

## PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

### WITHOUT MITIGATION MEASURES

Refer to **Section 5.2** of EA for further discussion.

\*Risk Assessment Criteria: C=Consequence, L=Likelihood, R=Risk (according to risk matrix at **Table 16** in EA)

Issue	Details of Potential Risk	Risk (Unmitigated)*			Comment/ Justification
		C	L	R	
Soils					
Erosion & sedimentation	Erosion during construction works, e.g. excavation, pipeline placement. Resultant sedimentation of waterways	2	D	M	-
Acid Sulphate Soils	Exposure of Potential ASS during construction leading to acidification of waterways	3	D	M	There is a 'high probability' of ASS occurring near the ground surface in the vicinity of the proposed pipeline trench.
Water & Coastal Processes					
Marine water quality	Impacts on Port water quality from farm water release (including nutrient increases)	3	D	M	Potential for increased nutrient levels, although not likely to affect human health.
Marine water quality	Impacts on Port water quality from farm stormwater runoff	2	B	L	Site is significantly separated from Port and waterways, by dense vegetation ('buffers'). Regardless, stormwater management measures proposed- see <b>Section 5.6</b> of EA.
Marine water quality	Impacts on Port water quality from farm sewage	1	B	L	Very small amount of sewage (i.e. single toilet). Pumpout system proposed. Site significantly separated from Port. Regardless, regular inspections and emptying proposed- see <b>Section 3.7.4.3</b> of EA.
Marine water quality	Impacts on Port water quality from farm chemical use	1	B	L	Very small volumes proposed to be used. Site significantly separated from Port. Regardless, mitigation measures proposed- see <b>Section 5.4</b> and <b>Section 5.24</b> of EA.
Impacts on coastal processes	Impacts from pipelines e.g scouring of seabed	2	D	M	-
Flooding	Flooding impacts to farm, including from sea level rise	2	A	L	Farm buildings significantly above Flood Planning Level. Potential impacts on Pumphouse acceptable. See <b>Section 5.16</b> of

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					EA.
Groundwater	Impacts from marine water seepage, chemical contamination	2	C	L	Settlement Ponds to have high-density pond liner. Very small volumes of chemicals to be used. Regardless, see <b>Sections 5.24</b> of EA for chemical management measures.
<b>Flora &amp; Fauna</b>					
Aquatic fauna	Harm or disturbance from pipeline construction (including threatened sp.)	3	D	M	Threatened sp. likely to be present (e.g. seahorses).
Aquatic fauna	Entrainment/ impingement of marine organisms into pipe inlets	2	D	M	-
Aquatic flora	Harm or disturbance from pipeline construction (including threatened sp. & seagrasses)	3	F	H	Pipelines to be located in seagrass habitat. Seagrasses not a threatened population.
Aquatic fauna & flora	Impacts from reduced water quality arising from farm water release	3	D	M	Potential for eutrophication, impacts on seagrasses.
Aquatic fauna & flora	Pipelines act as artificial habitat	1	F	L	Positive outcome- artificial structures known to increase species diversity- see <b>Section 5.9</b> of EA.
Wild Abalone populations	Impacts from disease/ pathogens originating from farm	3	D	M	Note closest wild Abalone population approx.10km east of site.
Wild Abalone populations	Impacts on population viability from broodstock collection (removal from wild)	1	A	L	Only small numbers to be harvested from wild populations- see <b>Section 5.21</b> of EA.
Wild Abalone populations	Impacts on genetic integrity from escape of Abalone individuals from farm (breeding)	2	A	L	All water filtered before release (neg. chance of mature Abalone escape). Nearest Abalone pop. 10km east- escapees unlikely to survive.
Wild Abalone populations	Impacts on genetic integrity from escape of viable larvae from farm (breeding)	2	A	L	4 in 1,000,000 chance of larvae survival- see <b>Section 5.21.2</b> of EA.
Other aquatic fauna	Impacts from disease/ pathogens originating from farm e.g. on oysters	2	C	L	Low risk of Abalone disease to impact other species e.g. AVG not known to affect oysters, Perkinsus already present, quarantine procedures proposed- see <b>Section 5.3</b> of EA.

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Terrestrial fauna	Harm or disturbance from construction (including threatened sp. and listed migratory species)	3	D	M	Threatened & migratory sp. known to occur in subject site. Some vegetation (i.e. habitat) clearing proposed.
Terrestrial fauna	Drowning of animals in Settlement Ponds	1	C	L	Ponds will hold saltwater only (not a drinking source). Regardless, measures proposed to prevent koala drowning- see <b>Section 5.8</b> of EA.
Terrestrial flora	Harm or disturbance from construction activities (including threatened sp.) e.g. vegetation clearing	1	F	L	No threatened flora sp. identified on site. Some vegetation clearing proposed, but no significant species or populations- see <b>Section 5.8</b> . Most vegetation retained.
Terrestrial flora and fauna	Disturbance from operation of farm (e.g. vehicle collisions, light disturbance to nocturnal fauna)	1	C	L	Nature of farm tracks will ensure vehicle speeds low, minimising chance of animal collision. Regardless, recommendations made to reduce light impacts- se <b>Section 5.8</b> .
<b>Sensitive Ecosystems</b>					
Endangered Ecological Communities	Impacts on viability of EEC from clearing vegetation and construction works	3	D	M	Small area of understorey to be disturbed for pipe construction. No tree clearing proposed.
Coastal wetlands	Impacts from boardwalk construction and farm operation (e.g. stormwater runoff)	3	C	M	Pylons to be installed to support boardwalk.
Sanctuary Zone	Spillover effects from farm on nearby Sanctuary Zone (Marine Park) e.g. water quality impacts	3	D	M	Pipes significantly separated from Sanctuary zone.
<b>Bushfire Hazard</b>					
Bushfire safety	Threats to human safety from bushfire (within farm)	4	D	H	Site is bushfire prone.
<b>Pond Safety</b>					
Pond collapse	Contamination of soil due to Settlement Pond collapse	2	B	L	Ponds will contain saltwater only. Site is already somewhat influenced by saltspray from Port. See <b>Section 5.23</b> of EA.
Drowning	Human safety impacts from Settlement Ponds (i.e. drowning)	4	A	L	Visitors to be inducted, site remote from residential areas. See <b>Section 5.23</b> of EA.
<b>Other Trades &amp; Uses of the Port</b>					
Oyster leases	Impacts on health/ viability	3	C	M	No oyster leases in close proximity, although

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	of nearby oyster leases from reduced water quality arising from farm water release				'priority oyster areas' nearby.
Oyster leases	Impacts from disease/ pathogens originating from farm	2	C	L	Low risk of Abalone disease to impact oysters e.g. AVG not known to affect oysters, Perkinsus already present, quarantine procedures proposed and no leases nearby- see <b>Section 5.3</b> of EA.
Oyster leases	Increased predation effects- farm behaving as a bird attractant	1	A	L	Main farm area set significantly back from Port. All Abalone tanks covered or indoors.
Commercial, recreational fishing	Interference with fishing activities e.g. from pipelines	2	D	M	Pipes buried in shallow intertidal zone. Potential for conflict between pipes and anchors/ deep nets.
<b>Amenity</b>					
Noise	Impacts on nearby residents- pumps, vehicles etc	2	A	L	Noise impact assessment determined no impact due to separation and burial of Pumphouse. See <b>Section 5.12</b> of EA.
Visual	Detrimental impacts on views or visual character from farm structures	1	B	L	Pipes buried at foreshore and intertidal area. Farm screened by dense vegetation. See <b>Section 5.14</b> of EA.
Odour & air quality	Dust emissions from construction affecting nearby residents. Potential odours during operation	1	B	L	Farm significantly separated from village. External roads sealed/ gravelled. Regardless, mitigation measures proposed- see <b>Section 5.15</b> of EA. No Abalone processing on site to cause odours.
Traffic	Detrimental impacts associated with traffic volume increases	1	B	L	Only low traffic volumes likely- see <b>Section 5.11</b> of EA.
<b>Heritage</b>					
Aboriginal heritage	Impacts on heritage values from construction activities	3	B	L	Pipes designed to avoid potential midden. Detailed heritage assessment confirms proposal unlikely to impact on heritage values- see <b>Section 5.10</b> of EA.
Non-Aboriginal heritage	Impacts on identified heritage items	1	A	L	No items known or expected to occur on site.
<b>Access</b>					
Access along foreshore	Restriction on foreshore access from pipeline placement	2	A	L	Pipes buried within foreshore and intertidal area- access unrestricted. Construction impacts on access short-term only.

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Access to waterways	Restrictions on boating access from pipeline placement, including anchor interference	2	C	L	Pipes buried in shallow intertidal area. Seagrasses present in deeper areas (boats usually do not anchor in seagrasses). Only entanglement hazard likely to be inlet screens (at 15-20m depth)- boats unlikely to anchor at this depth. Existing navigational markers encourage boats to avoid area. Regardless, navigational buoys proposed- see <b>Section 5.19</b> of EA.
Navigation	Navigational hazards arising from pipeline placement	2	D	M	e.g. conflict with boats.
<b>Traffic &amp; Roads</b>					
Road safety & functionality	Reduction in safety, functionality & amenity from traffic associated with farm construction and operation	2	B	L	Very low increases in traffic likely. Unlikely to affect existing safety or amenity- see <b>Section 11</b> of EA.
<b>Social &amp; Economic</b>					
Job creation	Jobs created from the farm during construction and operation	1	F	L	Positive outcome- approximately 15 operational and 35 construction jobs created. See <b>Section 5.20</b> of EA.
Flow-on economic impacts	Flow-on economic impacts to the local community from farm construction and operation	1	F	L	Positive outcome- from purchase of goods and services for farm. See <b>Section 5.20</b> of EA.
Education & research	Opportunities for education and aquaculture research	1	D	L	Positive outcome- unique aquaculture facility. May be scope for such opportunities in future. See <b>Section 5.20</b> of EA.
Property values	Impacts on property values due to proximity to the farm	2	C	L	Farm significantly separated and screened from village. No significant amenity impacts likely to occur.
<b>Health &amp; Safety</b>					
Abalone consumption	Contamination of Abalone during culture, harvest or transport leading to health impacts on consumers	3	B	L	Regardless, food health addressed at <b>Section 5.22</b> of EA.
Chemical use	Hazards associated with use of chemicals and fuels within farm	3	C	L	All staff trained and to follow <i>Material Safety Data Sheet</i> instructions. Emergency wash stations, spill kits and first aid supplies installed as required. See <b>Section 5.24</b> for further details

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Fire	Fire within buildings e.g. associated with chemical use, kitchen use etc	3	C	L	Flammable chemicals stored appropriately. Fire extinguishers installed in most buildings.