

ENVIRONMENT & APPROVALS MANAGEMENT PLAN

Garvan St Vincent's Campus Cancer Centre

SOIL AND WATER MANAGEMENT SUB-PLAN

Scope	Garvan St Vincent's Campus Cancer Centre
Locations	Victoria St, Darlinghurst
Timing	
DPDA	
S of C	
Other Ref	

Issue	Date	Prepared By	Approved By	Remarks
1	16.04.09			

1 OBJECTIVES

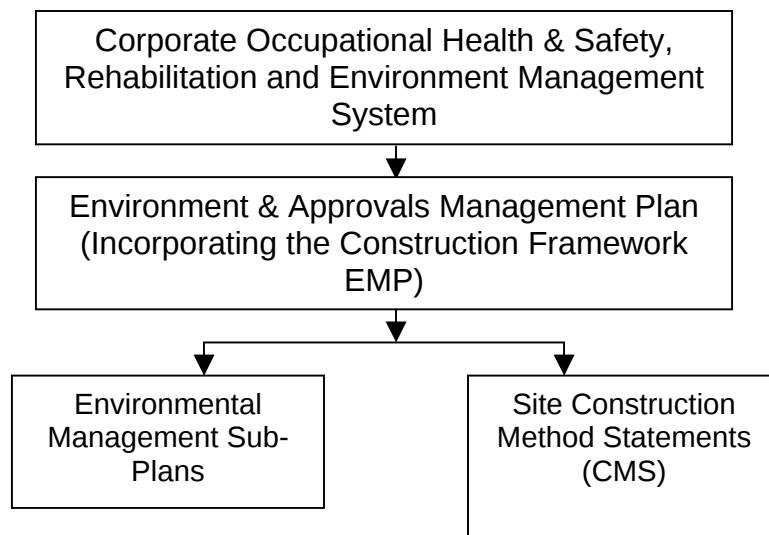
A W Edwards is committed to ensuring that no works significantly impact soil and water in and around the construction sites.

The objective of the Soil & Water Management Sub-Plan is to:

- Ensure that construction works do not significantly impact on the movement of sediment and soil across the site in the form of erosion;
- Ensure that construction works do not significantly impact on the quality of site run-off, causing potential turbidity and chemical contamination in stormwater and local waterways.

2 SCOPE

This Sub-Plan has been developed as part of the Garvan St Vincent's Campus Cancer Centre (GSVCCC) Environment and Approval Management Plan. The relationship between environmental management documentation can be summarised in the flow chart below:



The scope of this Sub-Plan is to provide Project information regarding soil and water management. It is to be applied at the following site:

- Garvan St Vincent's Campus Cancer Centre.

Further information will be required at site, detailing specific site requirements and mitigation measures. This information will be attached to the CMS for the site.

3 STATUTORY REQUIREMENTS

Documents and references relevant to the implementation of the Soil and Water Management Sub-Plan include:

- GSVCCC Works Construction Documentation;
- Protection of the Environment Operations Act 1997 and Regulations;
- Soil Conservation Act 1939 and Regulation;
- Department of Housing, Managing Urban Stormwater: Soils and Construction "The Blue Book".

4 RISK ASSESSMENT

A site specific risk assessment is to be developed, that will determine the sources and risks associated with soil and water management. Details of this risk assessment, including mitigation measures, are to be included in the For Construction version of the Environment and Approvals Management Plan for the project.

The risk assessment process will be reviewed for this aspect at the following times:

- Every six months during a site audit, and including comments from personnel and sub-contractors on site;
- Following high monitoring results;
- Following a complaint;
- If new work processes that have not been previously addressed start on site; &
- Should new requirements for the project or new legislation take effect.

5 MANAGEMENT AND TRAINING

5.1 Identifying Potential Contaminants

Prior to the commencement of operations on site, the following forms of contaminants shall be identified:

- Soil and sediments – including areas that may undergo erosion if uncontrolled, and areas that may produce sediment movement, including airborne and waterborne sediment.
- Waters – including effluent water, contaminated water such as wash water and process run-off, surface water run-off from rain and groundwater.
- Potential contaminants – products stored on site that may contaminate soil and water, including oils and paints.

A list of contaminants shall be made, to ensure that all potential aspects are managed appropriately. This list shall include the location of all contaminants, specific to each work location. This list shall be maintained and updated as construction advances, to ensure that changes to the site and materials stored are also managed.

5.2 Managing Potential Contaminants

Prior to construction commencing control measures shall be determined for all identified sources of potential contaminants. These shall be recorded on the Site Construction Method Statement. Mitigation measures may include, but not be limited to:

- Erection of sediment barriers, such as silt fences and hay bales, particularly at stormwater exit points.
- Direction of surface run-off to facilitate management of turbidity.
- Planting or covering of open unsealed areas.
- Collection of wash water and surface run-off in detention areas, to facilitate settling of solid matter. Where possible this water should be re-used on site, for example in water carts, irrigation and wash water.
- Disposal of collected waters into the stormwater system provided the water complies with EPA requirements and that appropriate permits and licences are obtained.
- Bunding of all fuels and liquid chemicals, such as paints, to ensure containment of leaks and spills.
- Provision of spill kits and appropriately trained personnel to manage and contain spills.

6 EMERGENCY PREPAREDNESS

The following emergency situations will be planned for:

- Fuel and chemical spills
- Uncontrolled release of water, including surface run-off and groundwater
- Uncontrolled sedimentation of a local waterway

Procedures for the above emergency situations can be found in ***Enclosure 1 of this Sub-plan.***

Should any emergency procedure be activated, the Principal's Representative shall be notified as soon as practicable. Incident and corrective/preventive action forms shall be completed.

7 POST CONSTRUCTION

Following the construction at the site and prior to A W Edwards handing the site over to the Principal, all goods and materials stored shall be removed from the site, unless otherwise indicated by the Principal. Should the Principal require materials to remain on site, they shall be stored in a manner to ensure they do not potentially contaminate the surrounding environment.

All areas identified as requiring sediment and erosions control shall be left in a manner to ensure that they do not cause erosion and sedimentation of waterways, preferably through rehabilitation of the area.

8 TRAINING

A W Edwards Site Manager shall be trained to ensure that they meet the requirements of this procedure. Other personnel shall be trained from time to time to ensure that the requirements of this procedure are met.

9 MONITORING

9.1 Monitoring

Prior to commencement of construction, the following monitoring programs shall be developed for the site.

9.2 Water Monitoring

- Water monitoring locations for the site shall be located in order to best determine the impact of construction. Where possible, this shall include sampling sites both upstream and downstream of the site in order to establish base line readings applicable at the time of sampling. Locations will be documented.
- Water sampling shall be conducted at a minimum **6 monthly**, and after any fuel or chemical spills or uncontrolled releases of sediment occur. Suitably qualified and experienced personnel shall undertake sampling.
- Water samples shall be analysed in a NATA accredited laboratory, and shall be analysed for and comply with, at a minimum:

Analyte	Sample Method	Acceptable Limit
pH	APHA 4500H	6.5 – 8.5
Total Suspended Solids	APHA 2560D	50mg/L
Oil and Grease	NA	Visible oil and grease

Should contamination of water be from analytes other than the above, further contaminants may be sampled for.

- All water to be discharged from site, which has been detained on site, shall be analysed for the above prior to discharge.
- Should any samples return an analysis result that exceeds the acceptable limit, an assessment will be made as to the cause of the exceedance. If the cause is still present on site after the sampling has occurred, control measures will put in place to reduce the cause's impact on the water quality. The Principal's Representative shall be notified of any exceedances and incident and corrective/preventive action forms completed.
- We the water is unfit to return to the stormwater system, the retained water will be removed from site using approved contaminated water removalists.

9.3 Erosion and Sediment Control Monitoring

- Sediment control shall be monitored using the water sampling results mentioned above, in particular the Total Suspended Solids results. These will give an indication of the amount of sediment leaving the site.
- Should it be considered required, additional sampling may be undertaken on the downstream side of sediment control measures, such as silt fences and hay bales, in order to determine their effectiveness.

- Erosion control shall be reviewed **weekly** during the work area environmental management audits and also during **monthly** on-site EMP audits. Should any erosion be observed control measures should be implemented.
- The Principal's Representative shall have access as required to all documentation regarding erosion and sediment control.

10 RECORDS

Records for this Sub-Plan will be maintained in accordance with the detailed procedures in the A W Edwards Management System.

All documents requiring sign-off shall be handed to the Principal's Representative one month prior to the sign-off being required.

Particular documents required to be maintained in this Sub-Plan include, but are not limited to:

- Records of sampling locations, and the sampling regime;
- All monitoring results and reports;
- Records of any mitigation measures required due to exceedance of acceptable analysis limits.
- Correspondence with the Principal's Representative, Authorities and other interested parties regarding soil and water management;
- Records of any complaints.

11 AUDITING

The procedure shall be audited during the following audits:

- Six monthly system audits of the EMP, including approvals compliance procedures;
- Monthly on-site and EMP audits;
- Weekly site environmental management audits.

12 NON – COMPLIANCE AND COMPLAINTS

The protocol for the handling, recording and reporting of soil and water related complaints will be in accordance with the AW Edwards GSVCCC Works Environment and Approvals Management Plan (to be developed).

Should it be found that monitoring results are exceeding the criteria reactive measures will be taken to modify demolition/construction operations and minimise the potential for soil erosion or water pollution. These measures shall include the following:

- An assessment shall be made of sources of erosion/pollution during the monitoring period that are likely to be contributing to the higher than acceptable levels

- Controls and/or operational modifications shall be determined that will decrease the levels of erosion/pollution from those specific sources. Should the activity have ceased once sampling results are obtained, measures shall be put in place to ensure that similar results are not obtained from the same process at different sites.
- Monitoring results following to the reactive measures shall be checked to ensure that actions taken have reduced erosion/pollution. Should results still be outside the acceptable limits an assessment shall be made as to the appropriateness of the process. If the process cannot be avoided, and further modifications cannot be implemented, the Principal's Representative shall be consulted to determine the most appropriate course of action.
- An incident form shall be completed if erosion/pollution monitoring results significantly exceed the acceptable limit. All incidents shall be notified to the Principal's Representative as soon as practicable.

13 SUB-CONTRACTOR MANAGEMENT

Subcontractors shall be appropriately managed by A W Edwards to ensure that the requirements of this procedure extend to subcontractor works.

Sub-contractors will be audited at periodic intervals to ensure their compliance with A W Edwards' requirements. Auditing shall be random and based on the length of time sub-contractors are situated on site. Audits may also be the result of non-compliance of the sub-contractor to A W Edwards' requirements.

Enclosure 1

Fuel and Chemical Spills Emergency Procedure

1. Immediately cordon off the area and stop work
2. If the material is flammable, ensure that there are no ignition sources in the immediate area
3. Contain the spill as much as possible using an appropriate material, such as absorbent pads, booms, kitty litter, cement dust or hay bales
4. Block all entrances to stormwater drains, to prevent contamination of the stormwater system
5. Clean up the spill using an absorbent medium, ensuring that the material MSDS is followed and appropriate PPE is used. This may involve the removal of soil or water from the affected area to ensure that there is no remaining contamination
6. Place the contaminated absorbent medium in an appropriate container and ensure that it is labelled with the contents
7. Arrange for the disposal of the material to an appropriately licensed facility
8. Ensure that disposal receipts are obtained as proof of appropriate disposal
9. Ensure that the EPA is notified as soon as possible if the spill left the bounds of the site or has the potential to cause significant environmental damage
10. Notify the Principal's Representative as soon as practicable, and ensure that incident and corrective/preventive action forms are completed

Uncontrolled Releases of Water & Sedimentation of Local Waterways

1. If safe to do so, divert the flow of water into a holding area
2. Notify the Principal's Representative and appropriate Authorities of the incident and complete incident and corrective/preventive action forms
3. If able to hold water, allow water to settle and sample for pH, Total Suspended Solids and Oil and Grease
4. Should sampling results be within acceptable limits, apply for an appropriate permit from Sydney Water to discharge the water
5. Once the permit has been obtained, discharge water
6. Determine the cause of the uncontrolled release and implement preventive actions to manage the area
7. Should local waterways have sustained damage as a result of the release, rehabilitate the area