

# Land Standard

AGL-HSE-STD-009.1

This standard applies to land owned, covered by a land access agreement, leased, and managed by AGL. It covers all activities carried out by AGL employees and contractors, at AGL controlled sites, that disturb land or have the potential to contaminate land; and emergency events that result in the need for land remediation or rehabilitation.

The reference numbers given to minimum controls provide a direct linkage between this standard and the Risk and Control Matrix. The Land Methodology AGL-HSE-SDM-009.1 provides further explanation of how to achieve the minimum controls.

RCM Ref	Minimum Controls
<b>LAND DISTURBANCE</b>	
9.1.1.1	<p>Prior to any land disturbance, the relevant Leader must:</p> <ul style="list-style-type: none"> <li>Consult with the Environment representative to determine if the area to be disturbed is covered under an existing regulatory approval held by the AGL controlled site; and</li> <li>Confirm if the activities/works are permissible without approval or are the subject of an exemption.</li> </ul> <p>If approval is required by the AGL controlled site, it must be obtained from the relevant regulatory authority(ies).</p>
9.1.1.2	AGL controlled sites must develop and implement control measures to manage land disturbance.
9.1.1.3	Employees and contractors must be informed of the areas that cannot be disturbed via site inductions, toolbox talks and contractual documentation (where relevant).
9.1.1.4	If the risk of disturbing Acid Sulfate Soils has been identified, guidelines and/or protocols established by the regulatory authority must be followed. When these are not available, comparable, or international recognised Acid Sulfate Soils management protocols must be used.
<b>LAND CONTAMINATION</b>	
<b>General</b>	
9.1.1.5	Notices or orders, issued by the regulatory authority, for conducting assessments and remediation of contaminated land must be complied with and all requirements adhered to.
<b>Prevention</b>	
9.1.1.6	<p>To prevent and minimise releases, spills, leaks of hazardous chemicals/wastes to land, procedures must be developed and implemented for managing:</p> <ul style="list-style-type: none"> <li>Plant and equipment that use and/or store hazardous chemicals/wastes; and</li> <li>Areas where hazardous chemicals/wastes are located, handled, used, and disposed.</li> </ul>
9.1.1.7	<p>Leaders must ensure that plant and equipment that store hazardous chemicals/wastes (e.g. pipelines, storage tanks) are:</p> <ul style="list-style-type: none"> <li>Fitted with appropriate engineering controls;</li> </ul>

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	<ul style="list-style-type: none"> <li>• Located and placed correctly, considering any risks of these being impacted by site activities, third party activities and extreme weather events (e.g. flooding); and</li> <li>• Operated and maintained according to manufacturer guidelines, and inspected so that any deficiencies are rectified.</li> </ul>
<b>Identification</b>	
9.1.1.8	Potential sources of land contamination must be identified, assessed, and documented.
9.1.1.9	Land areas suspected or identified as being contaminated must be documented in the AGL controlled site Contaminated Land Register.
<b>Assessment</b>	
9.1.1.10	Assessments of suspected and known contaminated land areas must be carried out and documented, as per protocols, methods and guidelines prescribed by the regulatory authority.
9.1.1.11	AGL controlled sites must engage a suitably qualified contaminated land professional to assist and/or undertake assessments of suspected and known contaminated land.
9.1.1.12	Land area believed to be contaminated within the AGL controlled site must be reported to the regulatory authority, where required under applicable legislation.
<b>Contaminated Land Management Plan</b>	
9.1.1.13	<p>A Contaminated Land Management Plan must be developed, implemented, and documented for contaminated land areas that have been:</p> <ul style="list-style-type: none"> <li>• Assessed, and contamination is to be managed onsite; and</li> <li>• Remediated, and residual contamination is to be managed onsite.</li> </ul>
9.1.1.14	AGL controlled sites must engage a suitably qualified contaminated land professional to develop the Contaminated Land Management Plan.
9.1.1.15	<p>A Contaminated Land Management Plan must:</p> <ul style="list-style-type: none"> <li>• State the purpose of the Plan;</li> <li>• State the objectives to be achieved and maintained under the plan;</li> <li>• State how the objectives are to be achieved and maintained; and</li> <li>• Make provision for monitoring and reporting compliance with the Plan.</li> </ul>
9.1.1.16	Accredited environmental laboratory services (i.e. certified by National Association of Testing Authorities (NATA) or equivalent accreditation bodies) must be used for chemical analysis of contaminated land samples.
9.1.1.17	The Contaminated Land Management Plan must be submitted for approval by the regulatory authority, where required under applicable legislation.
<b>Incidents and Emergencies</b>	

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9.1.1.18	Releases, spills, leaks or loss of containment incidents must be cleaned-up, as per AGL controlled site procedures.
9.1.1.19	The site Emergency Response Plan must include management of significant environmental incidents resulting in land contamination (i.e. major releases, spills, leaks or loss of containment).
9.1.1.20	Hazards, near misses and incidents resulting in potential or actual land contamination must be reported and investigated using the AGL Incident Management System.
9.1.1.21	Incidents that result in land contamination must be reported to the regulatory authority, in accordance with the notification requirements established by applicable legislation.
<b>Land Remediation</b>	
9.1.1.22	<p>Whenever remediation of contaminated land is required, it must be carried out as per protocols, methods and guidelines prescribed or agreed by the regulatory authority.</p> <p>When these are not available, comparable, or internationally recognised protocols, methods and guidelines must be used.</p>
9.1.1.23	In the event that land contamination extends offsite, remediation must be carried out to a level acceptable by the regulatory authority.
<b>Land Remediation - Remediation Action Plan</b>	
9.1.1.24	A Remediation Action Plan must be developed, implemented, and documented for contaminated land areas requiring remediation.
9.1.1.25	AGL controlled sites must engage a suitably qualified contaminated land professional to develop the Remediation Plan.
9.1.1.26	<p>A Remediation Action Plan must include the following:</p> <ul style="list-style-type: none"> <li>• Remediation goals, set to ensure that, on completion of the remediation and validation, the land be suitable for the proposed use and poses no unacceptable risk to human health and the environment;</li> <li>• Remediation option(s), to adequately deal with the nature and extent of land contamination;</li> <li>• Processes and procedures, to reduce any HSE risks to acceptable levels;</li> <li>• Environmental safeguards, to complete the remediation works in an environmentally acceptable manner; and</li> <li>• Approvals, licences and/or permits, to comply with any legislative requirements imposed by the regulatory authority(ies).</li> </ul>
<b>Remediation Action Plan - Remediation Works</b>	

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9.1.1.27	AGL controlled sites must develop and implement control measures to manage land remediation works, and to ensure the health and safety of personnel involved in contaminated land remediation works.
9.1.1.28	Remediation works must be carried out in accordance with the Remediation Action Plan.
<b>Post-Remediation Validation</b>	
9.1.1.29	Post-Remediation validation must be carried out for each Remediation Action Plan, and a validation report must be produced by a qualified contaminated land professional.
9.1.1.30	A validation report must include details on the following: <ul style="list-style-type: none"> <li>• Remediation works (including contaminated soil transport and disposal);</li> <li>• Assessment of post-remediation against the remediation goals, as set in the Remediation Action Plan; and</li> <li>• How regulatory authority(ies) approval, licence or permit conditions have been met (e.g. may require documentary evidence).</li> </ul>
9.1.1.31	Post-remediation audits, requested by the regulatory authority, must be conducted, and complied with, as per legislative and other specified requirements.  Audit findings must be reviewed by Leaders and if required, corrective action plans must be developed and implemented.
9.1.1.32	Post-remediation validation must be carried out before any land disturbance occurs in an area that has been remediated.
<b>LAND REHABILITATION</b>	
9.1.1.33	Rehabilitation of disturbed land areas must be carried out as soon as practicable after the completion of works or activity ends.
9.1.1.34	Rehabilitation of significantly disturbed land areas must be carried out in accordance with the Rehabilitation Plan.
9.1.1.35	Rehabilitation conditions prescribed in regulatory approval(s) held by the AGL controlled site must be adhered to.
<b>Rehabilitation Plan</b>	
9.1.1.36	A Rehabilitation Plan must be developed, implemented, and documented, for a land area(s) requiring rehabilitation.
9.1.1.37	A Rehabilitation Plan must include: <ul style="list-style-type: none"> <li>• Rehabilitation objectives;</li> <li>• Rehabilitation planning, and associated rehabilitation works;</li> <li>• Rehabilitation evaluation, including development of appropriate rehabilitation criteria and indicators; and</li> </ul>

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	<ul style="list-style-type: none"> <li>Rehabilitation monitoring.</li> </ul>
<b>Rehabilitation Plan - Rehabilitation Works</b>	
9.1.1.38	AGL controlled sites must develop and implement control measures to manage land rehabilitation.
9.1.1.39	Rehabilitation works (e.g. landform shaping and stabilisation, erosion control and drainage) must be carried out in accordance with the Rehabilitation Plan.
<b>TRAINING AND COMPETENCY</b>	
9.1.1.40	Works carried out to investigate and remediate contaminated land, and rehabilitate land, must be carried out by suitably qualified and experienced professionals.

Version	Date	Reviewed by	Approved by	Date approved	Next Review	Comments
3.0	09/05/2018	HSE Systems Manager	Head of Safety/Head of Environment, Health, Audit and Training	09/05/2018	09/05/2020	Version 3.0