red • Zone 2 - The area between the burial chamber and the side road - in blue. Barrier tape blue • Zone 3 - The area of the road and the laydown area - in green	**203-1** **203-2** **203-3**
   	**Main Activities** • Zone 1 Excavating Cell 2 only and placing contaminated soil into hopper for open head drum loading. Drums loaded and tops put on and lid bolts screwed up. • Zone 2 Filled drums received, labelled and loaded onto pallets, banded in groups of four and then placed by crane onto transport located in Zone 3. • Zone 3 Storage of materials, office and staff amenities and first aid and emergency equipment	**205-2** **205-3** **205-4** **205-5** **205-6** **205-7**
	**Personal protective equipment (PPE)**	**205-1**

	Zone 1	Zone 2	Zone 3	
Overalls	Type 3 (Yellow)	Type 5 (White)	Cotton	
Gloves	Nitrile (Green)	Leather	Leather	
Respiratory	P3 Full-face	Nil	Nil	
Eyes	Splash guard	Specs	Specs	
Boots	Safety Wellington	Safety boots	Safety boots	

	**Packaging materials** Steel drum Open Head UN rated 200litres Steel Drum Closed Head UN Rated 200 litres HDPE drum open head 200 litre	**205-5**
 	**Other equipment** Drum loading hopper Submersible pump Site set up warning tape, polythene sheeting, plywood sheets spillage kits Drum trolley Pallet lifter	**204-3**
 Location of emergency shower first aid and fire-fighting equipment is the decontamination unit. Located at the top of Zone 2 adjacent to Zone 1	Emergency procedures Flip Charts SOPs On-site Nominated person…….. Hospital …… Fire Service…… Local administration ……	300

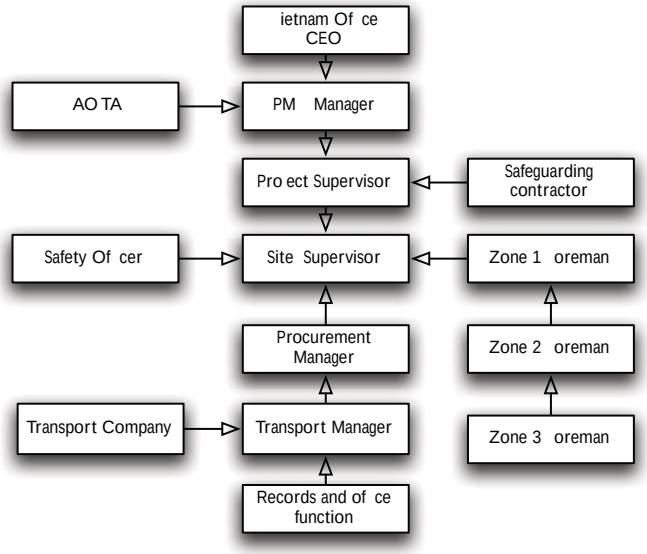
ealth, Safety Environment Plan

Site: NUI CANG, DIEM THUY, THAI NGUYEN
Date : 20 September 2011
Prepared by: Dr. Ron McDowall
Approved by:
Date of approval:

Background

This site consists of a series of concrete cells which have been loaded with contaminated soils Historically a Pesticide contaminated area was excavated and placed into a series of concrete cells The excavated area was back filled with clean soil All contaminated soil was moved to cells Cell 2 has been loaded with the most seriously contaminated soils and bulk pesticides ithin Cell 2 are large lumps of lindane and DDT in pure form The size of a cell is 3600mm x 3600mm, depth 4m The pesticide in the cell is 1m thick, at the depth of 3m uantity of soil mixed pesticide is 13m3 Estimated weight is 13 x 1 5 1 4 tonne During transferring to the Cell 2, the soils and pesticide as saturated The burial was closed with ventilation vents applied in March 2011 Sample of **o** in cell 2 Lindane 15ppm, DDT 30ppm, total organic Chlorine from 50 to 100 ppm ote that this is the soil surrounding the large lumps of pesticides (DDT and Lindane) See photo this page

Command Structure



Capacity status and training matrix

Capacity Buidling Matrix	Dependent	Guided	Assisted	Independent
Level of Support from Consultants and specilasts	High	Medium	Low	Occasional
Planning	Consultant provides project plan	PMU consultation with FAO	PMU managing most tasks Calls tenders	Day to day planning done by PMU and PS
Work Execution	All tasks performed by PMU team	PS carry out simple tasks but complex tasks by the PMU	PS do most work without assistance. Train the trainers is now reversed.	All tasks completed by PS
Quality Audiong	PMU Team	PMU checks most wo	PS & SS take responsibility for QA	SS take full responsibility for QA
Primary Responsibility	PMU Team	PMU works with PS to assist understanding responsibilities and outcomes	PS & SS understand they are responsible but may need help	SS responsible for all outcomes
Ownership	PMU Team	PMU works with PS to ensure things happen	PS make things happen with some SS input	SS make things happen
Training Matrix	Knowledge/Skill level - Prior	Training needed initial Stage	Training needed during	Followup Training
PMU Manager				
Project Supervisor (PS)				
Site Supervisor (SS)				
Foreman Zone 1				
Foreman Zone 2				
Foreman Zone 3				
Transport Manager				
Safety Officer				

Communication

Off site communications are included in the project strategy and this will involve briefing of the local people in the nearby housing, local hospitals, fire and ambulance, Local environmental protection agency offices and the provincial offices.

Residents contacts:.....

Emergency services contacts:.....

Local environmental agency contacts: .....

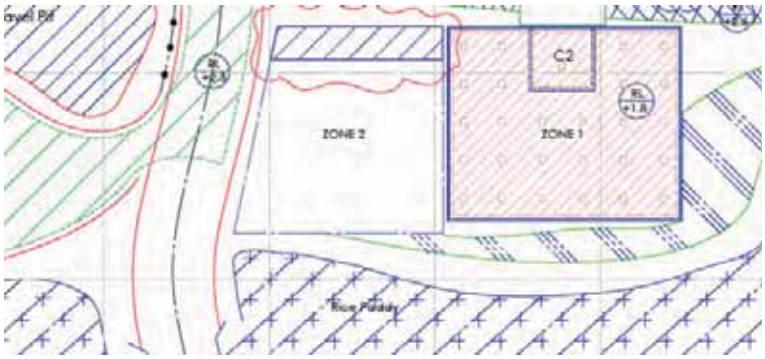
Local provincial government contacts: .....

On site. The management of communications on-site will be achieved through the adoption of a series of morning briefings and evening reviews of progress The site supervisors will take responsibility or the conduct of these meetings with the local labour force and will record all findings on the formats provided A system of daily briefings, daily progress reports and weekly summary reports will be used to ensure adequate documentation of the pro ect progress

ormats for daily briefing, progress reports and incident reporting are provided in the Annex

Zoning

The site has been completely zoned and the detail of this appears in the main section "ZONING" above. The three allocated zones can be seen in the drawing excerpt on this page.



Risk Assessment

The TBRA format has been completed and is included in the main section TBRA above See page 11

Standard Operating Procedures

The two types of SOPs are included in the main sections of this plan See page 13 for the SOP Poster and pages 1 -55 for the activity SOPs

Equipment

No.	PPE	Specification & supplier	Activity	Store	Location	No. workers	No days	No. item
1	Coveralls							
2								
3								
4								
5								
6								
							Total	
							Total	
7	RPE							
8								
9								
10								
							Total	
							Total	
11	Gloves							
12	Boots							
13	Eye							

Transport Rules

On site The Site Supervisor is to confirm that all vehicles are mechanically sound and fit for purpose, that all personnel operating the machinery are qualified to do so and that all other site personnel are informed where machinery is in operation and how they should behave when working in such an area or the purposes of the HSE plan, the Site Supervisor should maintain a file that contains, as a minimum

vehicle equipment maintenance and service history
vehicle equipment inspection certificate by nominated person
driver operator licence
driver operator training briefing notes
worker briefing notes

The site supervisor is also to prepare site map indicating the routes that vehicles and equipment can take to and from their work location be prepared and that all workers are familiar with the plan The plan should also indicate alternative access routes for workers

ehicles and equipment used on-site must be decontaminated completely before they are allowed to leave the site Alternatively, contaminated items such as wheels, excavation buckets and other components may be removed and remain in the hot zone at the end of the working day Decontamination procedures may include installation of a wheel-wash facility, which all vehicles will have to pass through before being allowed off-site Pressure washing of surfaces with an anionic surfactant detergent may also be considered In all cases, the decontamination must be completed in a suitably constructed designated decontamination area and all wash water must be collected and packaged as waste for disposal

Off site The transport of personnel to and from the workplace represents a significant risk to pro ect implementation The mobilization of pro ect personnel over long distances under difficult and often unfamiliar conditions can easily result in accidents The Site Supervisor will need to therefore indicate the steps have been taken to mitigate the risk to personnel as a consequence of mobilization to the work site The plan should therefore contain the following information

vehicle registration documents and all service maintenance records
driver licence and training certificates along with a record of performance
vehicle inspection checklists
vehicle equipment checklists

In order to discharge the Safety requirements and provide full environmental protection and to maintain the policy of risk minimisation the Transport Plan must be not only carefully adhered to but must be continuously monitored for any non compliance.

Elements of the Transport Safety & Environmental Plan

- river Briefing
- oute adherence
- Communication
- ehicle Inspection
- Load Security
- Emergency Procedure

Driver Briefing and PPE

The driver is to be fully briefed as to his duties of care during the transportation of the Pesticide waste to the disposal site. This briefing should be over and

above the specific driver training and should be delivered on the day of dispatch. This briefing shall include the following point by point schedule.

- Is the driver of good health and sobriety
- Is the driver fully aware of the route
- Brief the driver of any changes to route, timing, destination, road hazards.
- Brief the driver as to communication check times to escort and control
- Brief the driver as to rest stops (one per hour)
- Brief the driver to load check stops (one per hour)
- Check driver has loaded PPE Kit Bag and knows how to use it.
- Check driver is aware of his duties if escort vehicle delayed
- Check emergency procedures and notification schedule is in drivers cab
- Check driver is aware of how to cope initially with emergency

Route and adherence

The planned route shall be shown on a road map and placed in the cab after driver briefing. The points of radio progress reports are to be indicated on the map. Should it become necessary to change the route during the course of the delivery the driver shall advise the escort vehicle and pull over when safe to do so and await authorization to alter the route.

Communication

The safety of the Pesticide waste delivery is dependent on good communication. No delivery of Pesticide waste shall commence until a full communication check with the escort vehicle at the project managers office has been effected. No containers shall be delivered until the communication check has been carried out and proved effective. The project managers office is to be located at the Clearance Contractors main site and it to be manned continuously during container delivery. The person in charge of the project managers office shall be fully conversant with the route and all its particulars. e shall be capable of accepting full control responsibility during any incidents.

Vehicle

Inspect the vehicle for tyre or suspension damage and look for obvious mechanical reasons for the vehicle to be unfit for duty. Also inspect the COF.

Load Security

The supervisor and the driver must together inspect the load and determine that the load is correctly fastened onto the container truck by its locking turrets. No container is to be dispatched unless the container is locked in position and that the locking has been witnessed by the supervisor and the driver. The load security is to be checked at least once per hour or 100Km

Emergency Procedure and ERU vehicle

All trans shipment of Pesticide PCB waste aste to the disposal facility shall be covered by a E U the entire route up to receipt and acceptance. The E U personnel are to be fully trained in all aspects of spill control and are to assume full responsibility for the cargo during all aspects of the delivery. Any route changes must be authorized by the project manager or PMU.

Transport forms

The transport forms 1, 2, 3, 4and 5 (in annex) are to be completed during the pro ect

Health

For the purposes of safeguarding of obsolete pesticides it is recommended that, as a minimum, all project staff complete a full medical visit (including blood enzyme tests) before, during (every three to six months) and after the project is completed. The aims of the tests are to:

- establish an initial minimum level of health for all workers (safeguarding is often physically demanding and, to be effective, workers should be fit);
- set a physiological baseline to allow for the monitoring of any changes during project implementation (changes in cholinesterase levels in the blood can indicate exposure to organophosphate pesticides and may result in workers being given other duties;
- similarly, changes in organochlorine pesticide levels in fat tissue can indicate uncontrolled exposure);
- give a final health check once all operations are over to ensure that there has been no adverse impact on worker health during the implementation of the project.

In addition to the *t f e* aspects above, the completion of comprehensive health monitoring also contributes to the overall risk-management strategy. The risk from workers of claims of impaired health as a result of their activities requires that the project-management team must be able to prove – using medical evidence – that no such impact has occurred. The lack of clear medical evidence leaves the project open to claims and associated costs for compensation. Linked to health surveillance is the recording and reporting of *st ti e in ies n e te i nesses.* This data can be used as a good indicator of safe project implementation. It is widely used in the chemical and construction industries to demonstrate that operations have been completed safely with no impact on workers. This indicator, linked with the results of medical surveillance
as outlined above, provides strong evidence that projects are being managed, supervised and implemented to the required standard of HSE compliance.

Refer to the Forms of compliance in the annex of this document.

Monitoring

uality assurance for equipment and services

Within the structure of the project plan (HSE) is to be a detailed QA plan that covers all sections of the project plan. This QA structure is to be restated in the Forms in the annex of this document which become the primary operating documentation on sites. The site supervisor is to be responsible for the application of this documentation and assure that the QA reports are properly filled out on a continuous basis.

Each of the sections that make up this project plan are to have a

dedicated QA section that is to spell out that adherence to the Quality Policy and the Environmental Policy is mandatory and that the procedural structure is to be designed to reflect that. The QA system is to be presented as detailed site reports as to site layout,

preparation etc as well as a series of Questions that are required to be answered continuously. These questions are to be provided with compliance and non compliance tick boxes. For the non compliance response there is to be an instruction as to the affirmative action required of the supervisor and the NCR to be produced. The NCR is to be faxed or emailed immediately to the project manager.

The Project manager in partnership with the Quality Manager and the Environmental Engineer is to analyse the QA reports and all site related reports for compliance with the Company's obligations to the Quality manual and the Environmental Policy Manual on a weekly basis during project activity. Any NCR that is unresolved by a close out report is to be brought to the attention of the Project Director with the appropriate recommendations to suspend the works.

Attendance on site for the project manager, technical assistant, Quality Manager, and the environmental Engineer should be carefully rotated so that there will tend to be a continuous upper management presence on site at all times. All of these personnel are to be instructed to have the Environmental Policy foremost in their thinking at all times. At all times the personnel must be instructed that the environmental performance of their activities is to be continuously monitored by the QA system.

on on o n e n o e e e en e on

The QA system as it appears in the includes a Non Conformance Report form along with an action plan and close out documentation. In addition to this structure is a formal report structure that allows inadequate procedures to be identified and indicate the areas for improvement or modifications that are required. The reporting structure is also to have the capacity to evaluate the application of the Environmental Policy and highlight any areas that could be used for improvement or areas that should be updated or changed given changed circumstances

e o

Complete site records are to be kept of all daily site activity including site diary, visitor registers, waste registers, delivery of materials registers, training registers, medical records, Non Conformance Reports, QA Audit reports, packaging records, Waste weighing records, container records.

ANNEXURE

Annex 1 Site Specific Activity SOPs

Annex 2 Site Drawings

Annex 3 Transportation forms

Annex 4 Project forms

Site Specific Activity SOPs	
Activity Specific SOP-202	**e e on**
Prepared by : Dr. Ron McDowall Date 20 September 2011	Approved by : Date:
Background	Recovery, packing and transportation of the contaminated soils located in Cell 2 of the burial structure
Aims	This SOP involves the preparation of the site prior to the removal of the contaminated soil. There are three specific SOPs covering the establishment of the amenities, and storage area, removal of fences, drains and embankments. The final SOP is concerned with the establishment of the operating platforms and the grading of zone 2.
Equipment	Back hoe and front end loader
Environmental protection	None required
Worker protection	Safety boots Safety glasses
Detailed activities	Refer to specific SOP activity flow sheets. SOP-202-1 Establishment of site SOP-202-2 Removal of fencing, drains & embankment SOP-202-3 Crane and back hoe operating platforms
Special instructions	Reference SOP 202-1,2,3 Drawings 102-1 102-2 102-3

ANNEX 1 Site Specific Activity SOPs

SOP 202 - SITE PREPARATION

SOP 202-1 ESTABLISHMENT OF SITE
Step 1

Site Preparation - Step 1

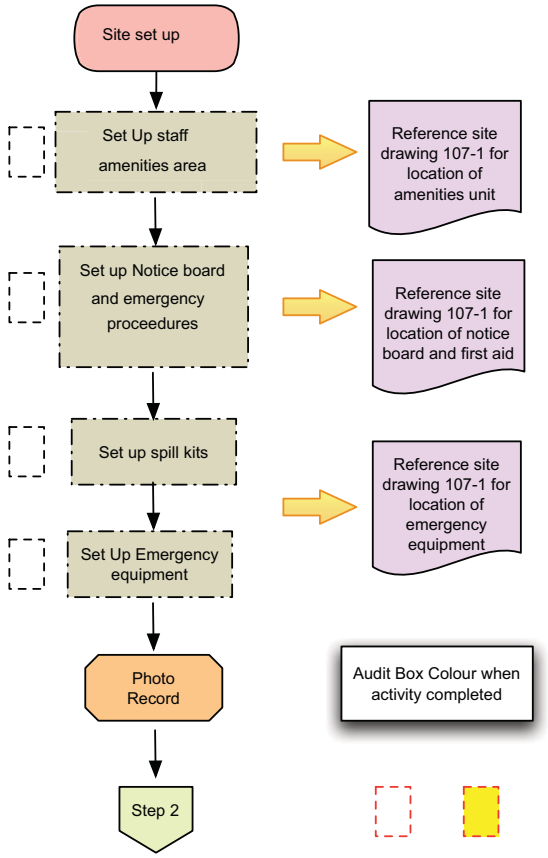
This SOP involves the set up and preparation of the site. There are five major components of this step of the SOP.

The first activity is the establishment of the amenities. This includes the staff lunch room and overhead climate protection area. It also includes the office and power generation system, computers, cell phones etc. Also included is the establishment of stores and equipment.

The second activity is the location and establishment of the notice board.

The third activity is the provisioning and location of spill kits.

The fourth and final activity of this SOP is the establishment of emergency equipment. This includes fire fighting equipment and first aid equipment.



SOP 202 - SITE PREPARATION

SOP 202-2 LANDSCAPE PREPARATION
Step 2

Site Preparation Step 2

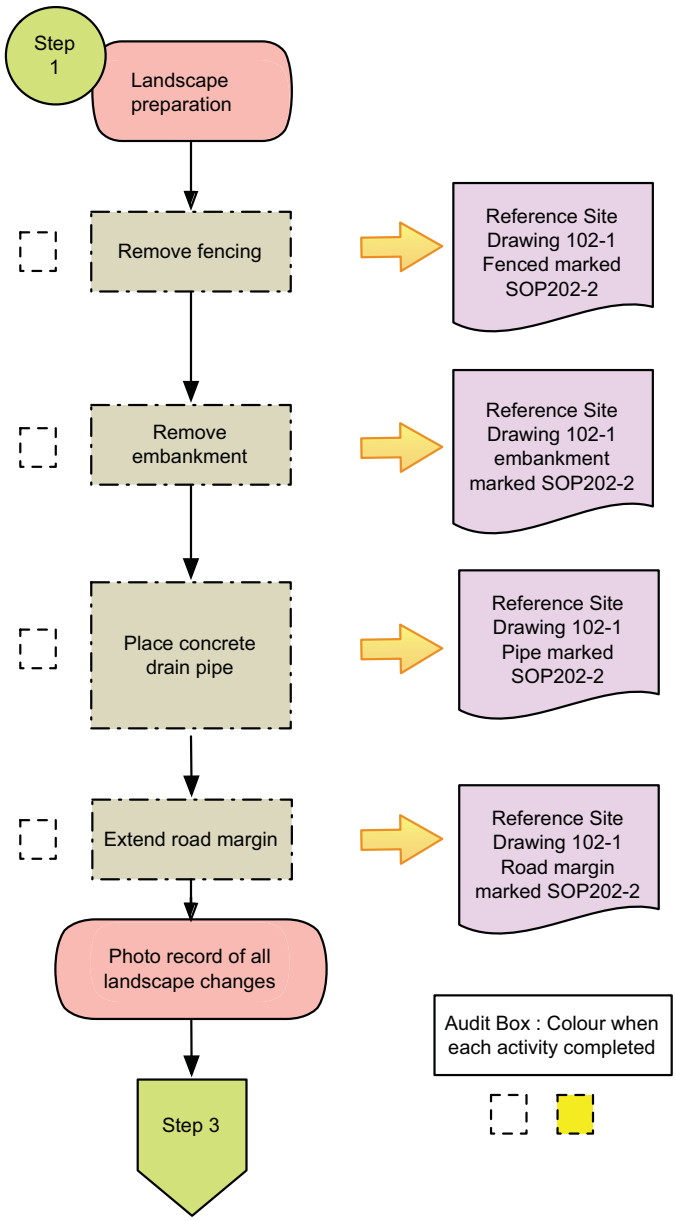
This SOP involves the preparation of the landscape. There are five major activities of this step of the SOP.

The first activity involves the removal of the existing fencing around the site. The material is to be removed in a manner that allows its reestablishment after the project is completed.

The second activity involves using the back hoe machine to remove the embankment along side of the access road, again in a manner that allows re-establishment after the project is completed.

The third activity involves the placement of a 400 mm concrete drainage pipe (4 metres long) to take the drain water so that the operating platform can be established above the drain on the side of the access road.

The fourth activity is the extension of the access road margin so that traffic can pass when the crane or the backhoe are on the operating platforms.



SOP 202 - SITE PREPARATION

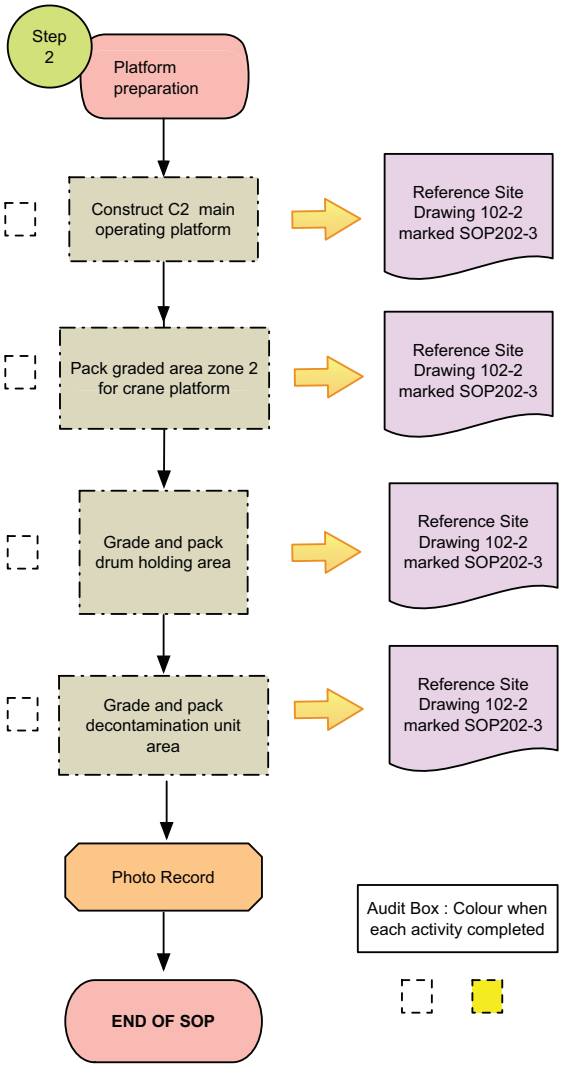
SOP 202-3 OPERATING PLATFORMS
Step 3

Site Preparation Step 3

This SOP involves the preparation of the landscape. There are four major activities of this step of the SOP.

The first activity involves the establishment of the C2 main operating platform. This is done when the embankment is removed and the drain pipe placed. At that point the platform is established with the preloading of the operating area.

The second activity is the grading of the zone 2 area. The few trees that populate the zone 2 area are to be removed and grade material is to be taken from the source nearby and placed into the zone 2 area and the backhoe used to preload the area. The grade is to be leveled up to the top of the concrete of the bunker, so that zone 2 to zone 1 is at the same level. The grading also covers the drum holding area and the decontamination area, activities 3 and 4.



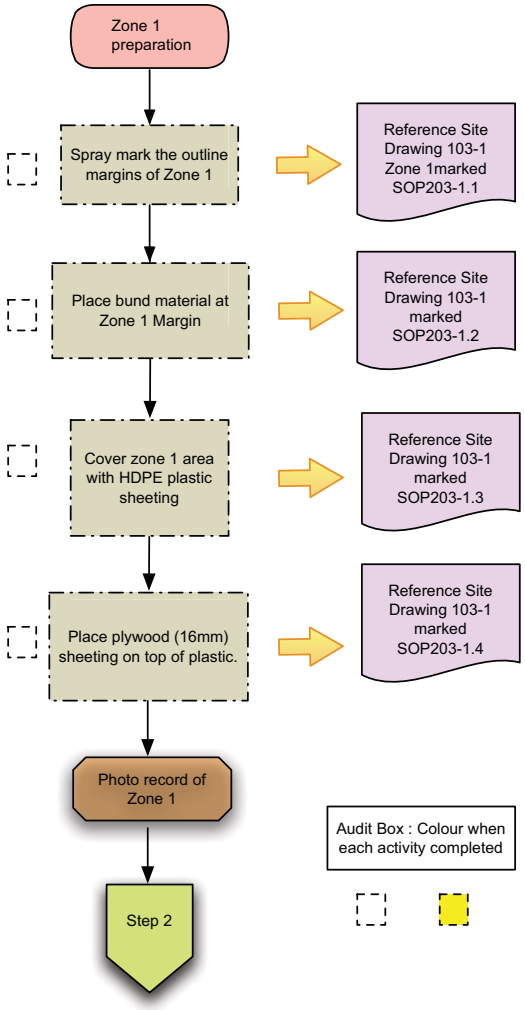
Site Specific Activity SOPs	
Activity Specific SOP-203	**Zone**
Prepared by : Dr. Ron McDowall Date 20 September 2011	Approved by : Date:
Background	Recovery, packing and transportation of the contaminated soils located in Cell 2 of the burial structure
Aims	This SOP involves the preparation of the operating Zones 1,2 and 3. This involves placement of plastic sheets, plywood sheets, barrier tapes and the location of the decontamination facility.
Equipment	Decontamination trailer Plastic sheeting Plywood sheets Waste drums
Environmental protection	All zone sheeting established
Worker protection	Safety boots Safety glasses
Detailed activities	Refer to specific SOP activity flow sheets. SOP-203-1 Zone 1 SOP-203-2 Zone 2 SOP-203-3 Zone 3 SOP-203-4 Decontamination Facility SOP-203-5 Barrier and demarkation
Special instructions	Reference SOP 203-1,2,3,4 & 5 Drawings 103-1 103-2 103-3 103-4 103-5

SOP 203 - ZONES

SOP 203-1 ZONE 1 PREPARATION
Step 1

Zone 1 Preparation

This SOP deals with the setting up of Zone 1. Zone 1 is the hot zone and is set up first. Spray mark out the outline boundary of Zone 1 which in this case is the top of the burial chamber. Bunding material is to be placed around the margin. Use timber at leads 125mm high. Next the zone is covered with HDPE plastic sheeting and the joints taped. On top opt the plastic sheeting place plywood sheets.



SOP 203 - ZONES

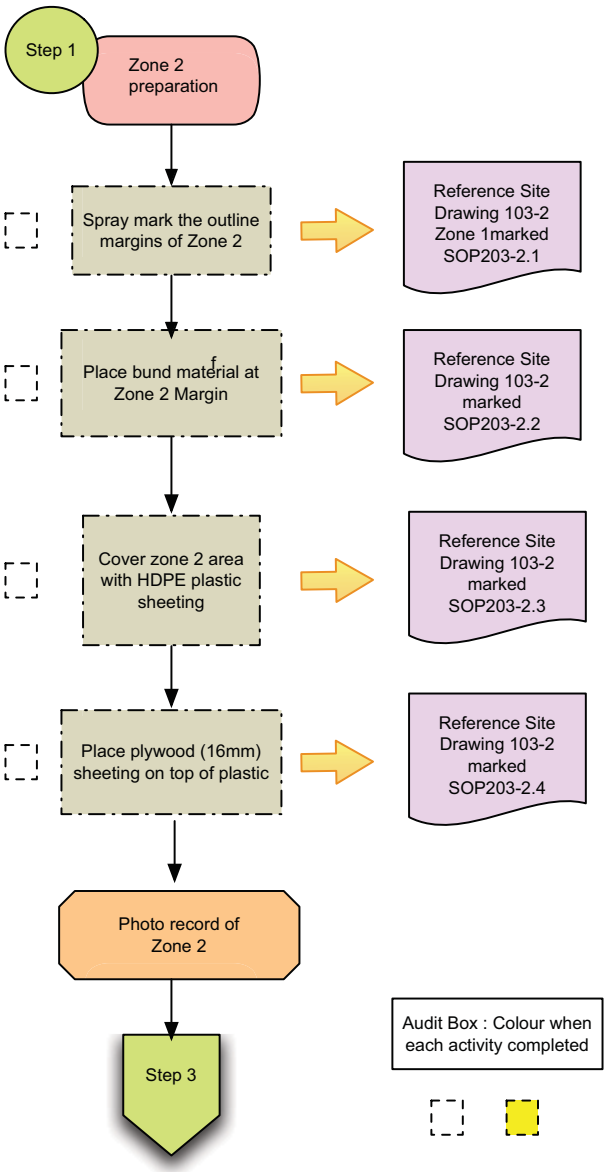
SOP 203-2 ZONE 2 PREPARATION
Step 2

Zone Preparation - Step 2

Zone 2 Preparation

This SOP deals with the setting up of Zone 2.

Spray mark out the outline boundary of Zone 2 which in this case is the area from zone 1 to the side road. . Bunding material is to be placed around the margin. Use timber at leads 125mm high. Next the zone is covered with HDPE plastic sheeting and the joints taped. On top of the plastic sheeting place plywood sheets.



WORK PROCEDURE INSTRUCTION

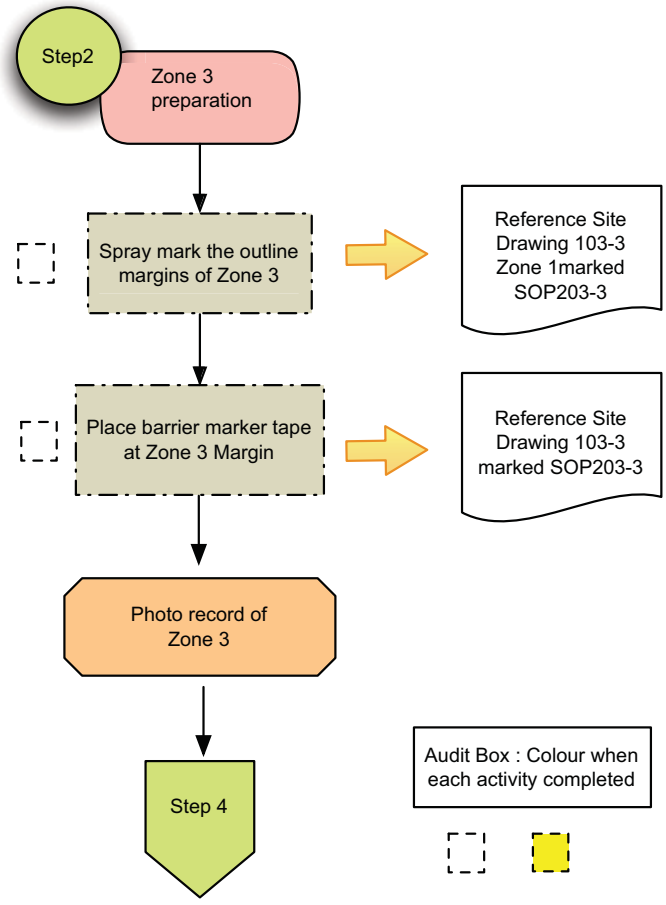
SOP 203-3 ZONE 3 PREPARATION
Step 3

Zone 3 Preparation

This SOP deals with the setting up of Zone 3.

Spray mark out the outline boundary of Zone 3 which in this case is the area of the side road and the lay down area. Bunding is not required.

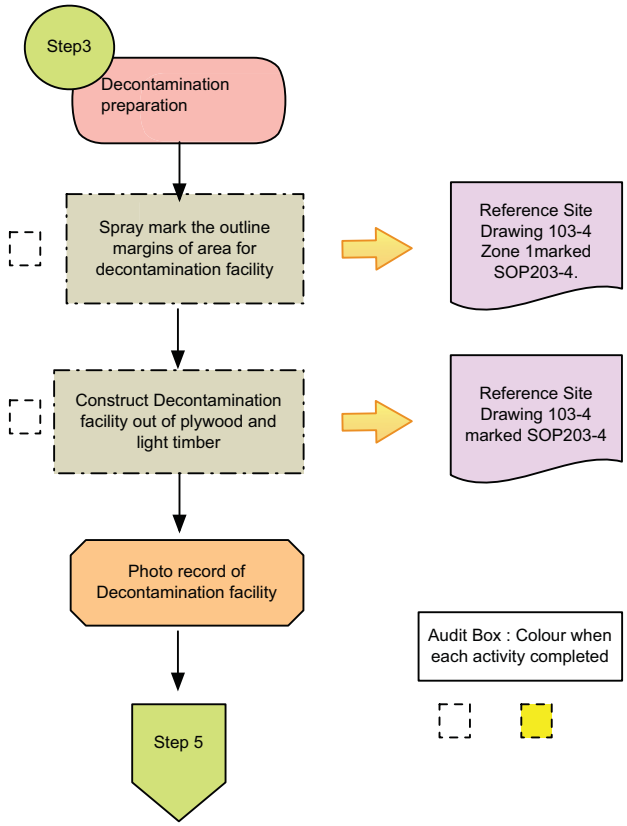
Mark area with green marking plastic tape.



SOP 203 - ZONES

SOP 203-4 DECONTAMINATION FACILITY
Step 4

Decontamination facility
Preparation - Step 4



Decontamination facility

This SOP deals with the location of the decontamination facility. The decontamination facility will be a trailer which is complete with power generator, water and waste water tanks etc..

Spray mark out the outline boundary of of the decontamination facility location at the top of zone 2.

Place trailer within this marked area and surround with danger tape.

SOP 203 - ZONES

SOP 203-5 BARRIER MARKING AND DEMARKATIONS
Step 5

Barriers and demarkation

This SOP deals with the barrier marking.

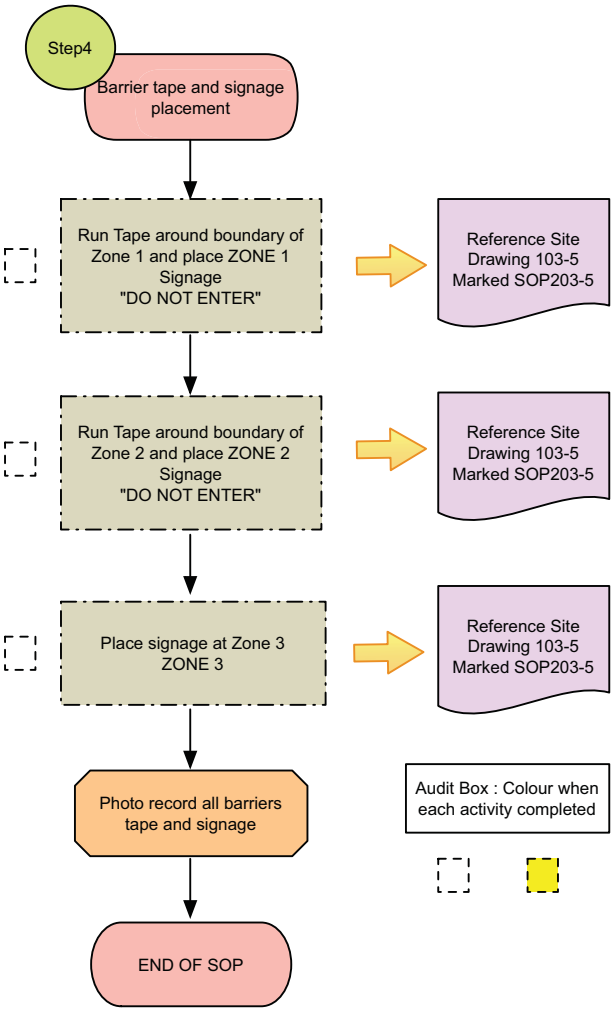
Plastic tape Red/Blue is to be run around the perimeter of Zone 1 and signage placed.

Plastic barrier tape is to be run around the perimeter of Zone 2 Blue tape. and do not enter signage placed.

Plastic tale is to be run around Zone 3 Green tape.

Spray mark out the outline boundary of of the decontamination facility location at the top of zone 2.

Place trailer within this marked area and surround with danger tape.



Site Specific Activity SOPs	
Activity Specific SOP-204	**en o on**
Prepared by : Dr. Ron McDowall Date 20 September 2011	Approved by : Date:
Background	Recovery, packing and transportation of the contaminated soils located in Cell 2 of the burial structure
Aims	This SOP involves the location of the crane for Cell 2 lid removal and and the back hoe for soil excavation. In addition the location os the drum loading hopper is included.
Equipment	Drum loading hopper Crane Back hoe
Environmental protection	All zone sheeting in place
Worker protection	Safety boots Safety glasses
Detailed activities	Refer to specific SOP activity flow sheets. SOP-204-1 Crane location for lid removal SOP-204-2 Backhoe location for excavation cell 2 SOP-204-3 Drum loader hopper location
Special instructions	Reference SOP 204-1,2, & 3 Drawings 104-1 104-2 104-3 105-1

SOP - 204 EQUIPMENT LOCATIONS

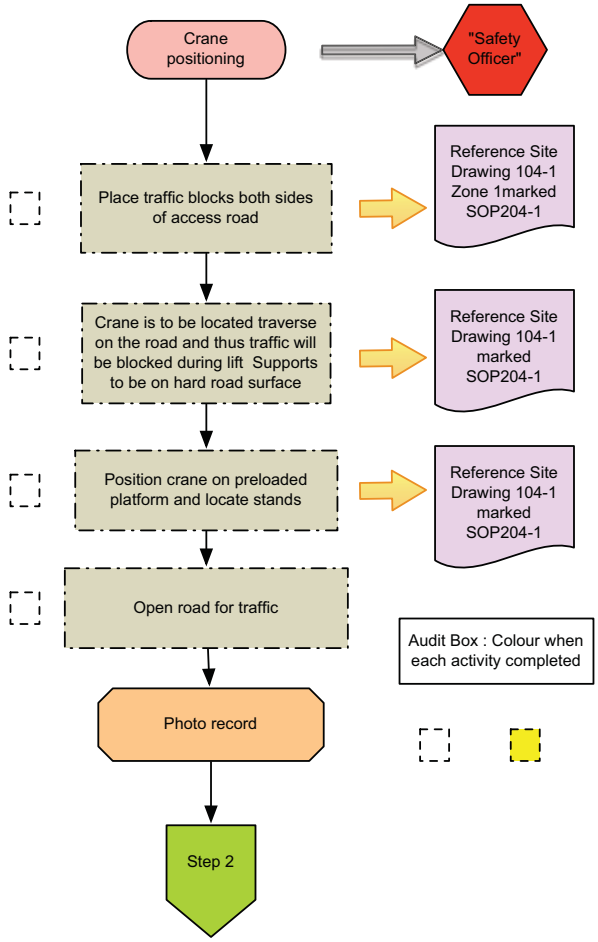
SOP 204-1 Crane position for cell 2 lid removal
Step 1

Crane position

This SOP deals with the location of the crane prior to opening the burial cell 2 lid.

Crane is to be positioned on the hardened area as shown.

Safety office is required to monitor traffic and personnel near crane.



SOP - 204 EQUIPMENT LOCATIONS

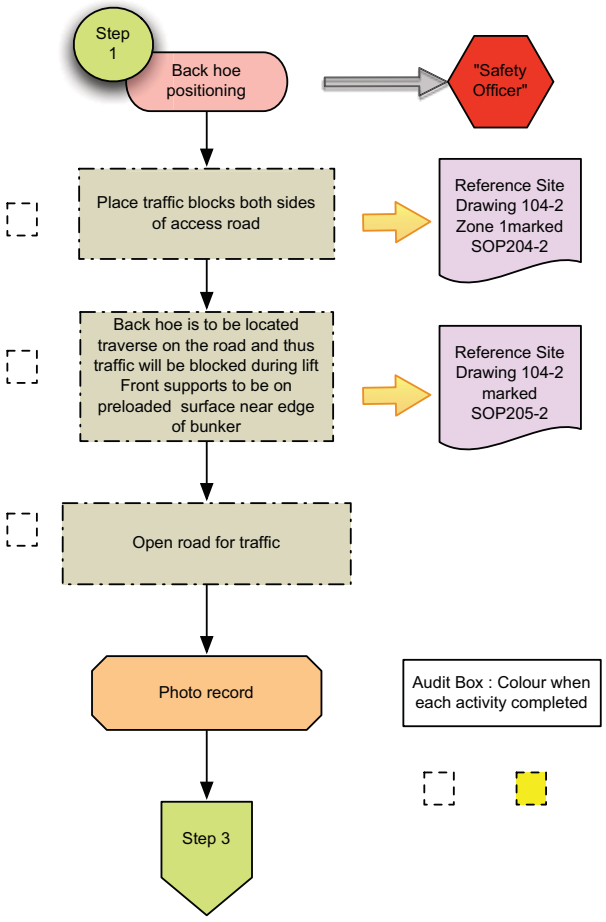
SOP 204-2 Back Hoe position for C2 Cell soil removal
Step 2

Back hoe position

This SOP deals with the location of the back hoe prior to removal of contaminated soils from the burial cell 2 and after the lid removal.

Back hoe s to be positioned on the hardened area as shown.

Safety office is required to monitor traffic and personnel near back hoe.



SOP - 204 EQUIPMENT LOCATIONS

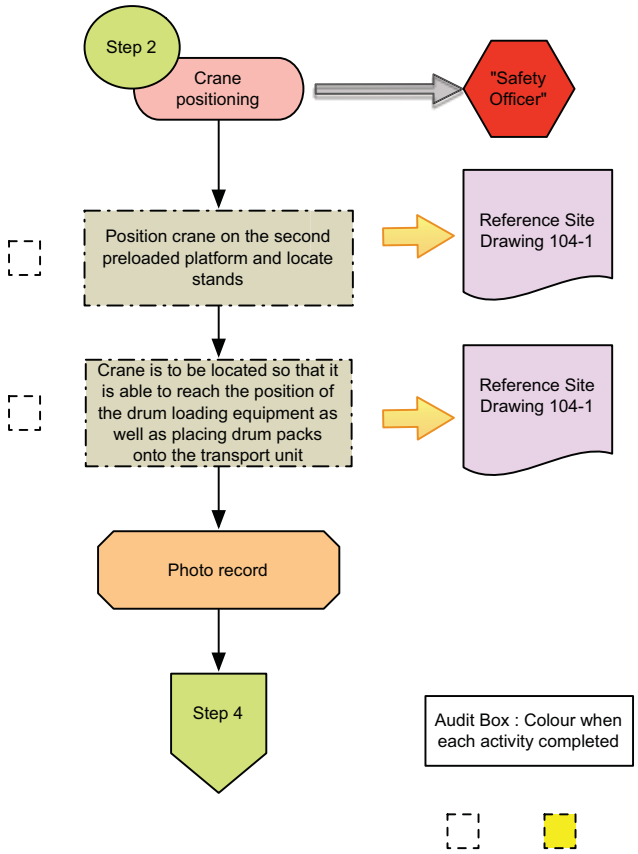
SOP 204-3 Crane position for drum equipment and drum loading Step 1

Crane position

This SOP deals with the location of the in zone 2 for drum loading.

Crane is located on the hardened area in zone 2.

Safety office is required to monitor traffic and personnel near crane.



SOP - 204 EQUIPMENT LOCATIONS

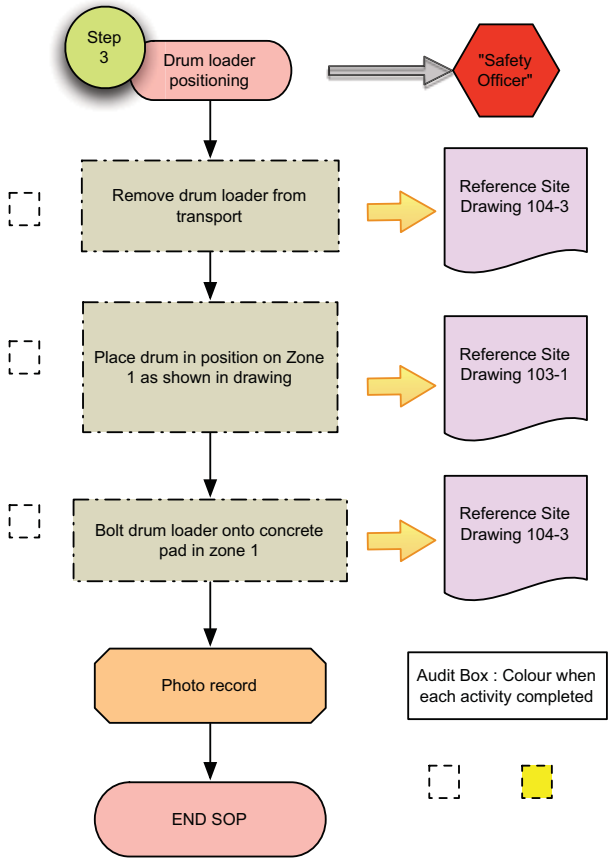
SOP 204-4 Positioning of drum loading equipment
Step 4

Drum Loading Hopper

This SOP deals with the location of the drum loading hopper. The hopper is to be placed right up to the edge of the cell 2 and bolted into place using concrete anchors.

Crane is located on the hardened area in zone 2 for the lift and place,end of the hopper.

Safety office is required to monitor traffic and personnel near crane.

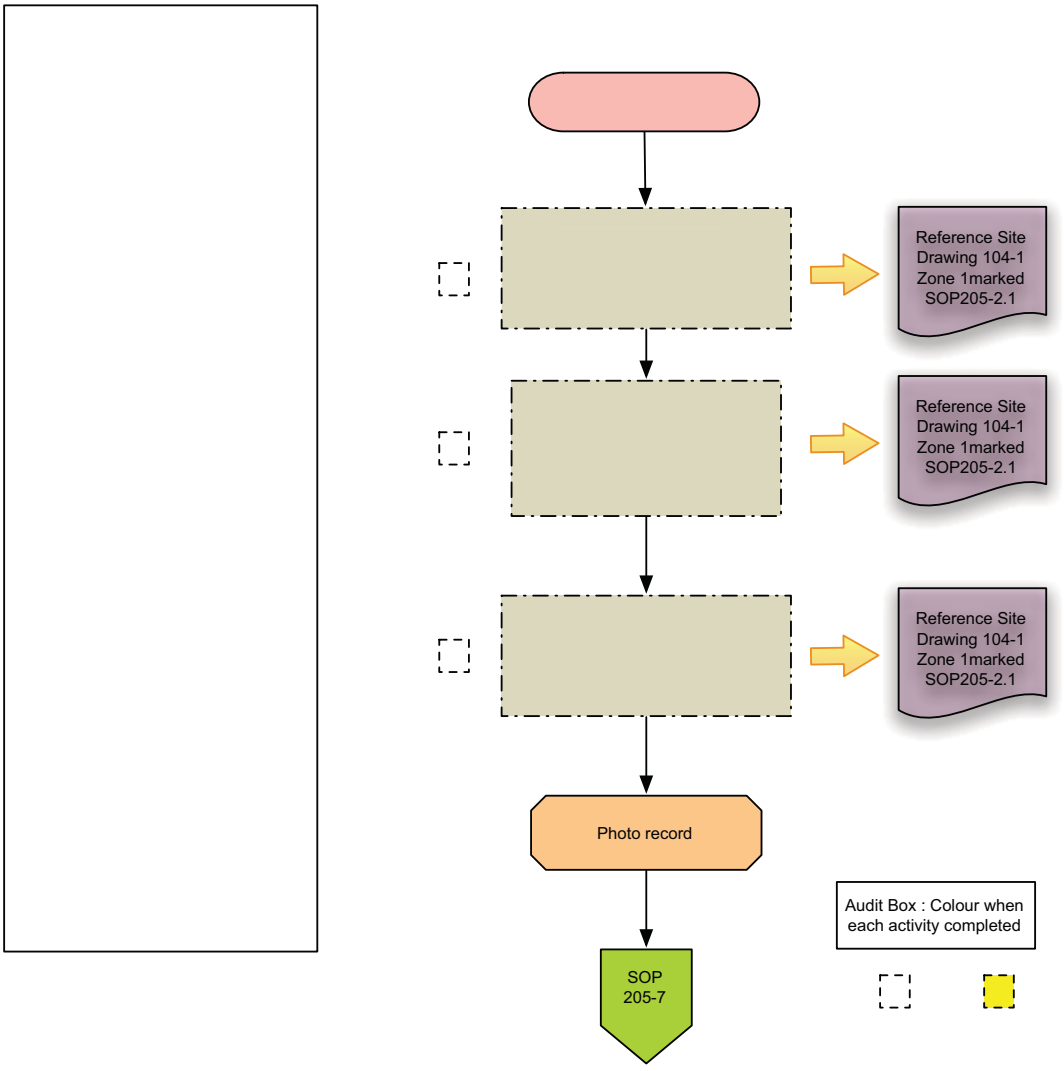


Site Specific Activity SOPs	
Activity Specific SOP-205	**e n**
Prepared by : Dr. Ron McDowall Date 20 September 2011	Approved by : Date:
Background	Recovery, packing and transportation of the contaminated soils located in Cell 2 of the burial structure
Aims	This SOP involves the safeguarding and packaging of the contaminated soil located within Cell 2.
Equipment	Drum loading hopper Crane Back hoe drums Drum handling equipment
Environmental protection	All zone protection sheeting in place
Worker protection	Zone 1 Full PPE, Zone 2 PPE Safety boots Safety glasses Safety gloves Face shields
Detailed activities	Refer to specific SOP activity flow sheets. SOP-205-1 PPE SOP-205-2 Cell lid removal SOP-205-3 Material excavation SOP-205-4 If waste saturated SOP-205-5 Drum preparation and loading SOP-205-6 Labeling and recording SOP-205-7 Short term storage drums
Special instructions	Reference SOP 205-1,2, 3,4,5,6 & 7

SOP 5 - SAFEGUARDING

SOP 205-6 Safeguarding - PPE & HSE

Step1



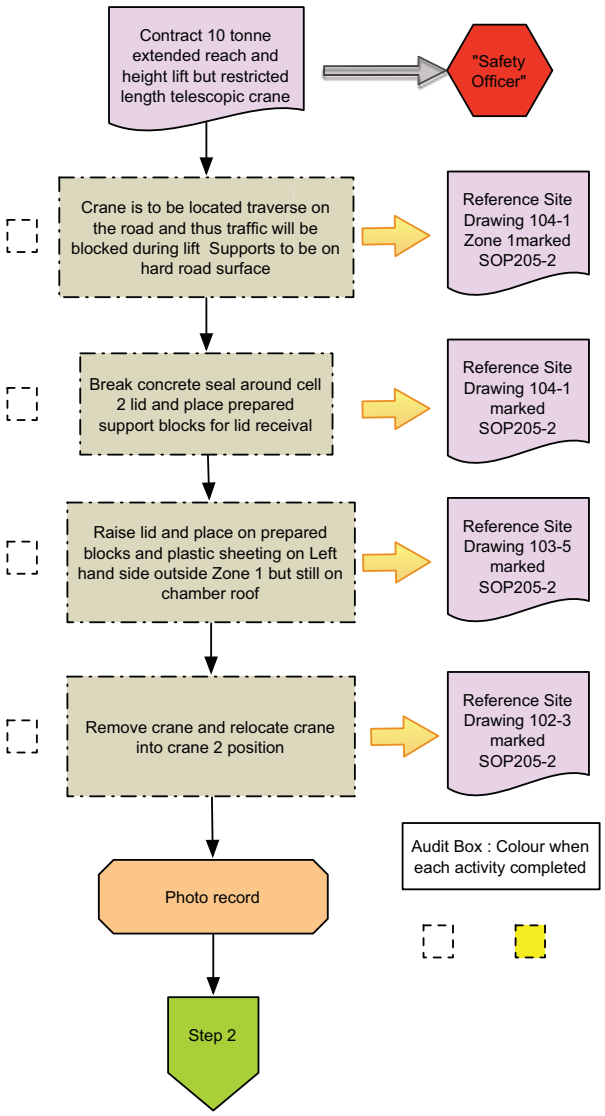
SOP 5 - SAFEGUARDING

SOP 205-2 Safeguarding - Cell 2 lid removal
Step 2

Cell 2 lid removal

This SOP deals with the removal of the Cell 2 lid. This lid is held in place by a concrete margin that must be broken away and the crane connected to the lifting lugs and the lid removed and placed on the top of the burial chamber as shown in the drawing.

Safety office is required to monitor traffic and personnel near crane.



SOP 5 - SAFEGUARDING

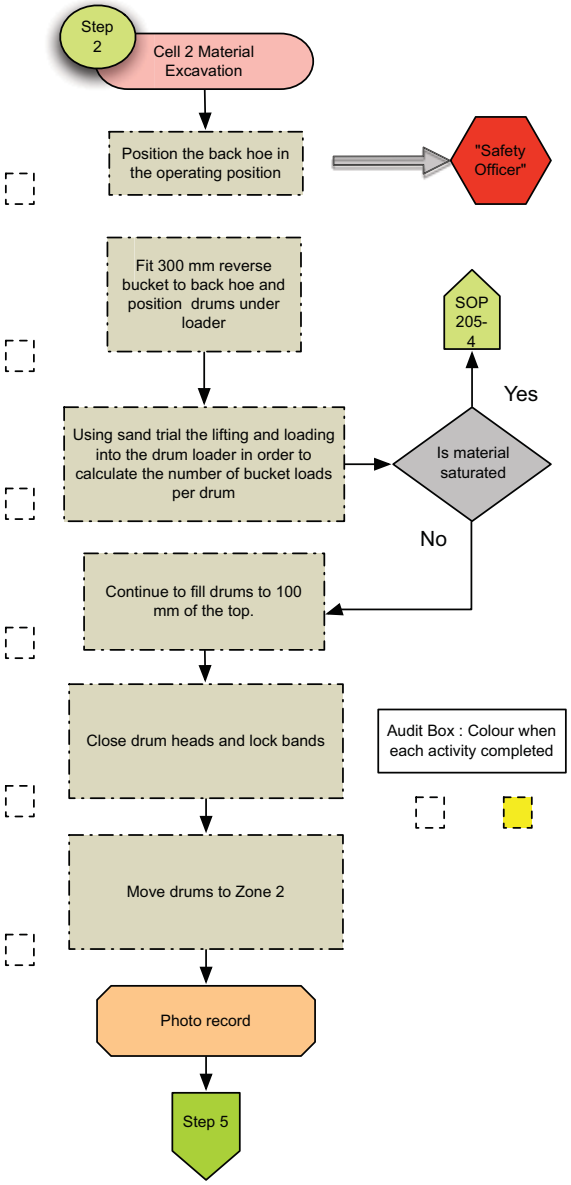
SOP 205-3 Safeguarding - Cell 2 Material Excavation
Step 3

Cell 2 soil removal

This SOP deals with the removal soil within Cell 2. The back hoe must be located and the small reverse bucket fitted

If the material is saturated than SOP 205-4 must be instigated. Soil is removed and placed directly into the drum loading hopper. Open head drums are placed beneath the hopper. A sand trial should be conducted before loading contaminated soil.

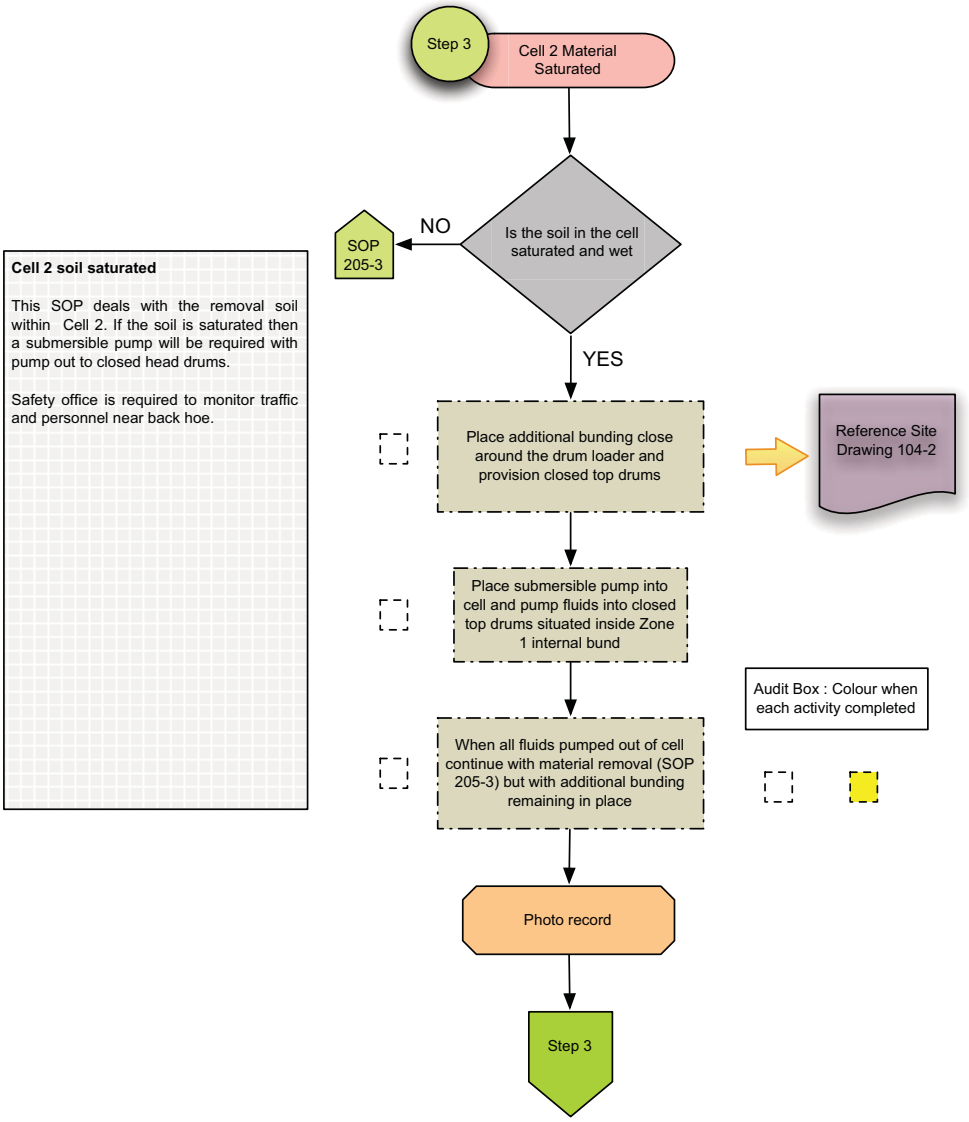
Safety office is required to monitor traffic and personnel near back hoe.



SOP 5 - SAFEGUARDING

SOP 205-4 Safeguarding - Cell 2 Material Saturated

Step 4



Cell 2 soil saturated

This SOP deals with the removal soil within Cell 2. If the soil is saturated then a submersible pump will be required with pump out to closed head drums.

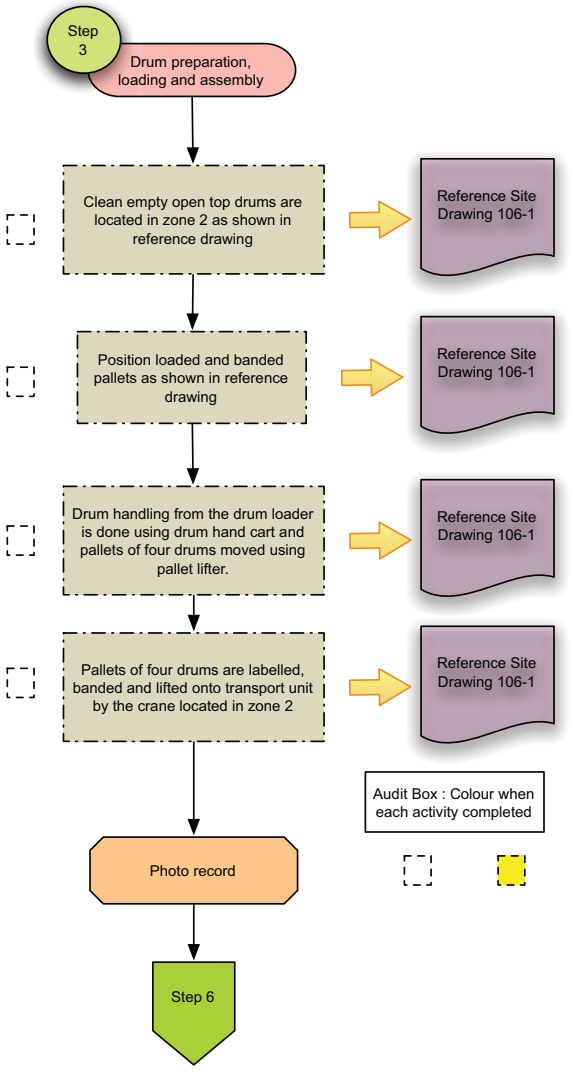
Safety office is required to monitor traffic and personnel near back hoe.

SOP 5 - SAFEGUARDING

SOP 205-5 Safeguarding - Drum preparation and loading
Step 5

Drum preparation

This SOP deals with the provision of UN rated drums and drum loading. The SOP also covers the banding and placement if drums on pallets using pallet lifter and drum handling equipment. SOP 205-6 covers labeling and recording.



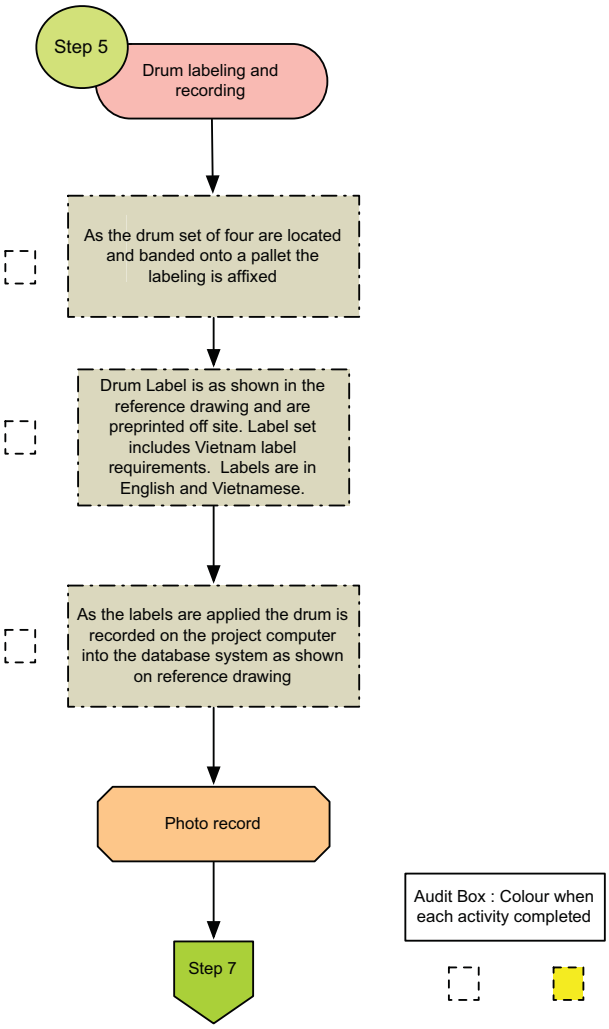
SOP 5 - SAFEGUARDING

SOP 205-6 Safeguarding - Labeling and recording

Step 6

Drum labeling and recording

This SOP deals with the provision of UN labeling and recording. All drums are to be provided with labels that are marked with drum number UN name.

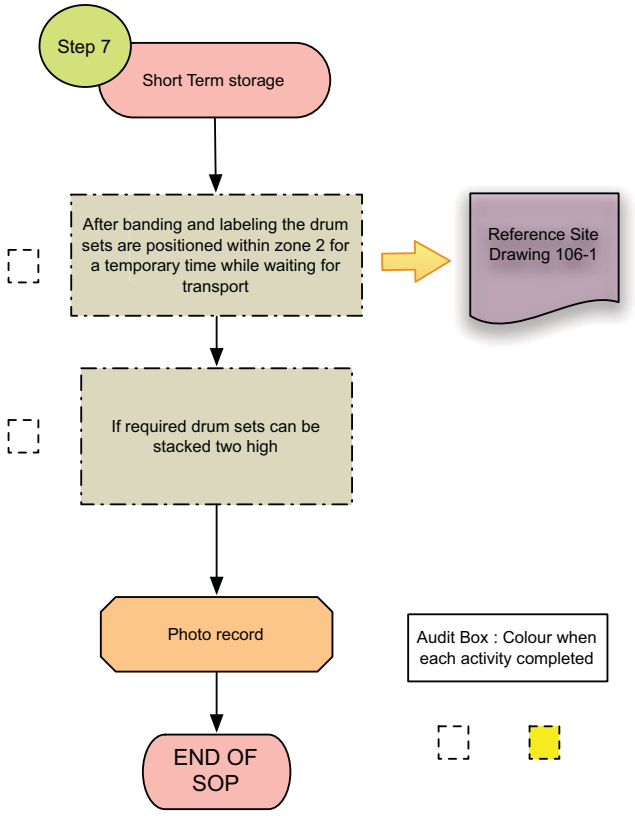


SOP 5 - SAFEGUARDING

SOP 205-7 Safeguarding - Short Term storage of filled drums
Step 7

Drum storage

This SOP deals with the storage of drums loaded on pallets and banded.
and located in Zone 2.



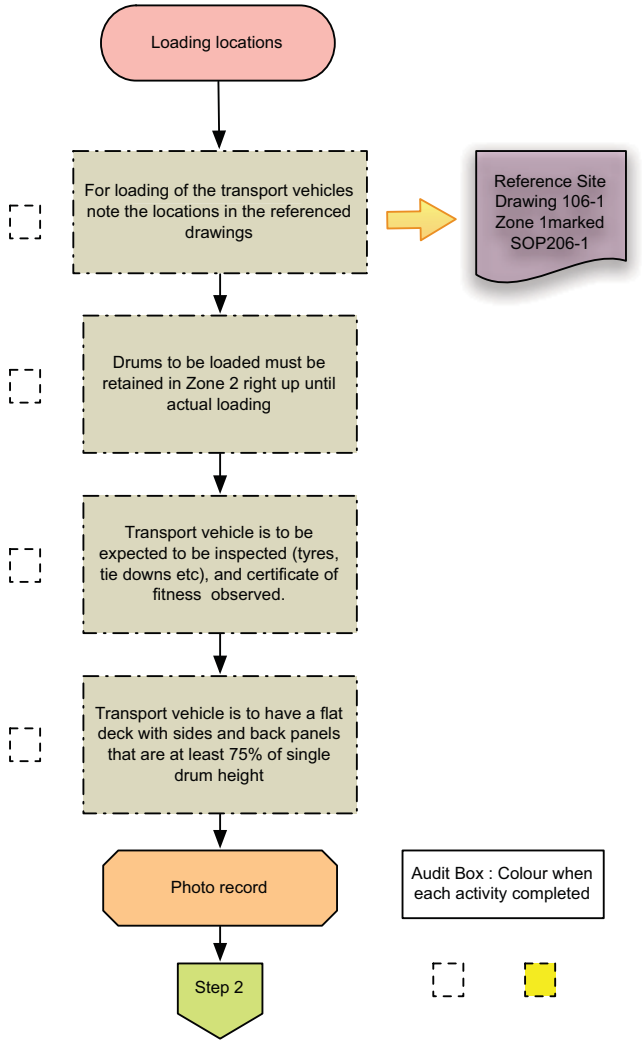
Site Specific Activity SOPs	
Activity Specific SOP-206	**n o o n**
Prepared by : Dr. Ron McDowall Date 20 September 2011	Approved by : Date:
Background	Recovery, packing and transportation of the contaminated soils located in Cell 2 of the burial structure
Aims	This SOP involves the loading of the drums onto the transport unit
Equipment	Drum pallet loader, drum lifter Pallets Crane Binding machine labeler
Environmental protection	All zone protection sheeting in place
Worker protection	Zone 2 PPE Safety boots Safety glasses Safety gloves Face shields
Detailed activities	Refer to specific SOP activity flow sheets. SOP-206-1 Location truck,drums, crane SOP-206-2 Drum loading on transport SOP-206-3 Transport vehicle labeling SOP-206-4 Driver training SOP-206-5 Escort vehicle
Special instructions	Reference SOP 206-1,2, 3, & ,5 Drawing 106-1

SOP 206 - TRANSPORT LOADING

SOP 206-1 Locations for trucks, crane and drums
Step 1

Loading locations

This SOP covers the loading of pallets of drums onto the transport vehicle. Vehicle is to be inspected prior to loading and driver training completed.

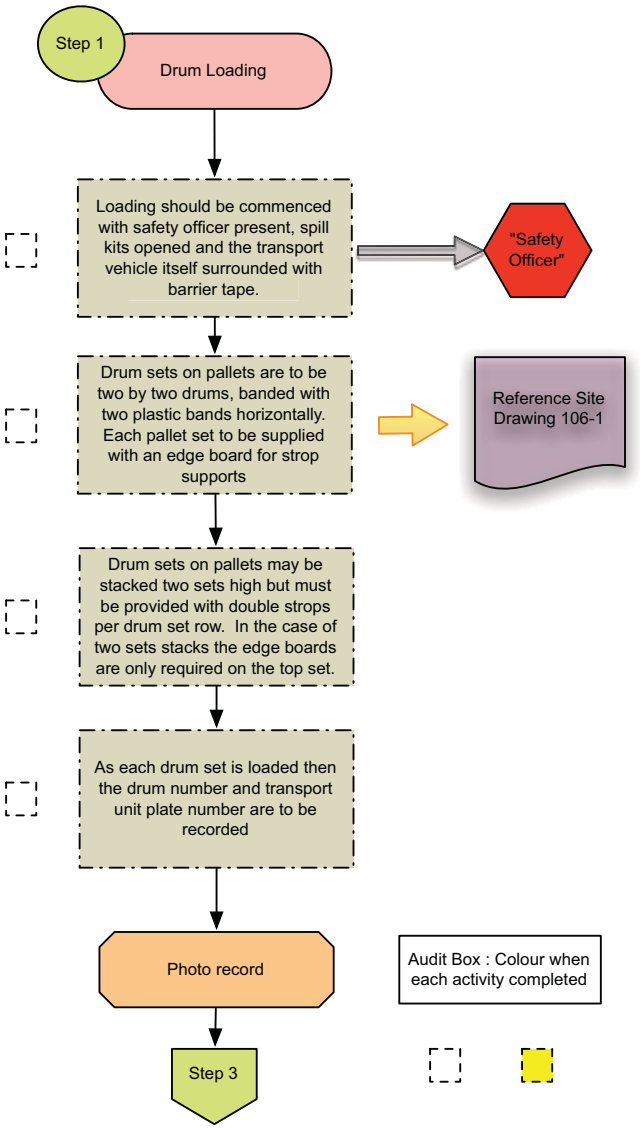


SOP 206 - TRANSPORT LOADING

SOP 206-2 Drum Loading
Step 2

Loading drum sets

This SOP covers the loading of pallets of drums onto the transport vehicle. Note the stropping requirements for two stacks high.

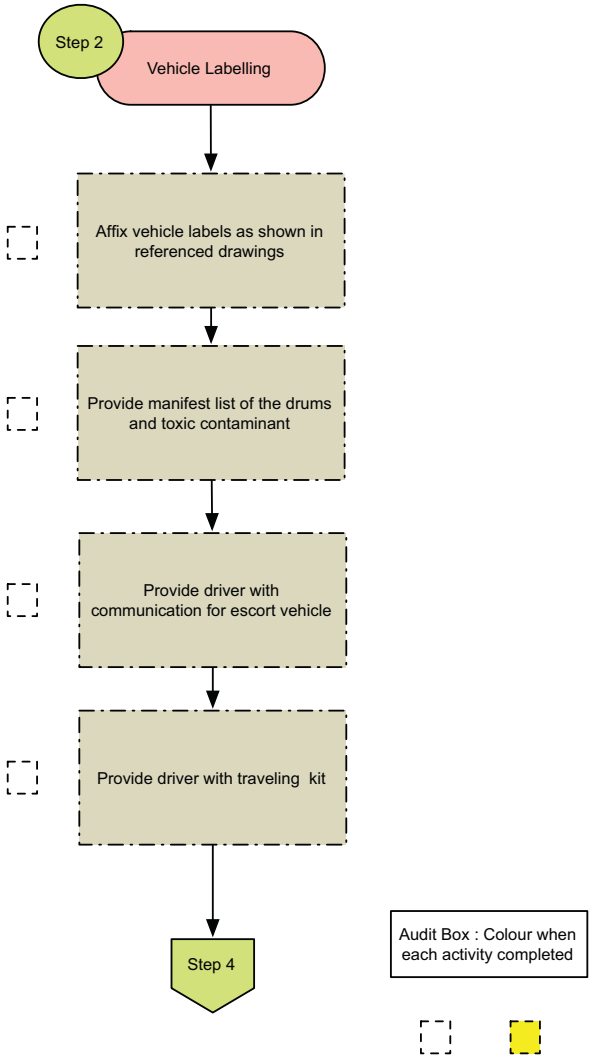


SOP 206 - TRANSPORT LOADING

SOP 206-3 Transport vehicle labeling
Step 3

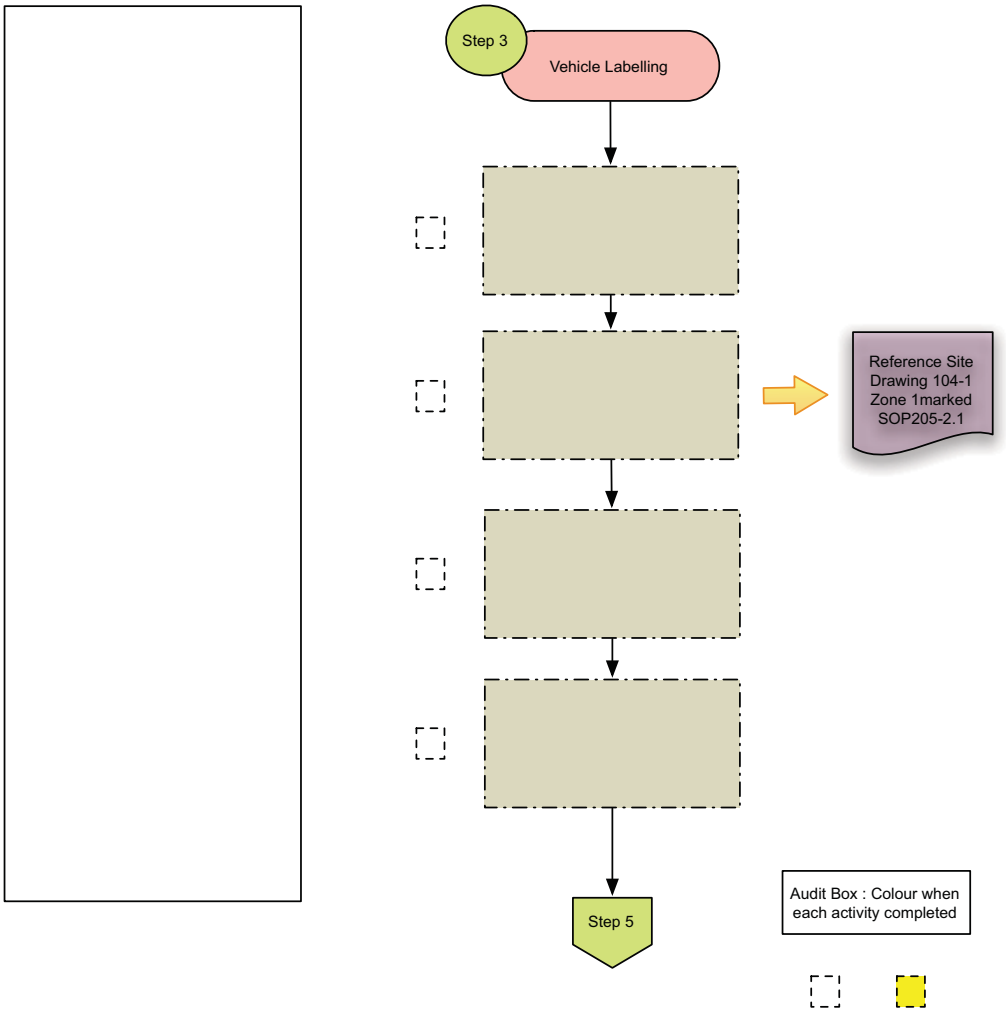
Transport Vehicle labeling

This SOP covers the affixing of labels onto the transport vehicle. A manifest is to be provided for the drivers cab. Escort vehicle must accompany the transport vehicle to its destination.



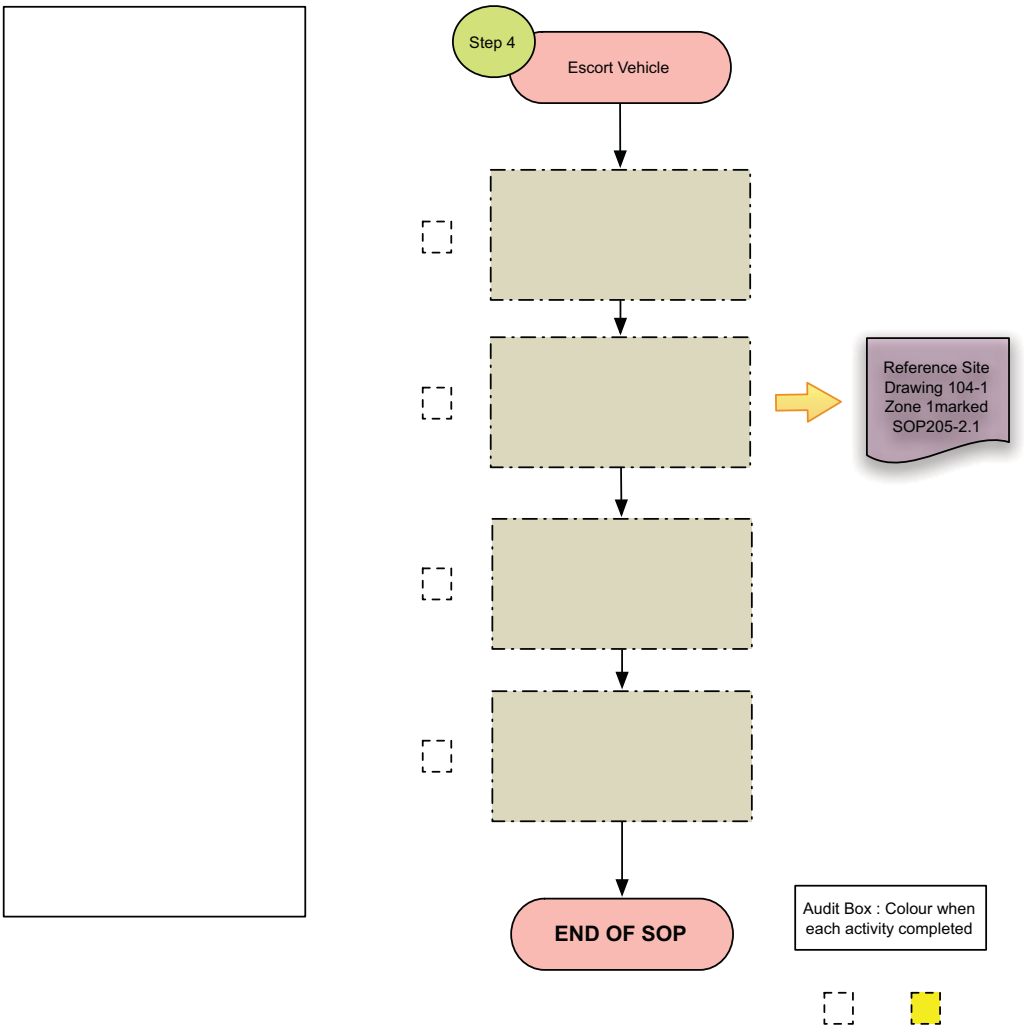
SOP 206 - TRANSPORT LOADING

SOP 206-4 Driver Training
Step 4



SOP 206 - TRANSPORT LOADING

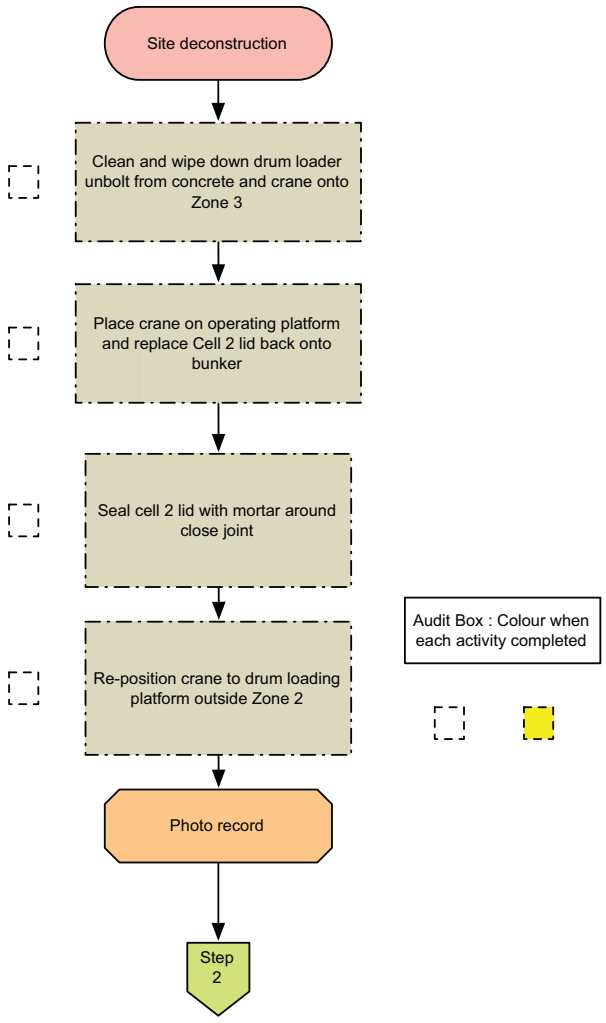
SOP 206-5 Escort Vehicle
Step 4



Site Specific Activity SOPs	
Activity Specific SOP-206	**e o on**
Prepared by : Dr. Ron McDowall Date 20 September 2011	Approved by : Date:
Background	Recovery, packing and transportation of the contaminated soils located in Cell 2 of the burial structure
Aims	This SOP involves the demobilization of the site.
Equipment	Drum pallet loader, drum lifter Pallets Crane
Environmental protection	All zone protection sheeting in place
Worker protection	Zone 2 PPE Safety boots Safety glasses Safety gloves Face shields
Detailed activities	Refer to specific SOP activity flow sheets. SOP-207-1 Remove drum hopper and replace Cell 2 lid SOP-207-2 Remove Zone 1 SOP-207-3 Remove Zone 2 SOP-207-4 Reconstruct Embankment, fencing, drain. SOP-207-5 Remove decontamination unit SOP-207-6 Regrade zone 2 SOP-207-7 Demobilization of Zone 3
Special instructions	Reference SOP 207-1,2, 3,4 ,5,6 & 7

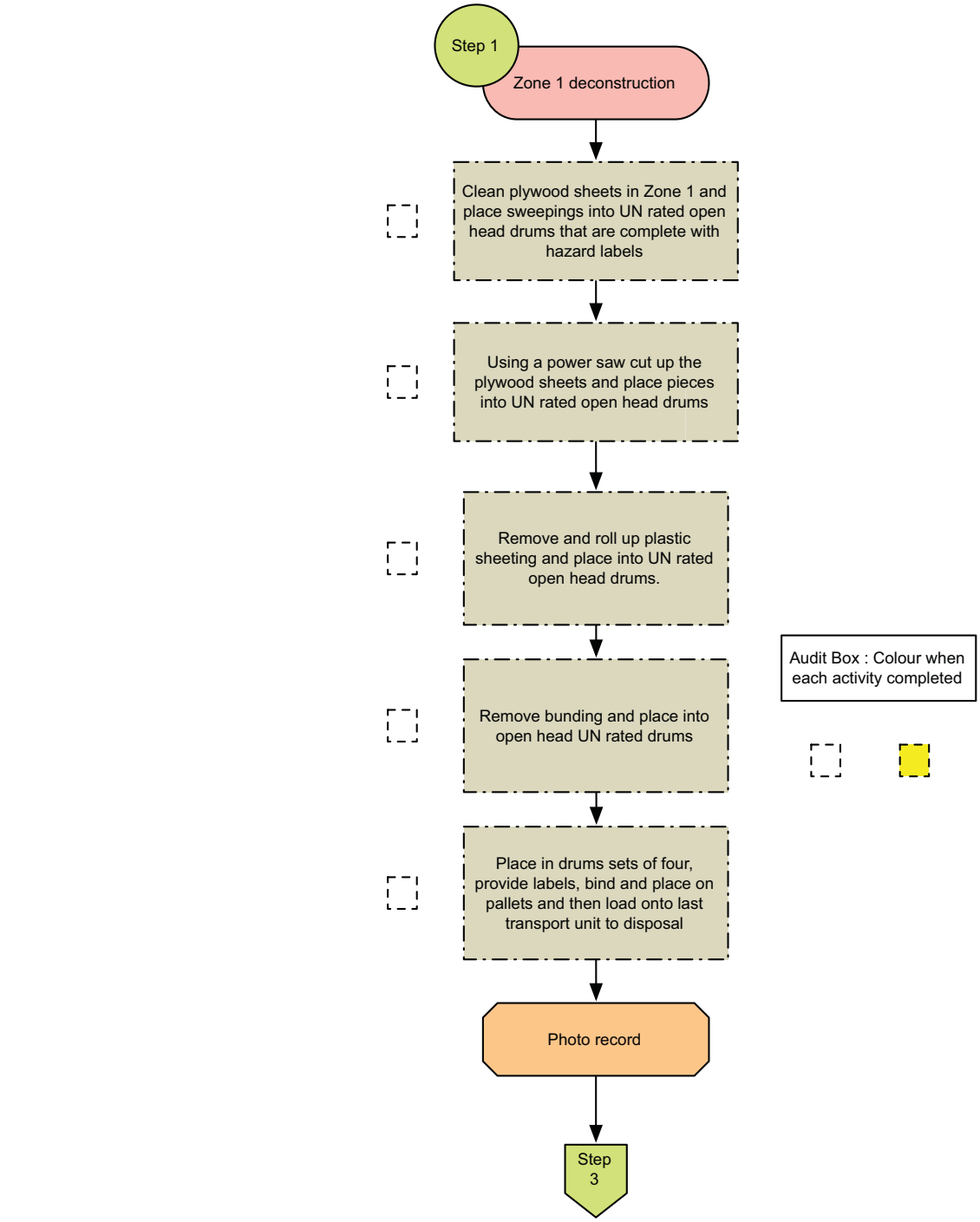
SOP 207 - DEMOBILIZATION

SOP 207 Remove Drum loader and replace cell 2 lid
Step1



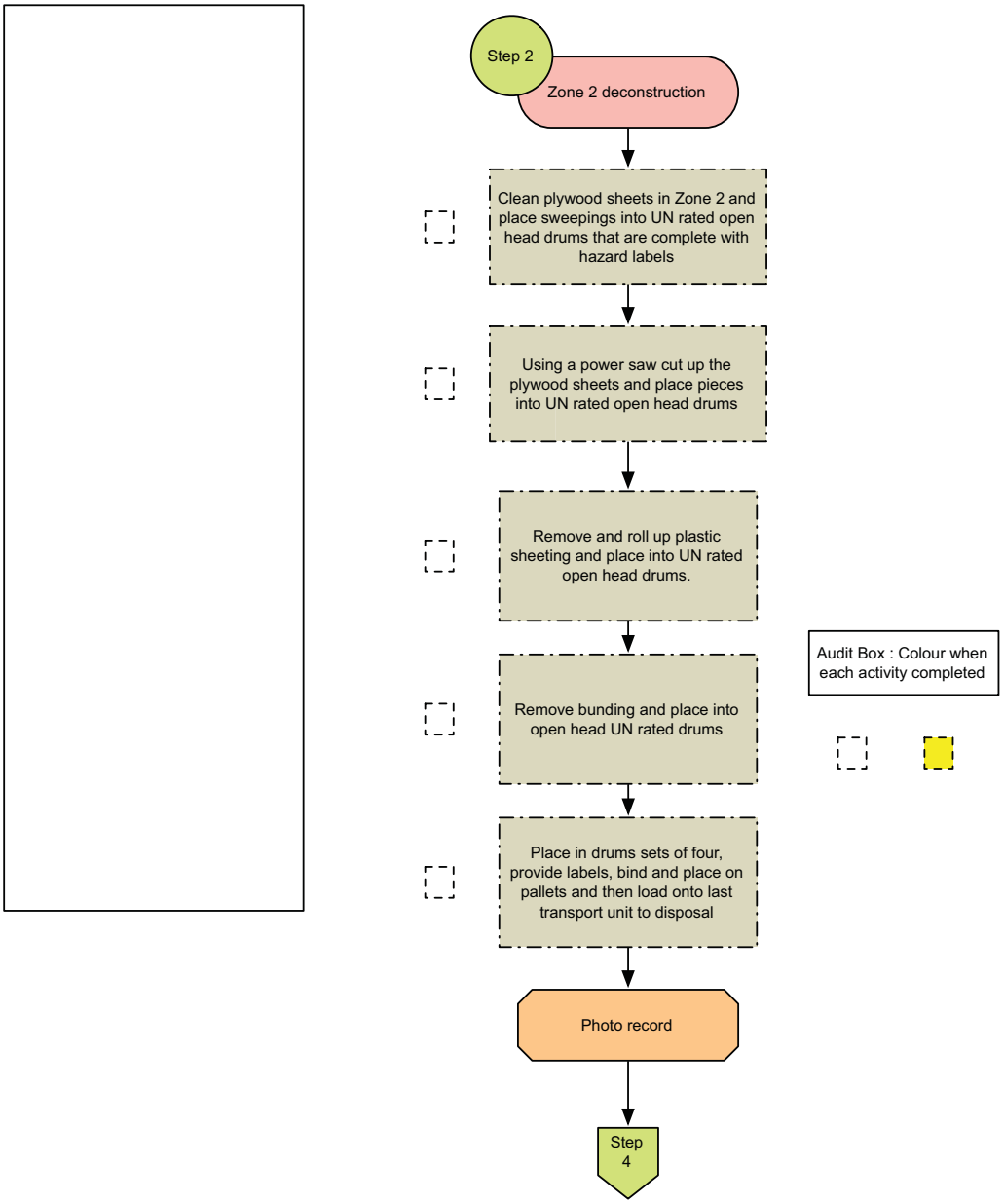
SOP 207 - DEMOBILIZATION

SOP 207 Remove Zone 1
Step 2



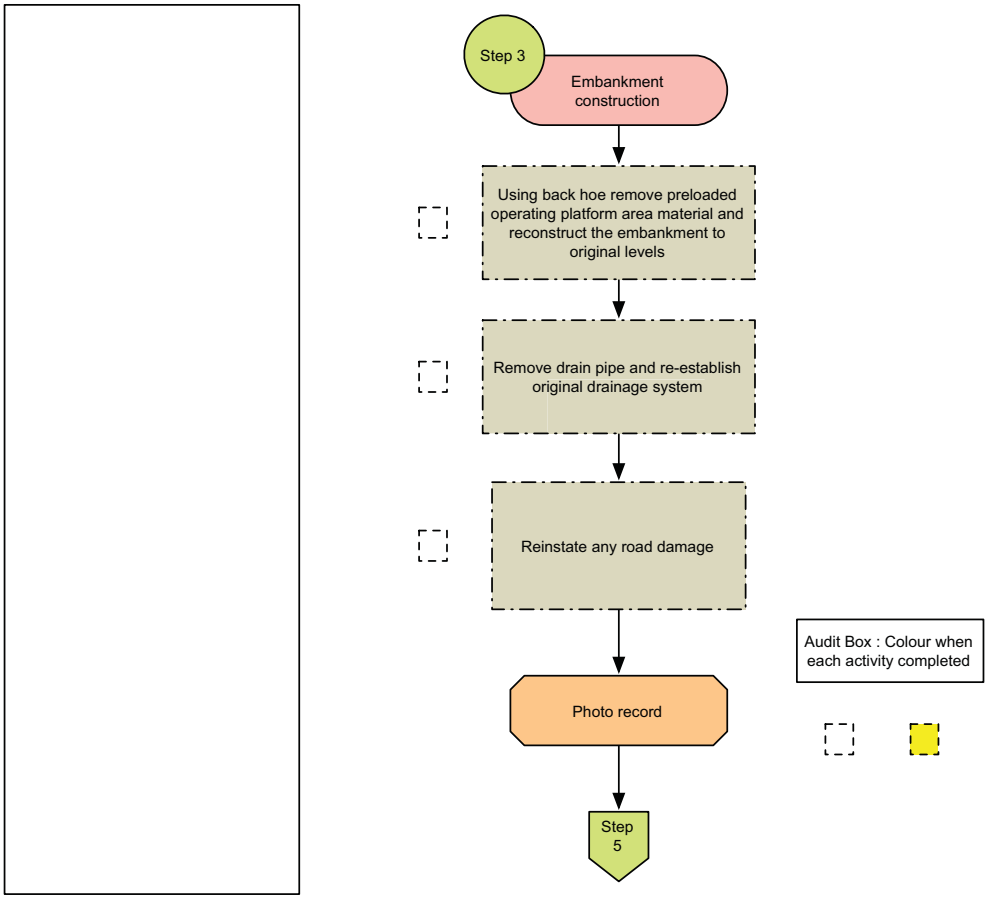
SOP 207 - DEMOBILIZATION

SOP 207 Remove Zone 2
Step 3



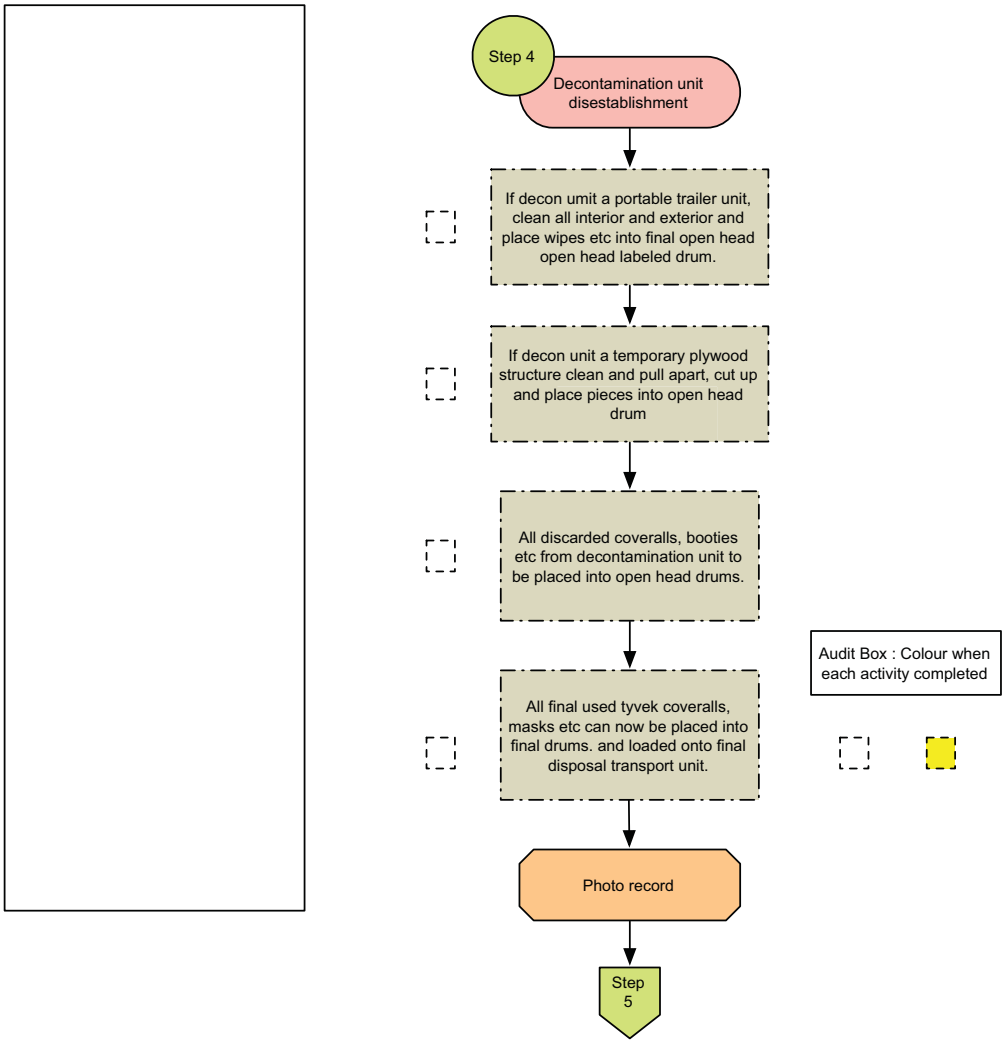
SOP 207 - DEMOBILIZATION

SOP 207 Reconstruct embankment and remove drain piping
Step 4



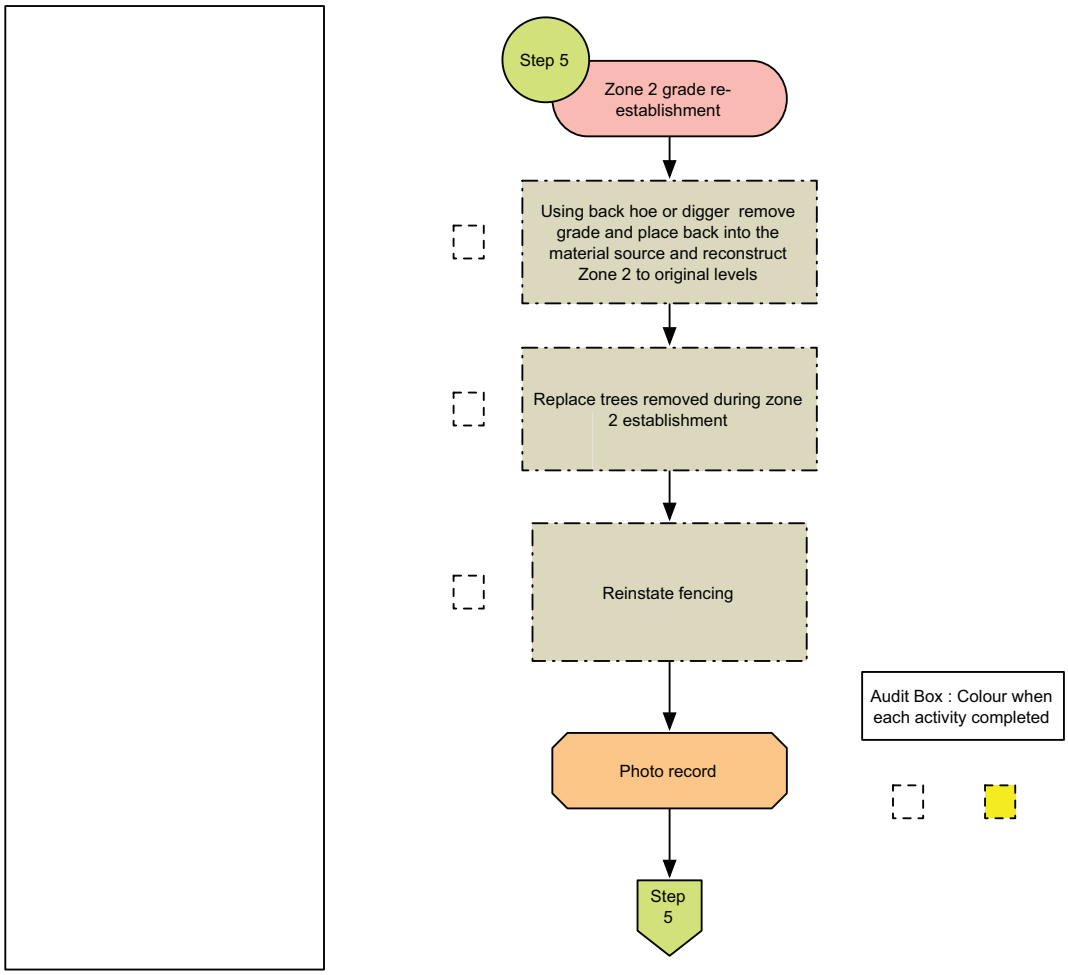
SOP 207 - DEMOBILIZATION

SOP 207 Remove decontamination unit from Zone 2
Step 5



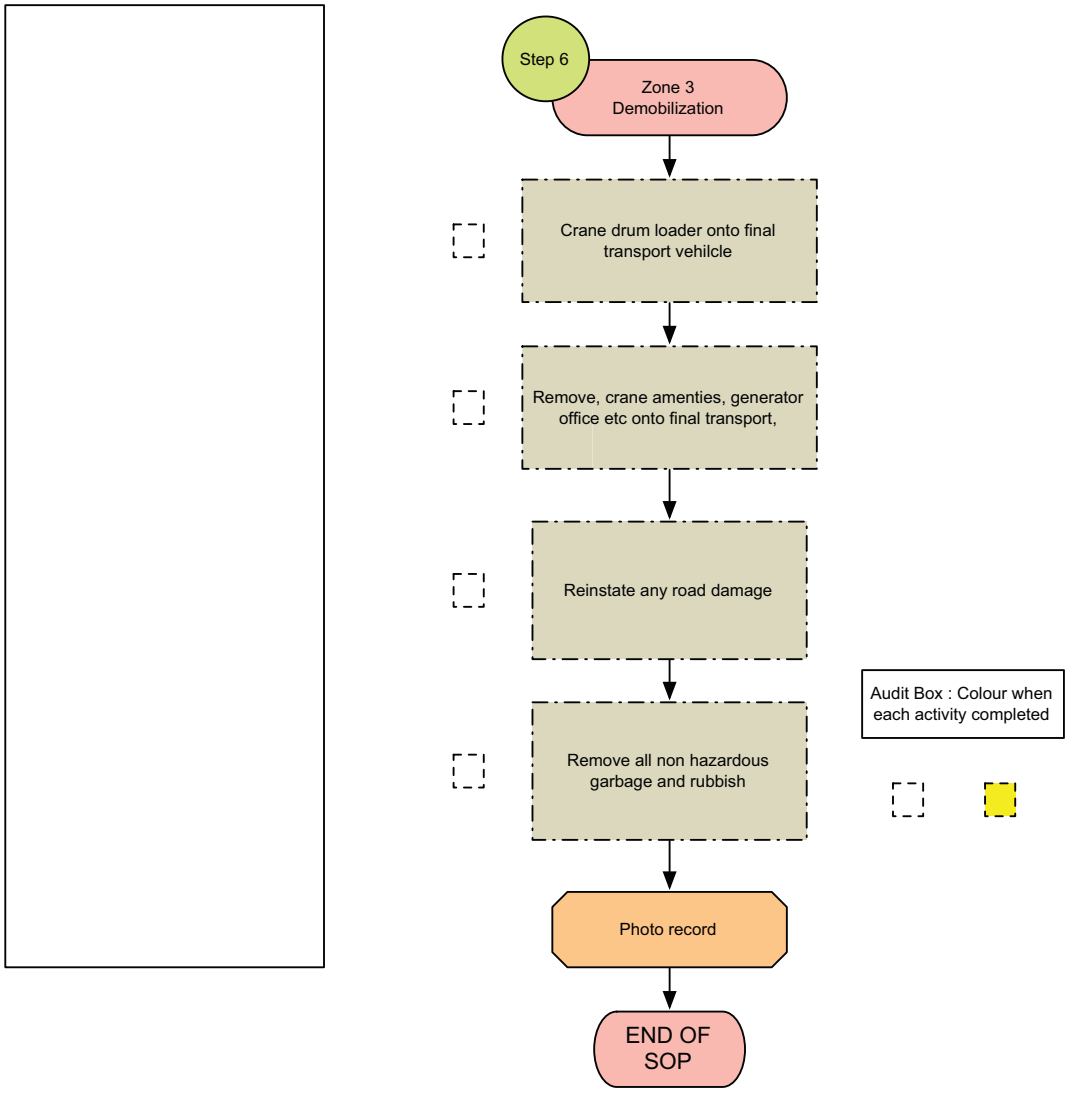
SOP 207 - DEMOBILIZATION

SOP 207 Re-establish original grading of Zone 2
Step 6

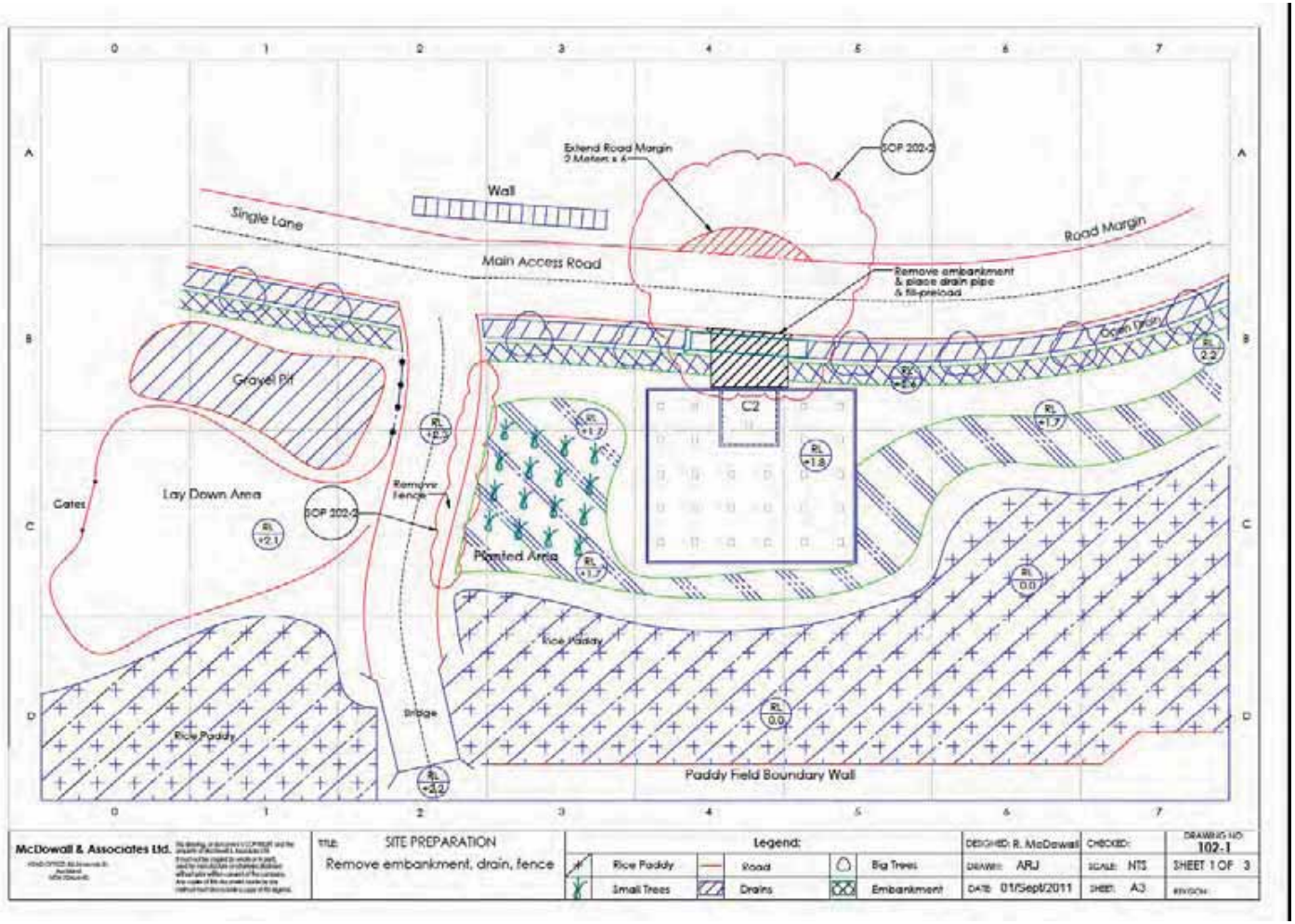


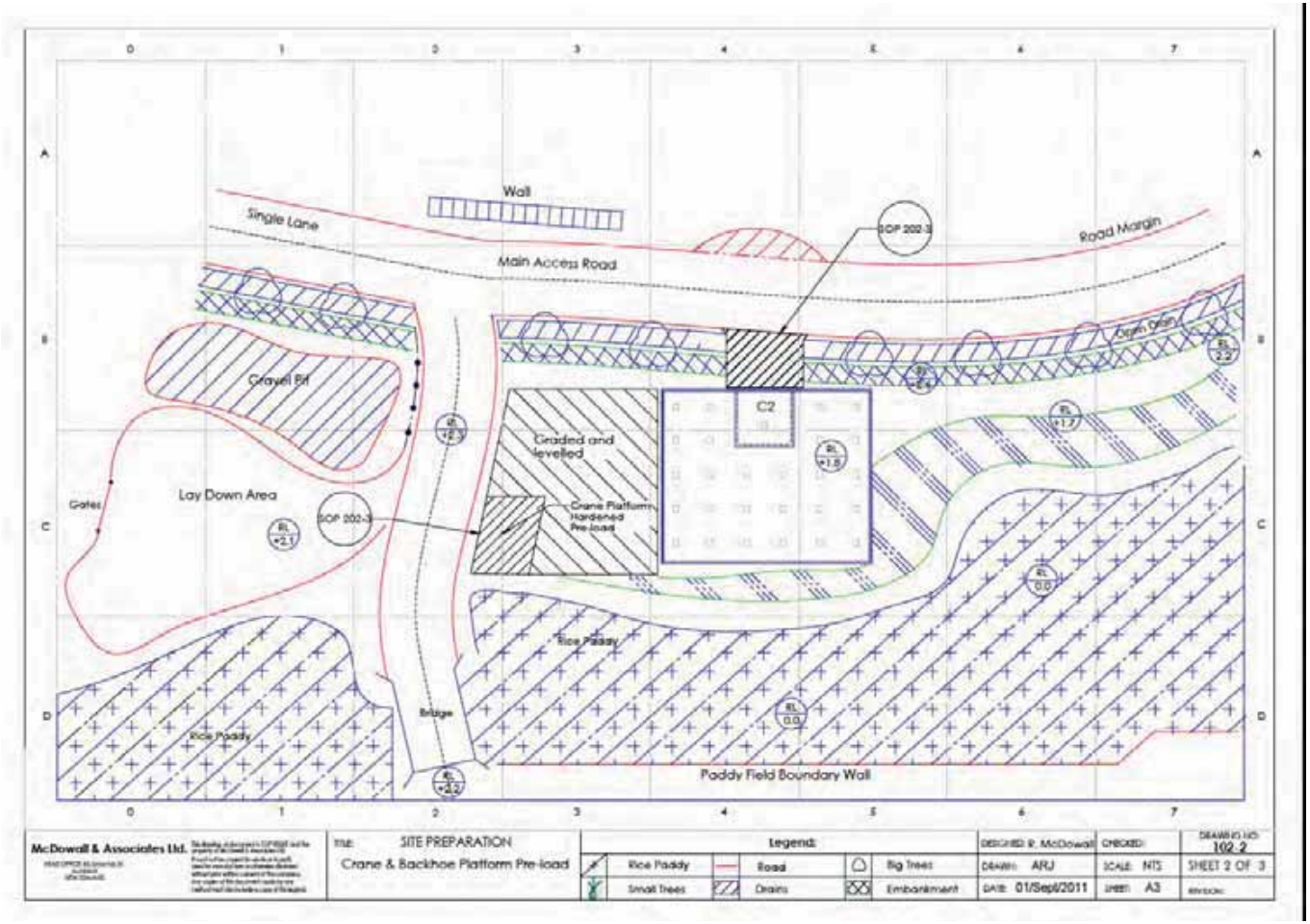
SOP 207 - DEMOBILIZATION

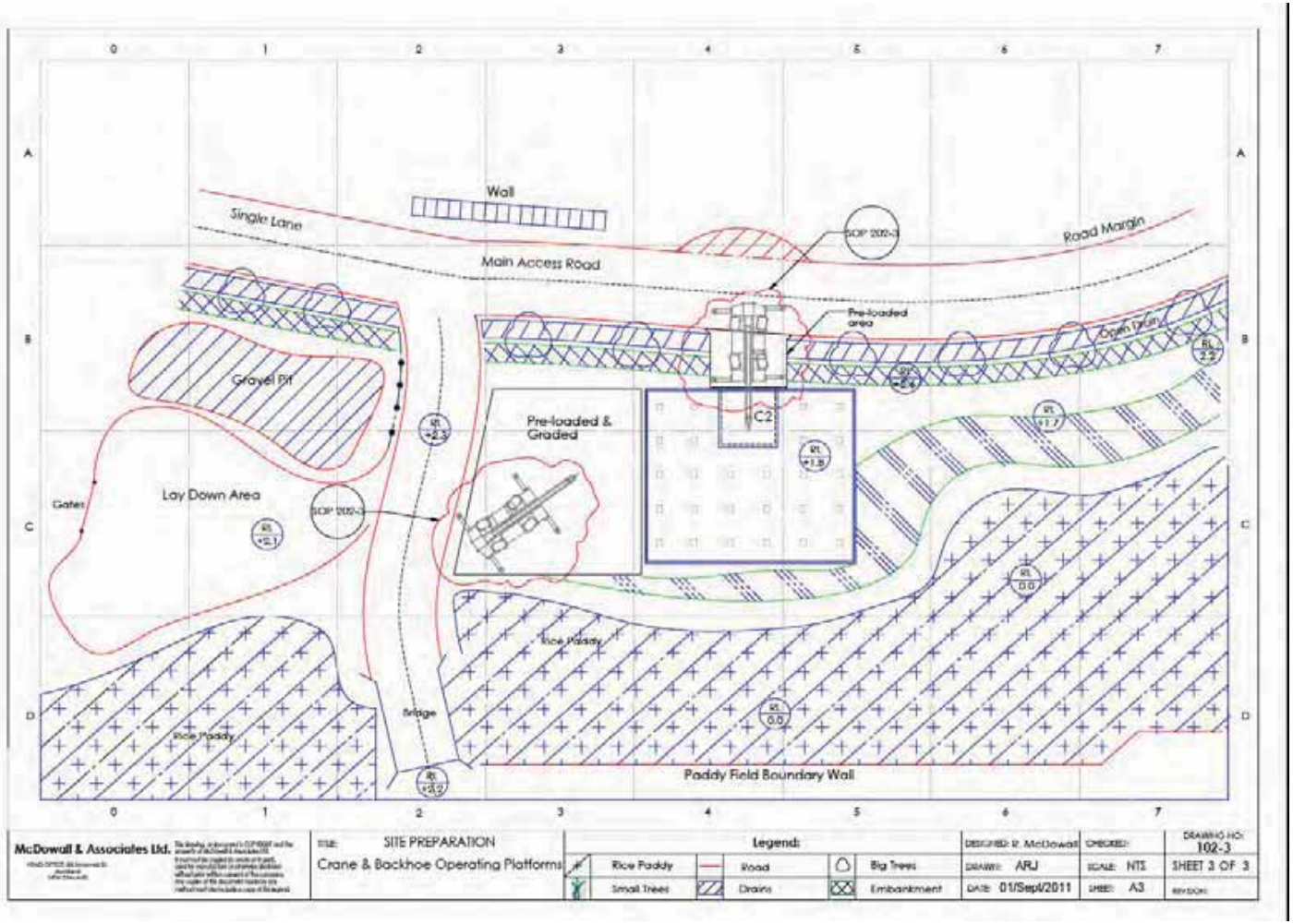
SOP 207 Demobilization of Zone 3
Step 7

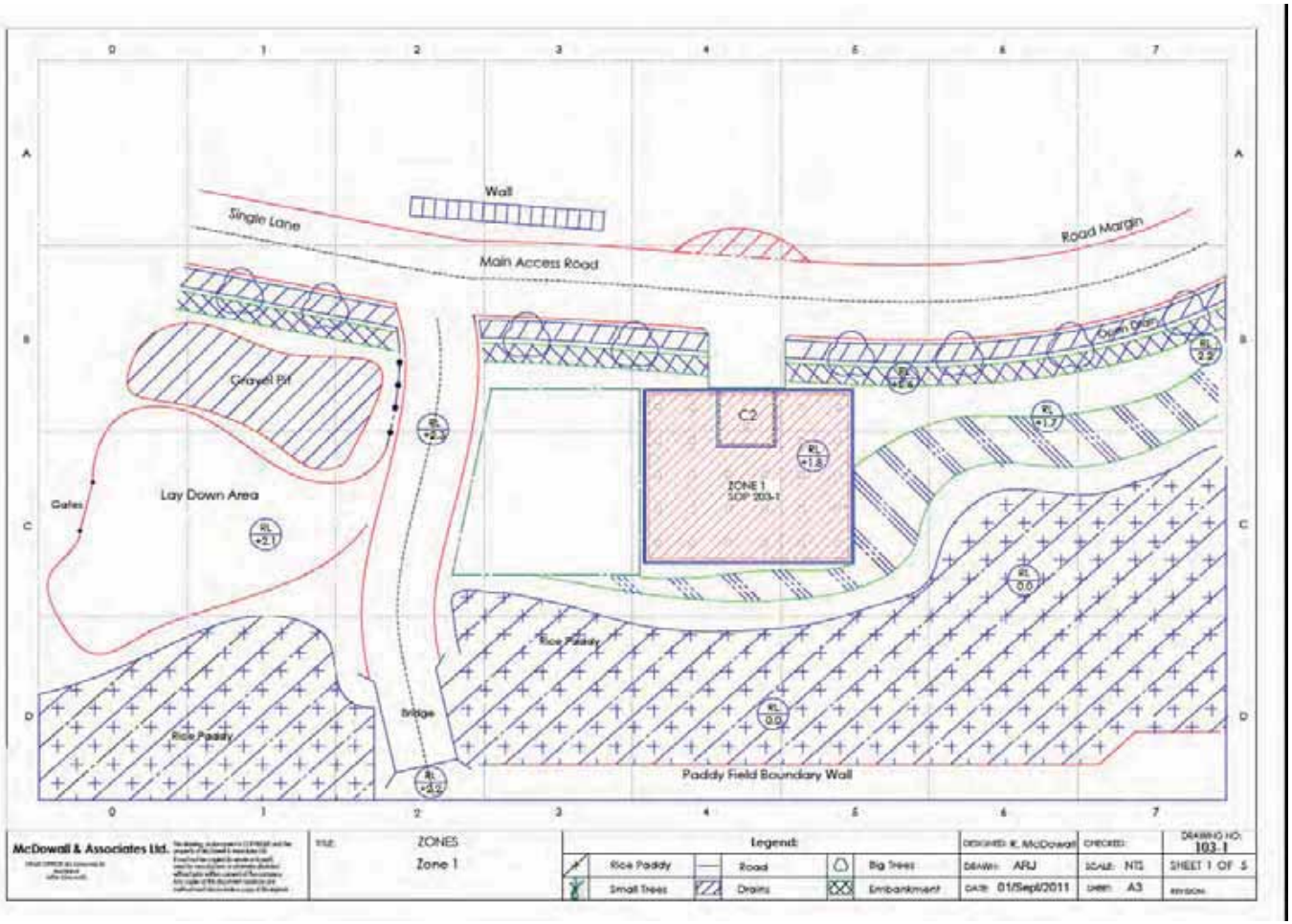


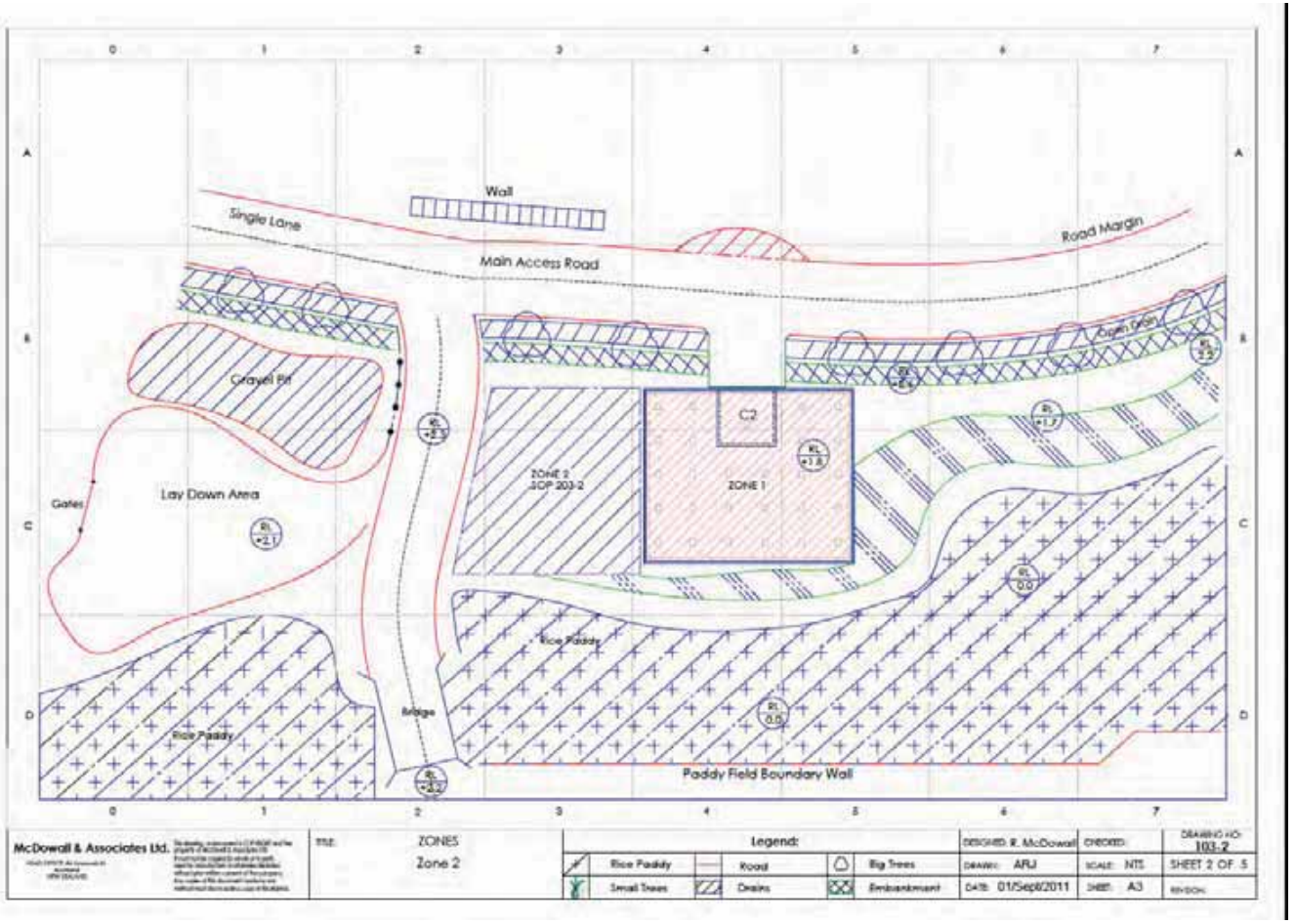
ANNEX 2 Site Drawings

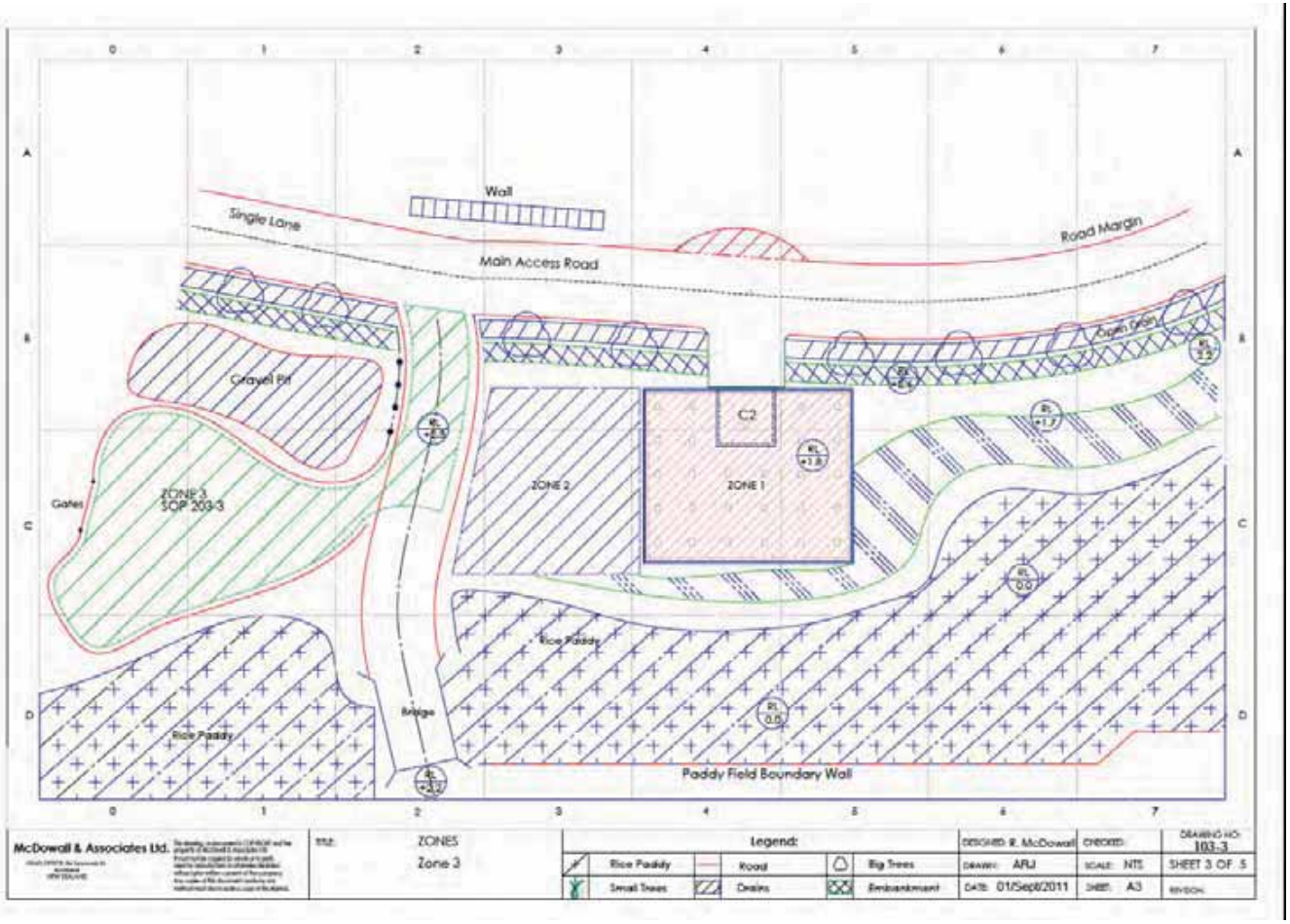

Extend Road Margin
2 Meters x 4
SOP 202-2
Wall
Single Lane
Road Margin
Main Access Road
Remove embankment
& place drain pipe
& fill-preload
Open Drain
Gravel Pit
C2
Cattle
Lay Down Area
SOP 202-2
Remove fence
Planted Area
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: SITE PREPARATION
Remove embankment, drain, fence
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 102-1
SHEET 1 OF 3

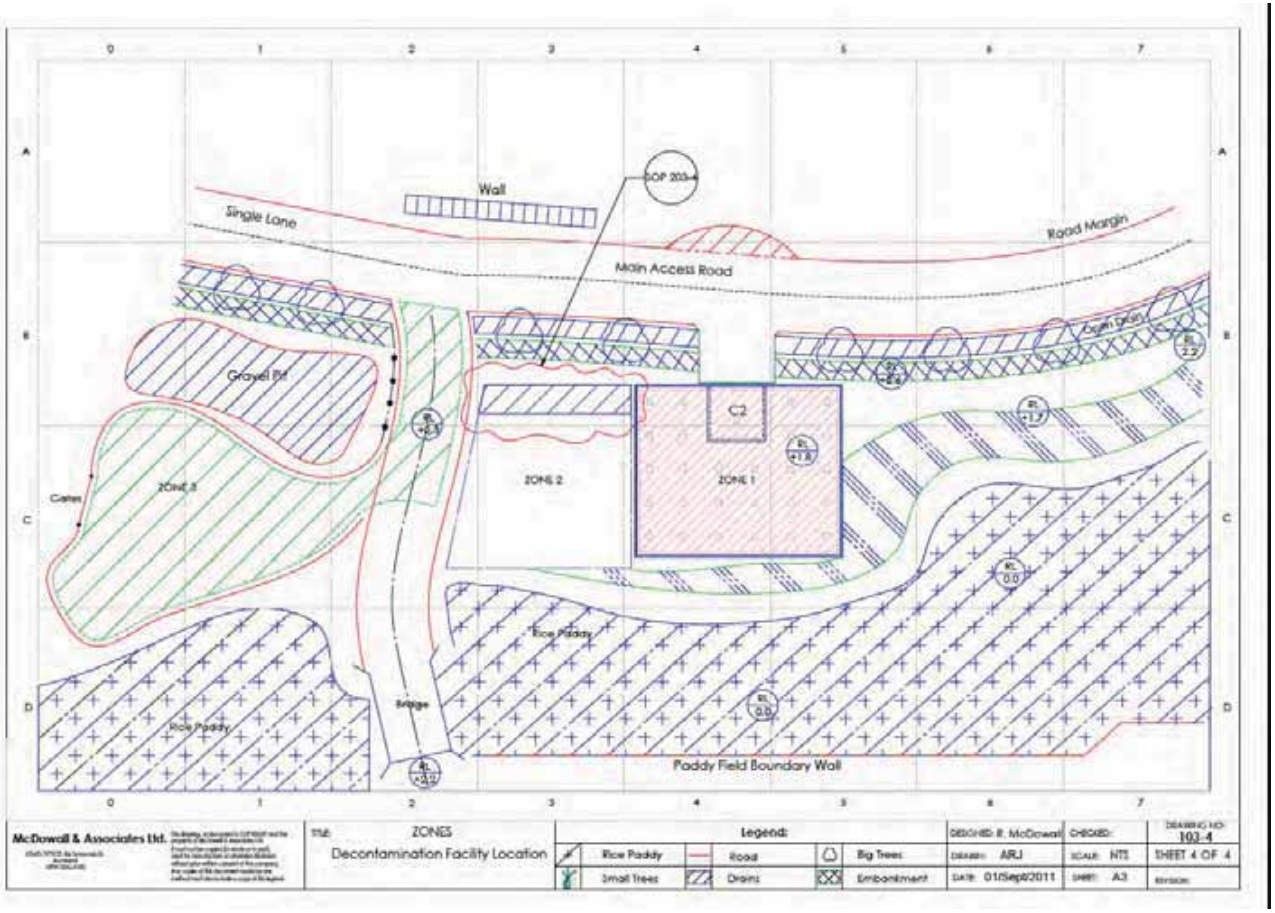

Wall
Single Lane
Main Access Road
SOP 202-3
Road Margin
Open Drain
Gravel Pit
C2
Graded and levelled
Crane Platform Hardened Pre-load
Gates
Lay Down Area
SOP 202-3
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: SITE PREPARATION
Crane & Backhoe Platform Pre-load
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 102-2
SHEET 2 OF 3

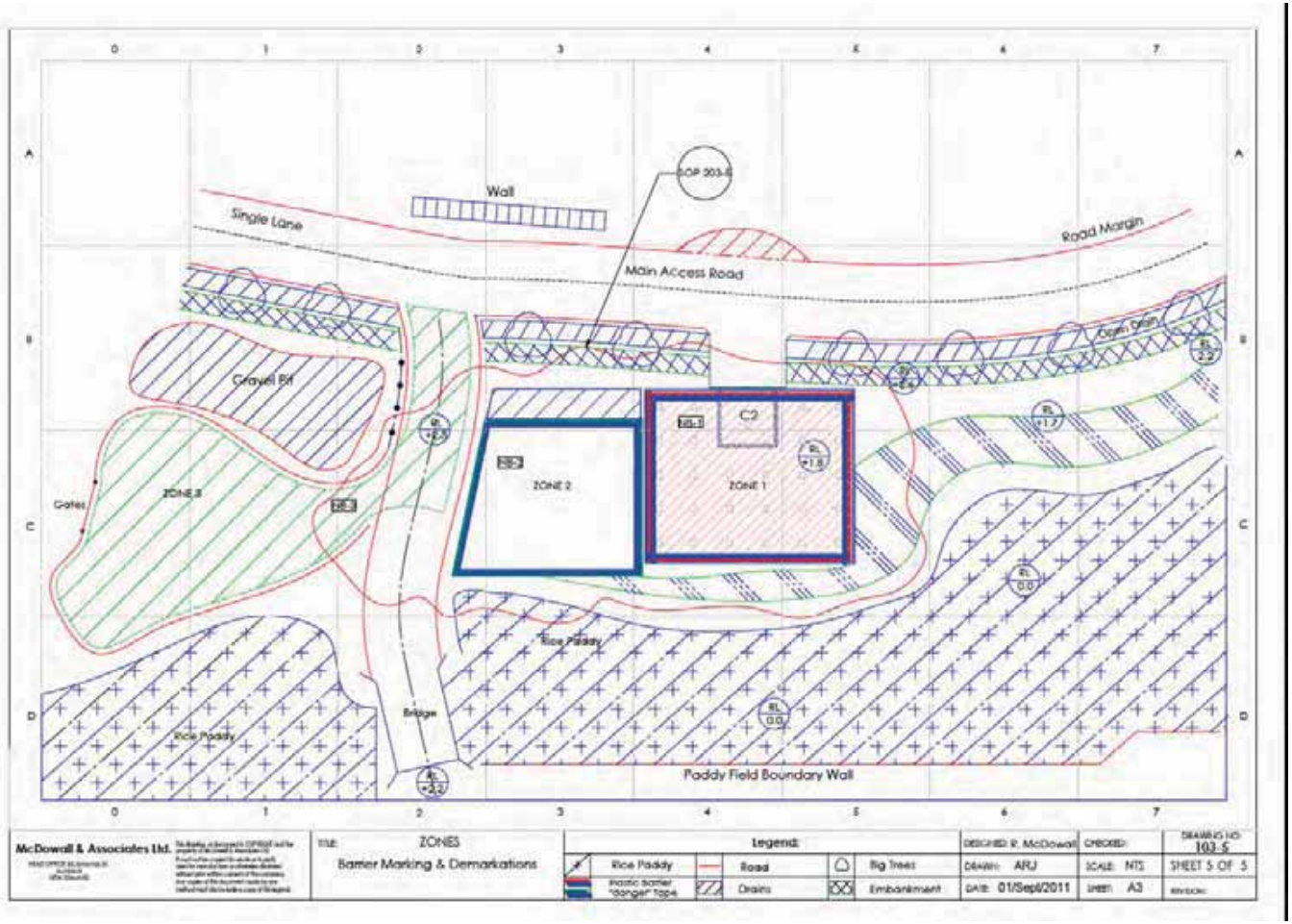

Wall
Single Lane
Main Access Road
Road Margin
SOP 202-3
Pre-loaded area
Open Drain
Gravel Pit
Pre-loaded & Graded
C2
Gates
Lay Down Area
SOP 202-3
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
SITE PREPARATION
Crane & Backhoe Operating Platforms
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 102-3
SHEET 3 OF 3
REVISION:

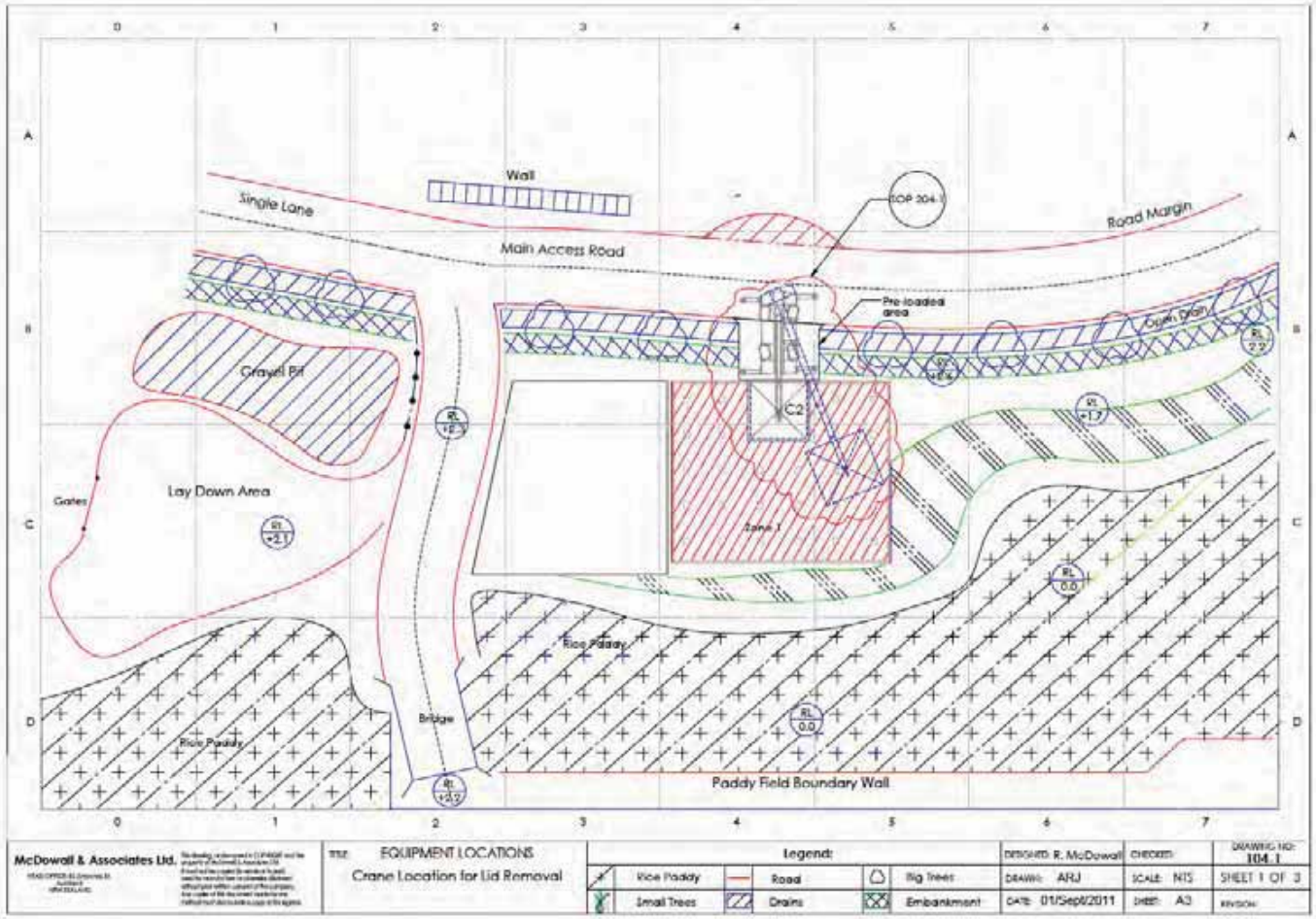

Wall
Single Lane
Road Margin
Main Access Road
Open Drain
Gravel Pit
C2
ZONE 1
SOP 203-1
Gates
Lay Down Area
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE:
ZONES
Zone 1
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: K. McDowall
CHECKED:
DRAWN: ARJ
SCALE: NTS
DATE: 01/Sept/2011
SHEET: A3
DRAWING NO: 103-1
SHEET 1 OF 5

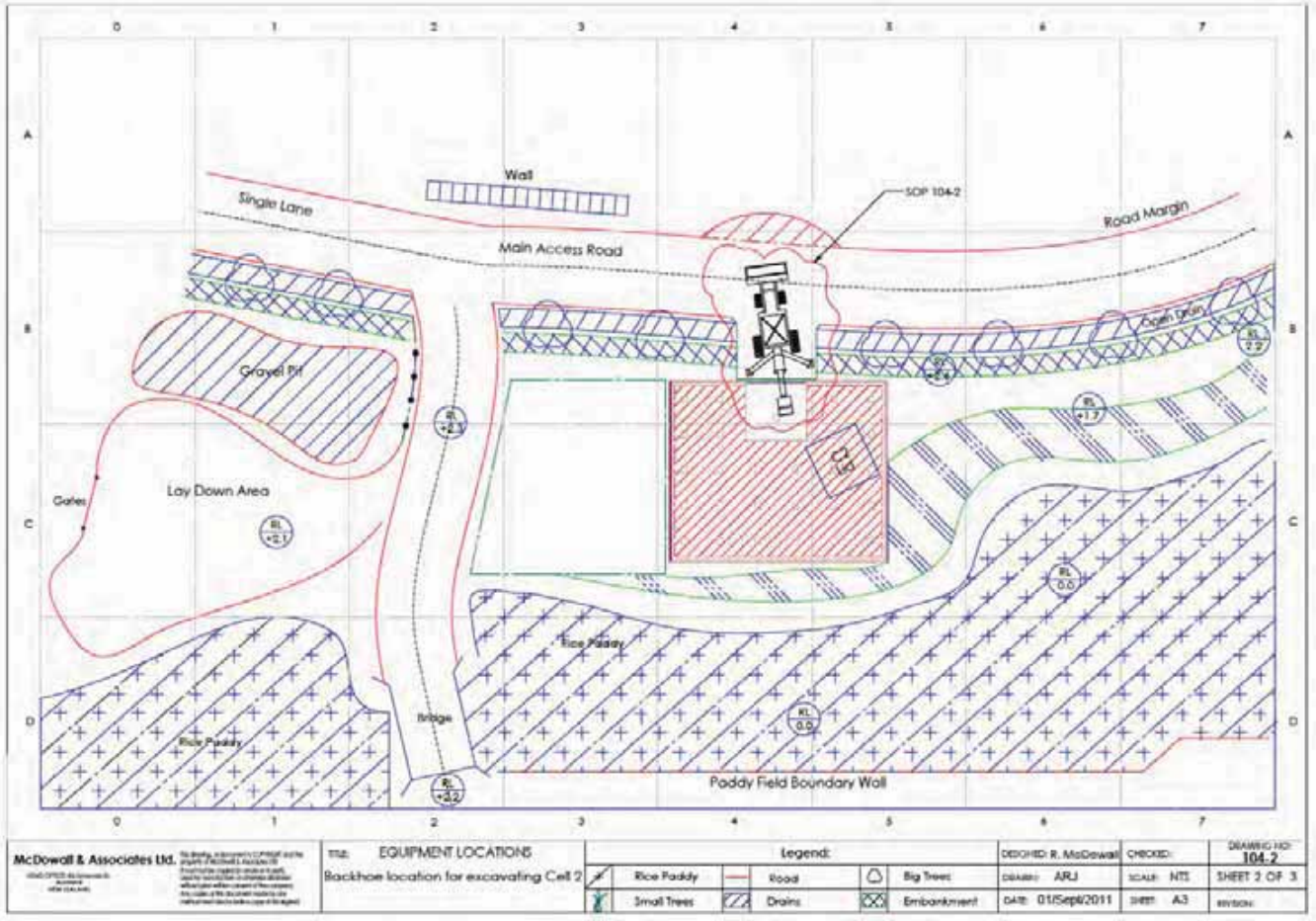

Wall
Single Lane
Main Access Road
Road Margin
Open Drain
Gravel Pit
Gates
Lay Down Area
C2
ZONE 2
SOP 203-2
ZONE 1
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE:
ZONES
Zone 2
Legend:
Rice Paddy
Small Trees
Road
Drains
Big Trees
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sep/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 103-2
SHEET 2 OF 5

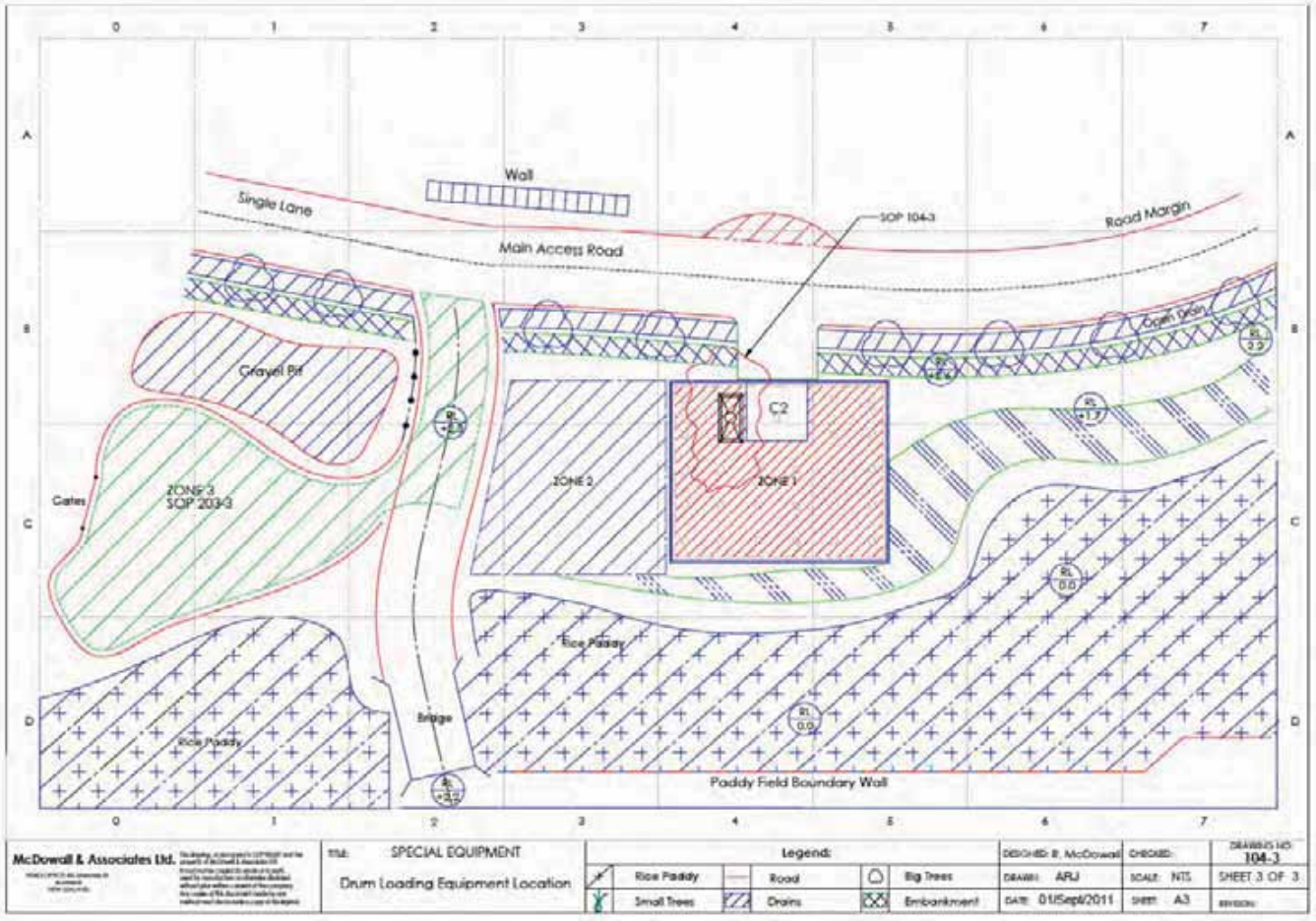

Wall
Single Lane
Main Access Road
Road Margin
Open Drain
Gravel Pit
Gates
ZONE 3
SOP 203-3
ZONE 2
C2
ZONE 1
Rice Paddy
Rice Paddy
Bridge
Paddy Field Boundary Wall
McDowall & Associates Ltd.
ZONES
Zone 3
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
CHECKED:
DRAWN: ARJ
SCALE: NTS
DATE: 01/Sept/2011
SHEET: A3
DRAWING NO: 103-3
SHEET 3 OF 5
REVISION:


Wall
SOP 203-4
Single Lane
Road Margin
Main Access Road
Gravel Pit
ZONE 3
Caves
ZONE 2
ZONE 1
Rice Paddy
Rice Paddy
Bridge
Paddy Field Boundary Wall
McDowell & Associates Ltd.
TITLE: ZONES
Decontamination Facility Location
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowell
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 103-4
SHEET 4 OF 4

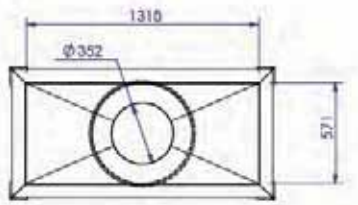

Wall
Single Lane
Road Margin
Main Access Road
Open Drain
Gravel Pit
C2
ZONE 2
ZONE 1
ZONE 3
Gates
Rice Paddy
Rice Paddy
Bridge
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: ZONES
Barrier Marking & Demarkations
Legend:
Rice Paddy
Road
Big Trees
Plastic barrier "danger" tape
Drains
Embankment
DESIGNED: R. McDowall
CHECKED:
DRAWN: ARJ
SCALE: NTS
DATE: 01/Sept/2011
SHEET: A3
DRAWING NO: 103-5
SHEET 5 OF 5

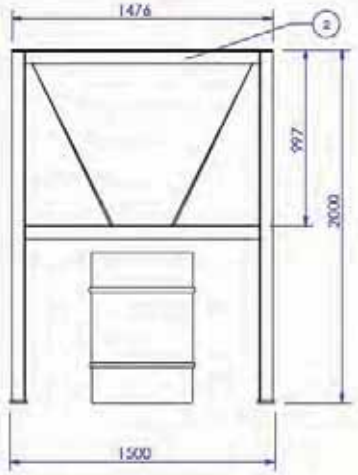

Wall
Single Lane
Main Access Road
TOP 204.1
Road Margin
Pre-loaded area
Gravel Pit
C2
Lay Down Area
Gates
Zone 1
Rice Paddy
Bridge
Paddy Field Boundary Wall
McDowall & Associates Ltd.
EQUIPMENT LOCATIONS
Crane Location for Lid Removal
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
SCALE: NTS
SHEET: A3
DRAWING NO: 104.1
SHEET 1 OF 3

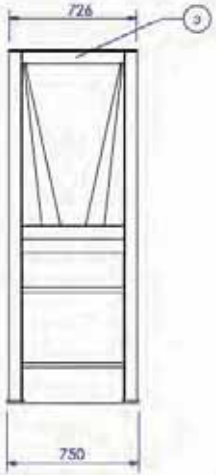

Wall
Single Lane
Main Access Road
SOP 104-2
Road Margin
Open Drain
Gravel Pit
Gates
Lay Down Area
Cell 2
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: EQUIPMENT LOCATIONS
Backhoe location for excavating Cell 2
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 104-2
SHEET 2 OF 3
REVISION:

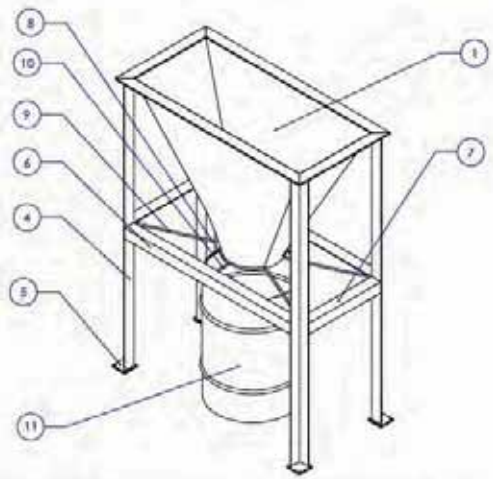

Wall
Single Lane
Main Access Road
SOP 104-3
Road Margin
Gravel Pit
C2
ZONE 2
ZONE 1
Gates
ZONE 3
SOP 203-3
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: SPECIAL EQUIPMENT
Drum Loading Equipment Location
Legend:
Rice Paddy
Small Trees
Road
Drains
Big Trees
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO. 104-3
SHEET 3 OF 3

NOTE: WELD ALL CONNECTIONS









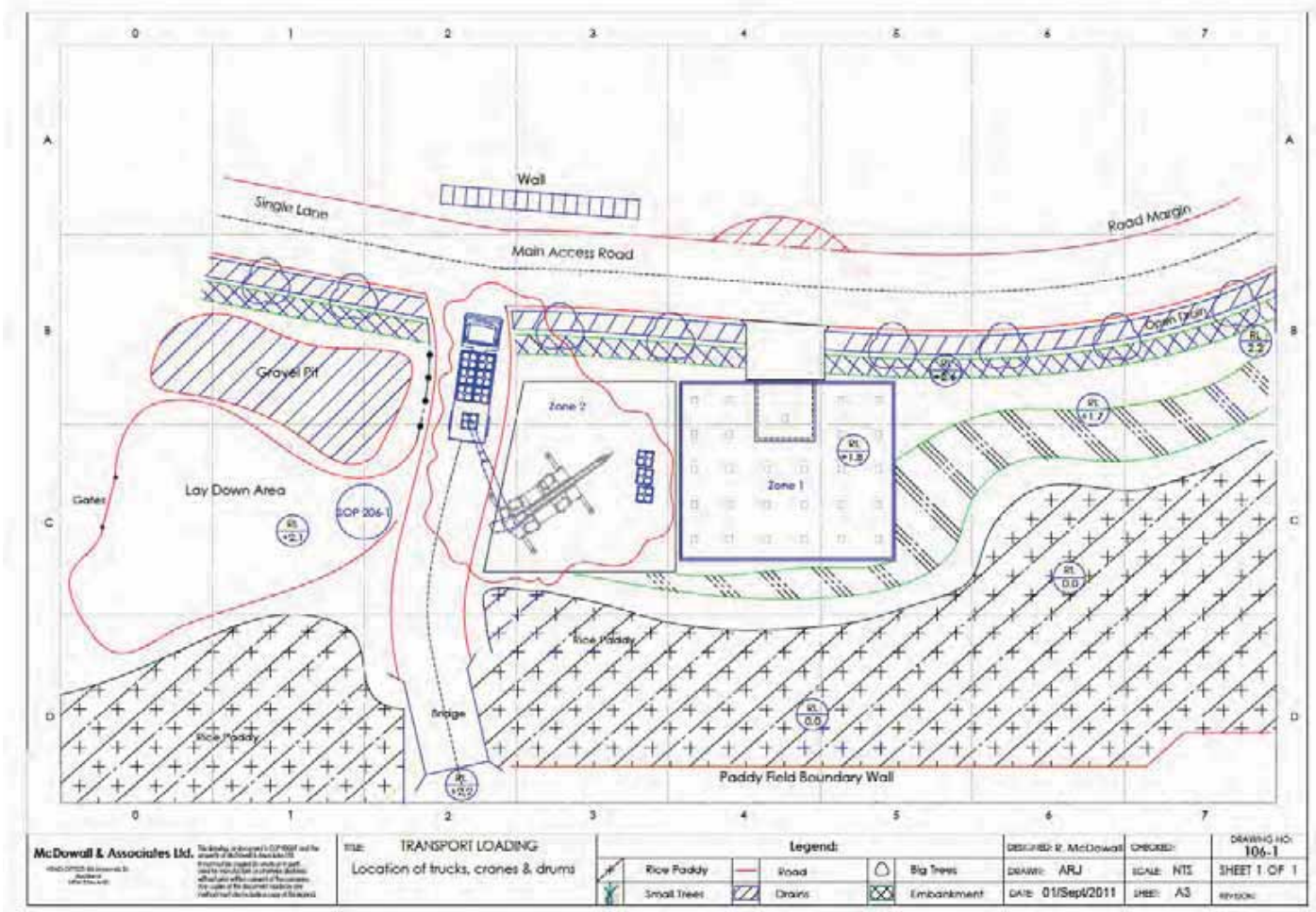
11	Drum	Ø 572 x 851	Steel		STD
10	Funnel Lower Support 3	Ø 12 x 100	Steel Rod	2 Pcs	
9	Funnel Lower Support 2	Ø 12 x 534	Steel Rod	4 Pcs	
8	Funnel Lower Support 1	Ø 12 x 1104	Steel Rod	1 Pc	
7	Frame Lower Bracket 2	75 x 75 x 6 x 576	Steel Angle Bar	2 Pcs	
6	Frame Lower Bracket 1	75 x 75 x 6 x 1304	Steel Angle Bar	2 Pcs	
5	Foot Plates	100 x 100 x 10	Steel Plate	4 Pcs	
4	Frame Post	75 x 75 x 6 x 1980	Steel Angle Bar	4 Pcs	
3	Frame Upper Bracket 2	75 x 75 x 6 x 726	Steel Angle Bar	2 Pcs	
2	Frame Upper Bracket 1	75 x 75 x 6 x 1474	Steel Angle Bar	2 Pcs	
1	Funnel	728 x 1476 x 1000 x 3	Steel Sheet	1 Pc	
No.	**Description**	**Material Size**	**Material**	**Qty**	**Remarks**

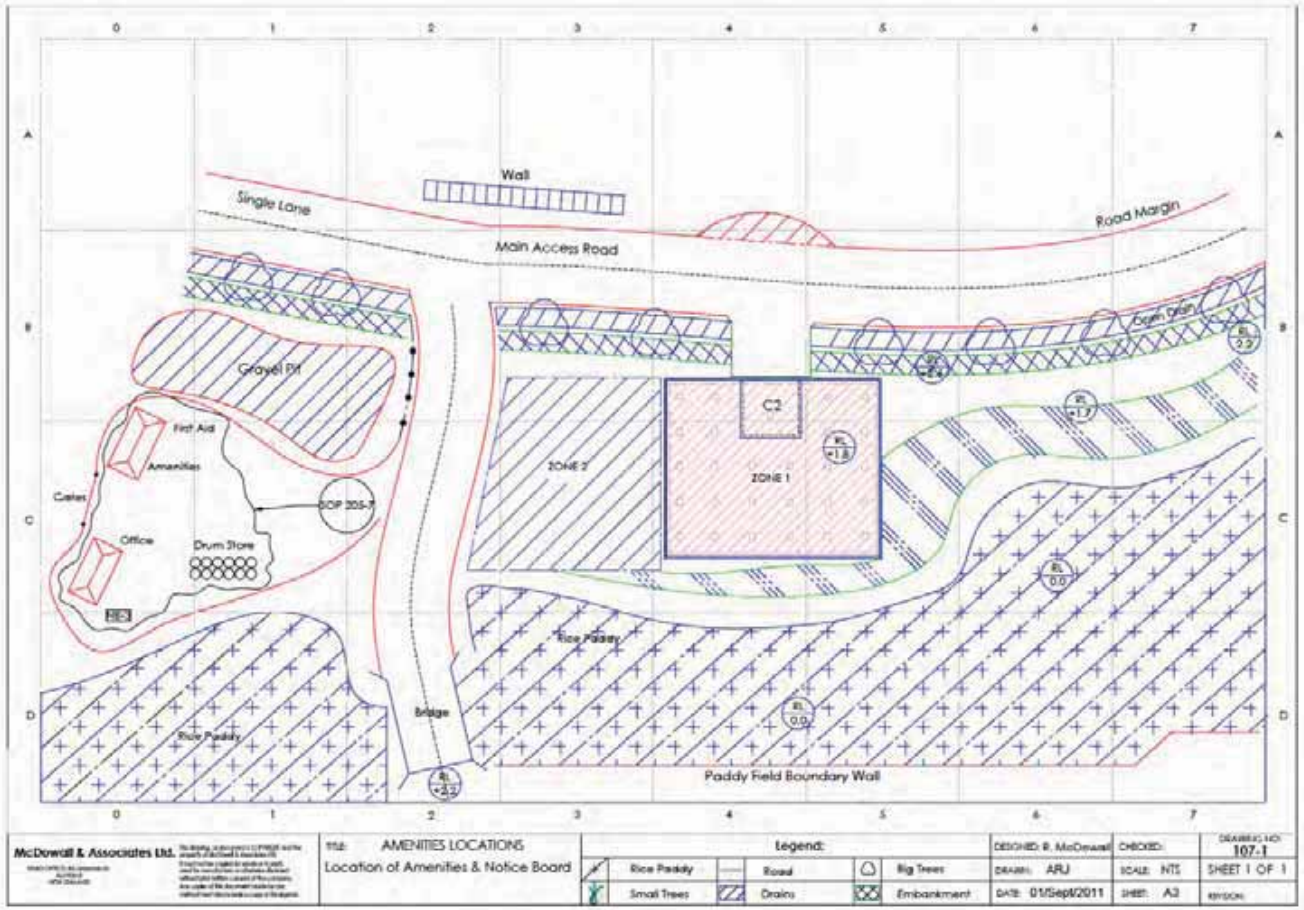
McDowell & Associates Ltd.

TITLE: **SPECIAL EQUIPMENT**
Drum Loading Equipment

All dimensions are in millimeters. mm

DESIGNED: R. McDowell | CHECKED: | DRAWING NO: 105-1
DRAWN: ARJ | SCALE: NTS | SHEET 1 OF 1
DATE: 01/Sept/2011 | SHEET: A3 | REVISION:


Wall
Single Lane
Main Access Road
Road Margin
Open Drain
Gravel Pit
Zone 2
Zone 1
Gates
Lay Down Area
SOP 206-1
Rice Paddy
Bridge
Rice Paddy
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: TRANSPORT LOADING
Location of trucks, cranes & drums
Legend:
Rice Paddy
Road
Big Trees
Small Trees
Drains
Embankment
DESIGNED: P. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 106-1
SHEET 1 OF 1


Wall
Single Lane
Main Access Road
Road Margin
Drain Drain
Gravel Pit
First Aid
Amenities
Toilet
Office
Drum Store
SOP 305-7
C2
ZONE 2
ZONE 1
Rice Paddy
Bridge
Paddy Field Boundary Wall
McDowall & Associates Ltd.
TITLE: AMENITIES LOCATIONS
Location of Amenities & Notice Board
Legend:
Rice Paddy
Road
Rig Trees
Small Trees
Drains
Embankment
DESIGNED: R. McDowall
DRAWN: ARJ
DATE: 01/Sept/2011
CHECKED:
SCALE: NTS
SHEET: A3
DRAWING NO: 107-1
SHEET 1 OF 1

ANNEX 4 Transport Forms

FORM F1
Cargo list and hazard characterization

Cargo hazardous property	
1 Vehicle registration plate:	
2 Maximum load (tonnes):	

3 Cargo:

#	Pesticide	Quantity (kg)	Hazards
	Total		

4 Recapitulation: cargo hazards

- ☐ **Highly toxic** (Class Ia, Ib) **(T+)**
- ☐ **Flammable (F, F+)**
- ☐ **Explosive (E)**
- ☐ **Corrosive (C)**
- ☐ **Oxidizing (O)**
- ☐ **Toxic for aquatic life (TA)**
- ☐ **Water reactive (WR)**
  Can release toxic gas when wet

FORM F2
Route survey form

Route #		From			To		Significant dangers related to:		Risk of accident	Potential impact
Segment #	From	To	Road covering (Asphalt, Gravel, Dust)	Road conditions (Bumpy, Flat, Slippery...)	Traffic conditions (Scarce, Fluid, Dense)	Land use (Urban, Agricultural, Natural)	Distance from departure (km)	• Roads and traffic conditions : curves, intersection, railroad crossing, slopes, bridges, difficult crossing... • Land use: populated, urban areas, water sources, agricultural area, grazing area for livestock...	[High, Medium, Low)	(Limited, Significant, Serious)
1	Departure						0 km ...			
2										
3...										
...n		Arrival						*(Add more segments or lines if required)*		

Synthesis — The route is :

- ☐ Suitable for all cargo type
- ☐ Suitable only for cargoes with the following hazardous property:
- ☐ Not suitable for any cargo

Rationale *(Provide explanation)*

FORM F3
Transport plan

Route #			From			To				
Segment #	From	To	Risk of accident (High, Medium, Low)	Potential impact (Limited, Significant, Serious)	Control and preventive measures		Specific dangers			Emergency contacts
					Maximum speed limit (km/h)	Other measures	Distance from departure (km)	Description	Specific control and preventive measures	Police, medical services, fire brigades, environmental authorities
1	Departure									
2										
3...										
...n		Arrival								

FORM F5
Checklist

Vehicle registration plate	Ctrl	Safety equipment	Ctrl	Documentation	Ctrl
1. Breaks	☐	1. Radio or cell phone	☐	1. Log book	☐
2. Tyre	☐	2. Personal protective equipment	☐	2. Route plan	☐
3. Lights	☐	3. Spillage control equipment	☐	3. Cargo list	☐
4. Speed recording disk	☐	4. Spare containers	☐	4. Emergency contacts	☐
5. Steer	☐	5. Fire extinguisher	☐	5. Hazard identification symbol	☐
6. Spare tyre	☐	6. First aid kit	☐		
7. Foot pump	☐	Check by (name and signature):		Date	

ANNEX 4 Project Forms

Daily Progress Report	
Store name and number Briefing by:	Local counterparts and workers:
Planned activities for today	
Summary of work completed today	
Hours worked:	
Hours lost due to delays:	
Is the project on schedule:	
Any incidents/accidents/near misses (details):	
Planned operations for tomorrow	
Signed:	Position:

Daily Briefing Sheet		
Staff members present:	Absentees:	
Date & Time:		
Given by:		
Location:		
Previous day's progress		
Principal activities for day		
Activities:	Assigned personnel:	
Zone 1: Zone 2: Zone 3:		
TBRA and SOPs issued	Variations to TBRA & SOPs	PPE Requirements
		Zone 1: Zone 2: Zone 3:
Signed:	**Position:**	

Project Improvement Notice	
Completed by: Site number: Site name/Location (zone and region): Date:	
Deficiency in performance	
Corrective action required	
Time scale for implementation of corrective action	
Review of corrective action	
Improvement notice lifted	
Date:	Signed:
Failure to address improvements resulting in issue of prohibition notice	
Date:	Signed:

Project Prohibition Notice	
Completed by: Site number: Site name/Location (zone and region): Date:	
Deficiency in Performance	
Corrective action required	
Time scale for implementation of corrective action	
Review of corrective action	
Prohibition notice lifted	
Date:	Signed:
No Action taken: Project closed	
Date:	Signed:

E

Progress Report	
Date and time::	
Principal tasks	**Progress**
Safety issues	**Update risk assessment**
Variations	**Instruction issued**
Operations planned for next week	
Signed:	Position:

Example QA Sheets

WPI	SECTION 4 - SITE PREPARATION (Work Procedure Instructions)		WPI 4.4
Item	Instruction Number		Page 14
		PART 3 - QUALITY ASSURANCE PLAN	Non Compliance Report
1	QA 4.4-A	**Site Preparation** Question: Are the primary, Secondary and tertiary Zones shown on the site drawing?	
		Compliance Signature: RON	See Rpt 4.4-A
2	QA 4.4-B	Question: Is the public Zone indicated on the drawings?	
		Compliance Signature: RON	See Rpt 4.4-B
3	QA 4.4-C	Question: Are the emergency and first aid material locations indicated on the site drawings?	
		Compliance Signature : RON	See Rpt 4.4-C
4	QA 4.4-D	Question : Is the fire fighting equipment location shown on the drawings?	
		Compliance Signature: RON	See Rpt 4.4-D
5	QA 4.4-E	Question: Is the work procedure Instruction Notice Board indicated on the site drawing?	
		Compliance Signature: RON	See Rpt 4.4-E
6	QA 4.4-F	Question : Have the correct bunding requirements been applied to each operating area?	
		Compliance Signature: RON	See Rpt 4.4-F
7	QA 4.4-G	Question : Has the schedule been correctly filled out with the total risk factor?	
		Compliance Signature:	See Rpt 4.4-G
8	QA 4.4-H	Question : Do the calculated total risk factors conform with the policy of minimum risk policy?	
		Compliance Signature:	See Rpt 4.4-H
		Locations of Decontamination and amenities Units	
9	QA 4.4-I	Question: Have both the decontamination unit and the amenities units locations been shown on the site drawing with all access routes shown and defence lines?	
		Compliance Signature	See Rpt 4.4-I
		Working Areas	
10	QA 4.4-J	Question: Are the working areas clearly indicated showing exactly which part of the operations are to be performed within the designated zones including storage of tools and equipment etc?	
		Compliance Signature: RON	See Rpt 4.4-J
11	QA 4.4-K	Question: Has the equipment required for each work activity been assessed and list generated.	
		Compliance Signature: RON	See Rpt 4.4-K
		Defence areas	
12	QA 4.4-L	Question: Are all areas adequately defended against incorrect work activity and are these areas properly fenced and defended against unauthorised access?	
		Compliance Signature: Ron	See Rpt 4.4-L
		Emergency Access	
13	QA 4.4-M	Question: Can the emergency Services gain unrestricted access during and emergency of any kind?	
		Compliance Signature: RON	See Rpt 4.4-M
		Fire Protection	
14	QA 4.4-N	Question: Is there adequate fire fighting equipment to handle a fire for at least 30 minutes?	
		Compliance Signature	See Rpt 4.4-N

Example Emergency flip sheet