

Appendix 3 – Risk Assessment Methodology

Risk Outcome Matrix

Consequence	Likelihood				
	Rare	Unlikely	Possible	Likely	Almost Certain
Critical	Medium	Medium	High	Very High	Very High
Major	Low	Medium	High	High	Very High
Moderate	Low	Medium	Medium	High	High
Minor	Low	Low	Medium	Medium	Medium
Insignificant	Low	Low	Low	Low	Medium

Likelihood Descriptors (likelihood of consequence occurring)

Likelihood Descriptor	Description	Guidance
Almost certain or Frequent	Expected to occur	A similar outcome has arisen several times per year in local operations
Likely or Probable	More likely to occur than not occur.	A similar outcome has arisen several times per year in Alcoa operations worldwide or broader industry
Possible or Occasional	As likely to occur as not to occur.	A similar outcome has arisen at some time previously in local operations
Unlikely or Remote	Not impossible, more likely not to occur than to occur.	A similar outcome has arisen at some time previously in Alcoa operations worldwide or broader industry
Rare or Improbable	Very unlikely to occur.	No experience of this happening in the broader worldwide industry but is theoretically possible

Consequence Descriptors

Aspect	Insignificant	Minor	Moderate	Major	Critical
Vegetation	Minor temporary and localised change to vegetation extent and quality	Localised short term, minor change to vegetation extent and quality	Localised medium to long term or local scale change to vegetation extent and quality	Regional or long-term change to vegetation extent and quality	Irreversible change to vegetation extent and quality; or Results in changes in conservation status of significant species or ecosystems
Conservation Significant Flora	Minor temporary and localised impact on conservation significant species. No direct loss of conservation significant flora in local area although increased stress incurred through indirect impacts.	Minor, localised loss of conservation significant flora through direct or indirect impacts.	Moderate local and minor regional loss of conservation significant flora with no impacts on species survival.	Major regional loss that places significant pressure on continued survival of conservation significant species.	Project results in extinction of conservation significant species on a regional scale.
Fauna death or injury	No animal mortality or loss of conservation significant species.	Minor impact on fauna species populations. Limited mortality of conservation significant species with only minor impact to local populations.	Localised effect on fauna species populations. Moderate impact to local populations of conservation significant species.	Major long-term effect on fauna species populations. Impacts conservation significant species over an extended area or with major impact to local populations	Mortality causes local extinction of wildlife species. Death of multiple conservation significant fauna individuals leading to localised extinction.
Habitat	Minor temporary and localised change to fauna habitat extent and quality, which does not support its ability to support conservation significant flora or fauna	Localised short term, minor change to fauna habitat extent and quality	Localised medium to long term or local scale change to fauna habitat extent and quality	Regional or long-term change to fauna habitat extent and quality	Irreversible change to fauna habitat extent and quality; or Results in changes in conservation status of significant species or ecosystems
Contamination of Soils	Minimal land contamination within localised area, easily	Minimal land contamination which is localised and treatable in	Low level land contamination within localised area resulting in	Low level land contamination on a regional scale resulting in	Mid-level land contamination on a regional scale resulting in

Aspect	Insignificant	Minor	Moderate	Major	Critical
	treatable in short term and does not result in adverse impacts on associated environmental values.	medium term. Does not result in adverse impacts on associated environmental values.	short to medium term impacts to environmental values.	medium to long term impacts on associated environmental values.	permanent impacts on environmental values.
Erosion	Project activities cause negligible erosion in isolated area.	Project activities lead to limited, localised erosion which does not impact on any environmental values and can be rectified in short term.	Project activities lead to substantial erosion which can be rectified in short term.	Project activities lead to substantial erosion which will require long-term remedial works.	Project activities lead to substantial erosion resulting in long term residual effects.
Inland Waters	Localised, minor change to hydrogeological or hydrological regimes or water quality that does not impact: - the ability to support environmental values - upon Public Drinking Water source	Localised short term, minor, change to hydrogeological or hydrological regimes or water quality that: - may affect ability to support environmental values - may impact upon Public Drinking Water source	Localised medium to long term or local scale change to hydrogeological or hydrological regimes or water quality that: - may affect ability to support environmental values - may impact upon Public Drinking Water source which requires remedial actions	Regional or long-term change to hydrogeological or hydrological regimes or water quality that: - may affect ability to support environmental values - may impact upon Public Drinking Water source which results in short-term disruption to water supply	Irreversible change to hydrogeological or hydrological regimes or water quality resulting affect : - may affect ability to support environmental values - may impact upon Public Drinking Water source which results in long-term disruption to water supply ; or Results in changes in conservation status of significant species or ecosystems