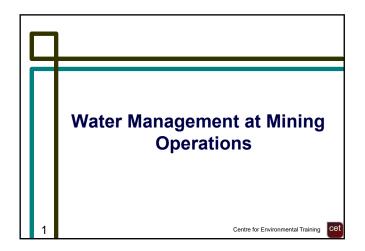
## Practical Erosion and Sediment Control Training 18 September 2025



	Potential Impacts on the Water Environment
	Sediment laden runoff from overburden emplacements, waste rock dumps, stockpiles and disturbed areas
	<ul> <li>Stormwater contamination from process plants, workshops and vehicle washdown areas</li> <li>Acid mine drainage</li> </ul>
	Elevated salinity levels and salt leached from freshly exposed overburden
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Sediment generated by erosion of disturbed soils is most common impact
 Necessary to manage by adoption of erosion and sediment controls
 Goal is to ensure no pollution of surface water and groundwater
 Applied measures seek to minimise impacts from erosion and sedimentation by application of best management practices

Management Principles

Minimise erosion

Capture sediment from disturbed areas

Assess soil and water implications
Plan for erosion and sediment control
Minimise disturbance area

Conserve topsoil for rehabilitation
Control water by diversion of upslope "clean" water, slowing flows to avoid erosion and capturing sediment laden water from disturbed areas
Rehabilitate promptly after disturbance
Maintain erosion and sediment control measures through life of project

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Effective erosion and sediment control throughout life of project involves:

Planning and design
Operations
Closure and rehabilitation
Erosion and Sediment Control Strategies outlined in the Surface Water Management Plan
(Appendix of Water Management Plan)

Considerations

Scope and scale of development
Sensitivity of receiving environment
Rainfall and soil characteristics
Regulatory compliance
Area and duration of exposure
Emphasis on design and scheduling of rehabilitation rather than reliance on short term measures

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# Emphasis Erosion control as a pollution prevention strategy Separation of clean and dirty water by diversion of clean water around site and away from operational areas Management and maintenance of long-term controls Centre for Environmental Training Centre for Environmental Training

	Planning phase
Г	Design drainage for life of mine     Divert runoff
	<ul> <li>Allow free drainage of runoff whilst minimising erosion</li> </ul>
	<ul> <li>Staging development of mine</li> </ul>
	<ul> <li>Separate and treat sediment laden water</li> </ul>
	<ul> <li>Utilise water from sediment ponds for dust suppression and irrigation where possible</li> </ul>
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# Constructional phase measures Clearly identifying and delineating areas to be disturbed and limiting disturbance to those areas Minimisation of all disturbed areas Stabilisation by progressive rehabilitation as soon as practicable Construction of diversion drains/bunds/coffer dams upslope of areas to be disturbed to direct clean runoff away from disturbed areas Construction of catch drains and sediment dams to capture runoff from disturbed areas as required

Constructional phase measures

Construction of other erosion and sediment controls works such as silt fences prior to construction works commencing within the catchment area

Construction of culverts, as required, under access roads, site services corridors and site haul roads

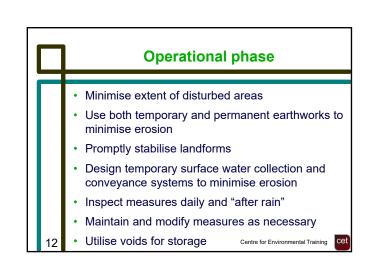
Construction of drainage controls such as table drains at roadsides and hardstand areas as required

Use of scour protection in temporary diversion drains

Construction of all temporary drains as earthen drains at typical grades no steeper than 5% (maximum peak velocities ~1.5m/s) to minimise scouring, otherwise providing adequate scour protection centre for Environmental Training

Constructional phase measures
<ul> <li>Use of stabilising vegetation, geotextile liners, rock check dams etc. (as appropriate) in drains as required to reduce water velocities and prevent scouring</li> </ul>
<ul> <li>Construction of graded banks over the majority of the reshaped overburden areas to minimise erosion and re- direct runoff to catch drains and water disposal areas</li> </ul>
<ul> <li>Locate stockpiled material away from concentrated water flows and seeding topsoil stockpiles if stored for longer than six months</li> </ul>
Construction of road and earthworks cut and fill batters at appropriate slopes to maximise long term stability; and

Regular inspection and maintenance of erosion and



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# Operational phase measures Clearly identifying and delineating areas (through the use of flagging, fencing or bunds) required to be disturbed and limiting disturbance to those areas Minimising areas to be disturbed and cleared and limiting machinery disturbance to these areas Interception of runoff from disturbed catchment areas in pit or sediment dams Preferential diversion of clean runoff away from disturbed areas Reshaping, topsoiling and vegetating road cut and fill batters as soon as practical

	Operational phase measures
	Progressively stripping and direct emplacement or stockpiling topsoil for later use in rehabilitation  Clearing and topsoil stripping to be undertaken ahead of mining operations  Seeding of topsoil stockpiles stored for more than six months  Prompt revegetation of areas as soon as earthworks and mining are complete  Construction of sediment dams/controls to capture runoff from the office and workshop facilities and roadside table drains
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## Operational phase measures Locate stockpile areas away from concentrated water flows Monitoring and maintenance of clean water diversion systems including outlets Regular inspection and maintenance of all erosion and sediment controls and rehabilitated areas; and Maintenance of design capacity of sedimentation dams by removing built-up sediment

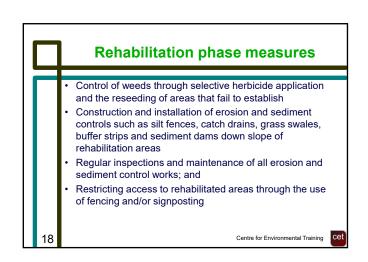
Closure and rehabilitation phase

Minimise long term erosion through effective revegetation

Monitor and maintain vegetation, particularly in the early phase of rehabilitation

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# Progressive rehabilitation of disturbed land as soon as practicable in accordance with the Mining Operations Plan (MOP) and the Rehabilitation Management Plan (RMP) Construction of drainage controls to improve the stability of rehabilitated land Reshaping, topsoiling and vegetating former areas used for earthworks, roads and batters as soon as practical upon completion of works Application of gypsum, lime or other appropriate soil ameliorant at quantified rates to mitigate soil sodicity/dispersibility where exposed subsoils have been identified



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	Documentation
	Document adopted strategy in:
	Environmental management plan
	Mine operation plan
	Water management plan
	<ul> <li>Erosion and sediment control plan</li> </ul>
	<ul> <li>Document current E&amp;SC practices</li> </ul>
	<ul> <li>Allow for plan revision</li> </ul>
	Maintain flexibility to accommodate changes
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	Responsibility
	<ul> <li>Clearly document staff and contractor responsibilities</li> </ul>
	<ul> <li>Delegate responsibilities for inspection and maintenance of erosion and sediment control measures</li> </ul>
	<ul> <li>Involve all staff in inspection and maintenance rather than making it the responsibility of a single or small number of staff</li> </ul>
20	Note that principals cannot transfer obligations under the POEO Act  Centre for Environmental Training Cet

