

Template – Dredge management plan (DMP)

Administration

- 1 Development Approval number (copy of DA should be attached to DMP as an appendix) or a letter from planning authority/client stating that DA is not required.
- 2 Client name eg council, Department of Planning, Transport and Infrastructure, SA Water.
- 3 EPA Licensee name and number.
- 4 Contact details of site supervisor/environment manager who can be contacted throughout the duration of the works.
- 5 Details of other permits and approvals that have been obtained or in the process of acquiring. For example, DEW for works in Marine Parks, Native Vegetation Council for removal of seagrass and other native vegetation, DIT for works on Crown Land and the seabed, DEW for works on Crown Land, Landscape SA for Water affecting activity permit.

Dredging campaign overview

Provide direct information about the dredge campaign

- 1 Why is dredging needed?
- 2 What is the volume of spoil to be removed?
- 3 What are the environmental values of the dredging and spoil placement location eg ecological (including conservation, marine and national parks, sanctuaries, etc), recreational, agricultural?
- 4 Include a satellite map showing the approved dredge footprint (both area and depth profile).
- 5 Provide a site map to scale showing:
 - the dredge location
 - areas used for the storage and maintenance of equipment and placement of spoil;
 - location of fuel and chemical storage and refuelling area;
 - location of sensitive receivers (eg residents, playgrounds, sport clubs, schools etc.)
 - habitat mapping
 - current uses (industrial, marinas, conservation parks, marine parks, fishing, aquaculture, etc)
 - location of waters (marine and inland) and location of nearest sensitive habitats eg seagrass beds, mangroves, reef, aquatic vegetation, fauna nesting sites
 - potential pollution sources (eg stormwater drains, discharges from other industries, etc).
- 6 Provide a description of the environmental conditions where dredging and spoil placement/disposal is to occur (eg current flow, flow rates, winds, waves, tides, temperature, turbidity, ecology etc).
- 7 What dredge equipment will be used for the campaign and for what purpose?
- 8 What is the composition of spoil (eg sediments, contaminants, etc) that is to be removed from the dredge site (sediment analysis)?
- 9 Describe how removed spoil is to be managed (eg transport, dewatering, placement, disposal).
- 10 What is the schedule of works for the dredge campaign (timeline of the dredging and dewatering campaign)?
- 11 What are the normal hours of operation during the dredge campaign?

Impact analysis and risk management

Describe the key environmental risks associated with the dredge campaign (including deployment of equipment and structures, management of spoil (removal, transport, placement, disposal), operation and maintenance of equipment and decommission of site, and how risks will be managed.

Further information to support the development of the DMP can be found in the [FAQs](#).

This can be separated into sub-tables for different activities/aspects if needed, for example

- Water Quality – removal of spoil from dredge location, placement of spoil, discharge of supernatant water, turbidity, dissolved oxygen, etc.
- Noise – underwater noise, noise from machinery, etc
- Air Quality – dust, odour, etc
- Waste – hazardous waste (including contaminated spoil, acid sulfate soils), general waste, spoil disposal, etc
- Hazardous substances – refuelling, maintenance of vehicles and vessels, etc

<p>Applicability</p>	<p>Identify the activities undertaken during the dredge campaign that may cause this impact.</p> <p><i>eg Turbidity .</i></p> <ul style="list-style-type: none"> • <i>Removal of dredge spoil at the dredge site.</i> • <i>Discharge of supernatant water from the dewatering site.</i>
<p>Potential impacts</p>	<p>Describe the impacts that may occur as a result of the activities</p> <p><i>eg Turbidity</i></p> <ul style="list-style-type: none"> • <i>Smothering of aquatic vegetation located within 400 m of the dredge site may occur.</i> • <i>Reduced light available for aquatic vegetation if plumes do reach the vegetation.</i> • <i>Vegetation loss associated with smothering and reduced light.</i>
<p>Desired outcomes</p>	<p>What are the expected environmental outcomes? What are the performance measures which demonstrate these outcomes have been achieved?</p> <p><i>eg Turbidity</i></p> <ul style="list-style-type: none"> • <i>Only aquatic vegetation directly adjacent or within the area to be dredged is impacted (smothered or removed).</i> • <i>No detectable impacts to aquatic vegetation located 100 m from the dredge site.</i> • <i>Turbidity plume restricted to within 100 m of dredge site and 10 m of point of discharge from dewatering of supernatant water. Turbidity measurements not to vary between the control site (500 m) and impact site (120 m).</i>
<p>Risk analysis</p>	<p>What are the risks of this impact occurring (likelihood x consequence of the impact).</p> <p><i>eg Turbidity</i></p> <ul style="list-style-type: none"> • <i>Spoil less than 1% silt/clay.</i> • <i>Volume of spoil 30,000 m³.</i> • <i>Sensitive habitat located 400 m of dredge site however unlikely to be reached by turbidity plume.</i> • <i>Duration of dredging is 2 weeks.</i> • <i>Risk = Medium.</i> <p>Note: The risk categorisation flowcharts (refer to 'What are the risk categorisations of impacts?') provides a broad scale risk analysis for impacts. While this offers guidance on determining potential risks associated with dredging activities, the EPA will undertake a more detailed risk assessment using an aspect impact register which assesses the likelihood and consequence of environmental harm, once the information is received from the applicant/licensee.</p>

<p>Controls</p>	<p>What operational controls will be implemented to minimise the risk of environmental impact?</p> <p><i>eg Turbidity</i></p> <ul style="list-style-type: none"> • <i>Appropriate dredge equipment will be used will minimise generation of turbidity plumes.</i> • <i>Supernatant water will be treated using geotextile bags prior to discharge.</i> <p><i>Monitoring program developed to detect impacts. ALARM and HOLD triggers will be incorporated into the program.</i></p>
<p>Monitoring</p>	<p>What monitoring will be undertaken to detect potential impacts? What parameters will be measured and what are the triggers that may signify an ALARM (assess impact and modify operations) or HOLD (stop works)? How will this be assessed to determine if the operational controls been effective?</p> <p><i>eg Turbidity</i></p> <ul style="list-style-type: none"> • <i>Visual or drone video observations will be undertaken every 2 hours at the dredge site and discharge site to measure plume extent, direction and colour.</i> • <i>Turbidity recordings will be taken at 20 m, 100 m and 500 m from the dredge head three times a day at the same times or after dredging has been operation for over 4 hours.</i>
<p>Management actions</p>	<p>What actions will be undertaken to mitigate impacts should they be detected? Actions must be documented for each impact that has been identified via the assessment of the campaign.</p> <p><i>eg Turbidity</i></p> <p>In the event that ALARM triggers are exceeded:</p> <ul style="list-style-type: none"> • <i>Monitoring of turbidity plumes by turbidity probe will increase to hourly if turbidity plumes are observed to extend beyond 100 m of the dredge head</i> • <i>AND</i> • <i>Works creating the plume will slow or stop until turbidity levels fall below the ALARM triggers</i> • <i>OR</i> • <i>Dredging will move to a lower risk area</i> • <i>OR</i> • <i>Dredge machinery will be taken offline to perform routine maintenance.</i> <p>In the event that HOLD triggers are exceeded:</p> <ul style="list-style-type: none"> • <i>Dredging will immediately stop.</i>
<p>Reporting</p>	<p>How will monitoring be reported and to who and when?</p> <p><i>eg Turbidity</i></p> <ul style="list-style-type: none"> • <i>Results will be recorded daily on a record sheet and provided to EPA upon request. All water quality sampling data will be forwarded to the EPA in an MS Excel spreadsheet.</i> • <i>Any activations of HOLD triggers will be reported to the EPA within 24 hours.</i>