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Published on: 19 July 2012

Statement No: 904

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE *ENVIRONMENTAL PROTECTION ACT 1986*)

CAPE RICHE SEAWATER DESALINATION PLANT

Proposal: The proposal is to construct and operate a 12GL/annum seawater desalination plant in order to supply water to Grange Resource's Southdown Magnetite operations.

The proposal is further documented in schedule 1 of this statement.

Proponent: Grange Resources Limited

Proponent Address: Level 11, 200 St George's Terrace, PERTH WA 6000

Assessment Number: 1864

Report of the Environmental Protection Authority: Report 1431

The proposal referred to in the above report of the Environmental Protection Authority may be implemented. The implementation of that proposal is subject to the following conditions and procedures:

1 Proposal Implementation

1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

2 Proponent Nomination and Contact Details

- 2-1 The proponent for the time being nominated by the Minister for Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.
- 2-2 The proponent shall notify the Chief Executive Officer of the Office of the Environmental Protection Authority (CEO) of any change of the name and address of the proponent for the serving of notices or other correspondence within 30 days of such change.

3 Time Limit of Authorisation

- 3-1 The authorisation to implement the proposal provided for in this statement shall lapse and be void five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.
- 3-2 The proponent shall provide the CEO with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.

4 Compliance Reporting

- 4-1 The proponent shall prepare and maintain a compliance assessment plan to the satisfaction of the CEO.
- 4-2 The proponent shall submit to the CEO the compliance assessment plan required by condition 4-1 at least six months prior to the first compliance report required by condition 4-6, or prior to implementation, whichever is sooner.

The compliance assessment plan shall indicate:

- 1 the frequency of compliance reporting;
- 2 the approach and timing of compliance assessments;
- 3 the retention of compliance assessments;
- 4 the method of reporting of potential non-compliances and corrective actions taken;
- 5 the table of contents of compliance assessment reports; and
- 6 public availability of compliance assessment reports.

- 4-3 The proponent shall assess compliance with conditions in accordance with the compliance assessment plan required by condition 4-1.
- 4-4 The proponent shall retain reports of all compliance assessments described in the compliance assessment plan required by condition 4-1 and shall make those reports available when requested by the CEO.
- 4-5 The proponent shall advise the CEO of any potential non-compliance within seven days of that non-compliance being known.
- 4-6 The proponent shall submit to the CEO the first compliance assessment report fifteen months from the date of issue of this statement addressing the twelve month period from the date of issue of this statement and then annually from the date of submission of the first compliance assessment report.

The compliance assessment report shall:

- 1 be endorsed by the proponent's Chief Executive Officer or a person delegated to sign on the Chief Executive Officer's behalf;
- 2 include a statement as to whether the proponent has complied with the conditions;
- 3 identify all potential non-compliances and describe corrective and preventative actions taken;
- 4 be made publicly available in accordance with the approved compliance assessment plan; and
- 5 indicate any proposed changes to the compliance assessment plan required by condition 4-1.

5 Public Availability of Data

- 5-1 Subject to condition 5-2, within three months of the issue of this statement and for the remainder of the life of the proposal the proponent shall make publicly available, in a manner approved by the Chief Executive Officer, all validated environmental data (including sampling design, sampling methodologies, empirical data and derived information products (e.g. maps)) relevant to the assessment of this proposal and implementation of this Statement.

- 5-2 If any data referred to in condition 5-1 contains particulars of:
- i. a secret formula or process; or
 - ii. confidential commercially sensitive information

The proponent may submit a request for approval from the CEO to not make this data publically available. In making such a request the proponent shall provide the CEO with an explanation and reasons why the data should not be made publically available.

6 Water Quality

6-1 The proponent shall operate the desalination plant in such a way as to ensure that the composition and rate of brine discharge will meet:

- the Environmental Quality Objectives (EQOs) established by the Environmental Protection Authority (schedule 2); and
- protection of 99% of species at the boundary of the Low Ecological Protection Area (LEPA), located at a 100 m radius from the discharge point as shown in Figure 2.

6-2 The proponent shall only discharge brine to the designated LEPA shown in Figure 2.

6-3 To facilitate the achievement of the EQOs established by the Environmental Protection Authority (schedule 2), the proponent shall:

1. Conduct Whole Effluent Toxicity (WET) testing of brine produced by the desalination plant during commissioning, and prior to operation of the plant, using the approaches, procedures and end-points recommended in ANZECC & ARMCANZ (2000)*.
2. Ensure that the operational phase of the desalination plant is not initiated until the WET testing required by condition 6-3.1 has demonstrated that a rate of dilution of 53 is sufficient for protection of 99% of species at the boundary of the LEPA as shown in Figure 2, or until the CEO has authorised the commencement of operations.
3. Conduct repeat WET testing on the operational brine discharge:
 - i. within 12 months of initiation of the operation of the desalination plant; and
 - ii. following any significant changes to the operation of the desalination plant,

to confirm that a dilution rate of 53 is sufficient for protection of 99% of species at the boundary of the LEPA (Figure 2).

** National Water Quality Management Strategy Report 4, the Australian and New Zealand Guidelines for Fresh and Marine Water Quality.*

- 6-4 In the event that WET testing required by conditions 6-3 shows that more than 53 dilutions are required to meet a high level of ecological protection at the boundary of the LEPA the proponent shall:
1. Report the results of WET testing to the CEO within 2 months of conducting the testing.
 2. Provide the CEO with a report which:
 - a. further investigates dilution of the brine within the LEPA;
 - b. demonstrates whether the actual dilution rate will achieve a high level of ecological protection at the LEPA boundary; and
 - c. provides contingency management actions to be implemented in the event that the actual dilution rate does not achieve a high level of ecological protection at the LEPA boundary.
- 6-5 The proponent shall implement the approved Construction Environmental Management, Operational Environmental Management and Brine Discharge Management Plans (as contained in the Response to Submissions, January 2012) and maintain the monitoring and management programs for the life of the project or until the CEO advises that the program may cease.
- 6-6 In the event that monitoring required by condition 6-5 indicates that any of the EQOs established in schedule 2 have not been achieved, the proponent shall:
1. report the non-achievement to the CEO within 7 days of the finding;
 2. propose remediation actions to reinstate the EQOs; and
 3. implement remedial actions approved by the CEO within 21 days of the finding.
- 6-7 The proponent shall ensure that no chemical is released into the intake channel unless pumps are operating such that water is being drawn into the channel and not in the reverse direction.

Benthic Primary Producer Habitat

- 7-1 The proponent shall implement the approved Construction Environmental Management Plan (January 2012), Operational Environmental Management Plan (January 2012) and the Brine Discharge Management Plan (January 2012), including the coral spawn entrainment assessment.

- 7-2 The proponent shall ensure that construction of the intake minimises temporary disturbance to benthic habitat associated with the rockfill platform to 0.14 ha and that no irreversible damage occurs to benthic habitat outside the 0.003 ha direct footprint of the intake channel.
- 7-3 To determine that the requirements of condition 7-2 are met, the proponent shall report on the results of monitoring required by condition 7-1 to the CEO within one month of the completion of construction, and annually thereafter, until the CEO is satisfied that the benthic habitats beyond the footprint of the intake channel have recovered.
- 7-4 In the event that the monitoring required by condition 7-1 indicates that the requirements of condition 7-2 have not been met, the proponent shall:
- report the findings to the CEO within one month along with proposed remediation actions;
 - implement remediation actions approved by the CEO within 3 months of the finding; and
 - continue BPPH monitoring to the satisfaction of the CEO until the CEO is satisfied that the recovery of benthic habitat meets the requirements of condition 7-2.
- 7-5 The proponent shall ensure that the operation of the brine discharge and the seawater intake are managed so that there are no detectable effects on the intertidal reef communities and any sub-tidal benthic communities beyond the boundary of the LEPA as shown in Figure 2.
- 7-6 To demonstrate that the requirements of condition 7-5 are met, the proponent shall report on the results of monitoring required by condition 7-1 within the annual compliance report required by condition 4-6.
- 7-7 In the event that monitoring required by condition 7-1 indicates that the requirements of condition 7-5 are not being met the proponent shall:
1. report results, and provide proposed remediation actions, to the CEO-within one month of the finding;
 2. implement the remediation actions approved by the CEO within 3 months of the finding; and
 3. continue to implement the actions approved by the CEO until advised by the CEO that the actions may cease.

7-8 The proponent shall report on the results of the coral spawn entrainment assessment required by condition 7-1, including any additional management options that could be implemented if the requirements of condition 7-5 are unlikely to be met, to the CEO within one month of the finding.

8 Marine Fauna

8-1 Prior to any blasting activity, the proponent shall implement temporary exclusion zones of 400 m from the blasting site for pinnipeds and Little Penguins, and 1 km for cetaceans. The temporary exclusion zones shall be demarcated with marker buoys at 500 m spacing along the boundary of the 400 m and 1 km zone. Additional buoys shall be placed at 1.5 km and 2 km from the blasting site. Placement of buoys will assist qualified marine fauna observers to determine the proximity of any pinniped, penguins or cetaceans in relation to the blasting site.

8-2 Visual monitoring for the presence of pinnipeds, Little Penguins and cetaceans within a 2 km radius of the blasting area shall be undertaken by qualified marine fauna observers. Visual monitoring shall commence at least 60 minutes prior to any blasting activity using binoculars and the unaided eye. Visual monitoring shall be conducted from sufficient multiple vantage points to ensure that the entire 2 km observation area can be observed.

8-3 If cetaceans, pinnipeds or Little Penguins are observed within 2 km radius of the blast area their movements shall be monitored by one support vessel. If a pinniped or Little Penguin enters within 400 m, or a cetacean within 1 km of the blasting area, blasting shall cease. Blasting shall only resume when all pinnipeds, Little Penguins and cetaceans have left the exclusion zones of their own accord, or when pinnipeds, Little Penguins and cetaceans have not been seen for more than thirty minutes within relevant exclusion zones.

9 Dieback

9-1 The proponent shall ensure that dieback disease (*Phytophthora* species) is not introduced as a direct or indirect result of implementation of the proposal into uninfected areas within the project area.

9-2 Prior to construction the proponent shall, in consultation with the Department of Environment and Conservation (DEC), have an experienced dieback interpreter acceptable to the DEC carry out a baseline dieback survey of the proposed pipeline alignment to determine whether there are any existing areas of dieback disease and, if it is present, to map the infected areas.

9-3 Prior to construction the proponent shall:

1. Submit a report to the DEC on the results of the survey referred to in condition 9-2 providing maps and photographs and outlining the planned risk mitigation in each instance that dieback has been identified.
2. Submit detailed management measures including hygiene (inspection certification by appointed persons for each vehicle entry, clean down points and clean down procedures) to the requirements of the CEO on advice from the DEC.
3. Implement dieback management and hygiene measures detailed in 9-3.2 during construction, commissioning and operation.

9-4 The proponent shall resurvey the pipeline alignment in spring annually for at least three years unless otherwise agreed by the CEO, following completion of the pipeline construction, to ensure that the requirements of condition 9-1 have been met.

9-5 In the event that there are locations where condition 9-1 has not been met, the proponent shall develop remedial measures in consultation with the DEC and shall implement those remedial measures until approval is given to stop by the CEO on advice from the DEC.

9-6 Prior to ceasing annual spring dieback surveys as required by condition 9-4 and remedial measures referred to in condition 9-5 the proponent shall provide a closeout report and seek approval from the CEO on advice from the DEC.

10 Weeds

10-1 The proponent shall ensure that no new species of agricultural or environmental weed is introduced into the project area, and that the abundance and distribution of existing weeds is not increased as a direct or indirect result of implementation of the proposal.

10-2 Prior to the commencement of construction, the proponent shall, in consultation with the DEC, have a suitably qualified botanist carry out a field survey of the project area to collect baseline data on the species, location and areas of agricultural and environmental weed plants present.

10-3 Prior to the commencement of construction the proponent shall:

1. submit a report to the DEC the results of the survey referred to in condition 10-2 detailing the survey method used, providing maps and photographs

and outlining the planned risk mitigation in each instance of weed infestation; and

- 2 submit detailed management measures for the proposal including hygiene (clean down points and clean down procedures) to the satisfaction of the CEO on advice from the DEC.
- 10-4 The proponent shall resurvey project area in spring annually for at least two years, unless otherwise agreed by the CEO, following completion of construction to ensure that the requirements of condition 10-1 have been met.
- 10-5 In the event that there are locations where condition 10-1 has not been met, the proponent shall develop remedial measures in consultation with the DEC and shall implement those remedial measures until approval is given to stop by the CEO on advice from the DEC.
- 10-6 Prior to ceasing annual spring weed surveys and remedial measures referred to in condition 10-5 the proponent shall provide a closeout report and seek approval from the CEO on advice from the DEC.

11 Trapped Fauna

- 11-1 The proponent shall ensure that open trenches associated with construction of all pipelines associated with the proposal are cleared of trapped fauna by suitably trained fauna-rescue personnel at least twice daily. Details of all fauna recovered shall be recorded, consistent with condition 11-5. The first daily clearing shall take place no later than three hours after sunrise and shall be repeated between the hours of 3:00 pm and 6:00 pm.

The open trenches shall also be cleared, and fauna details recorded, by fauna-rescue personnel no more than one hour prior to backfilling of trenches.

Note: "fauna-rescue personnel" means persons or contractors employed by the proponent whose responsibility it is to walk the open trench to recover and record fauna found within the trench.

- 11-2 All fauna-rescue personnel shall obtain the appropriate licenses as required for fauna rescue under the *Wildlife Conservation Act 1950* prior to undertaking clearing of trapped fauna and be trained in the following:
1. fauna identification, capture and handling (including specially protected fauna and venomous snakes likely to occur in the area);
 2. identification of tracks, scats, burrows and nests of conservation-significant species;

3. fauna vouchering (of deceased animals);
 4. assessing injured fauna for suitability for release, rehabilitation or euthanasia;
 5. familiarity with the ecology of the species which may be encountered in order to be able to appropriately translocate fauna encountered; and
 6. performing euthanasia.
- 11-3 Open trench lengths shall not exceed a length capable of being inspected and cleared by the fauna-clearing personnel within the required times as set out in condition 11-1.
- 11-4 Ramps providing egress points and/or fauna refuges providing suitable shelter from the sun and predators for trapped fauna are to be placed in the trench at intervals not exceeding 50 metres.
- 11-5 The proponent shall produce a report on fauna management within the pipeline trenches at the completion of pipeline construction. The report shall include the following:
1. details of all fauna inspections;
 2. the number and type of fauna cleared from trenches;
 3. fauna mortalities; and
 4. all actions taken.

The report shall be provided to the CEO and the DEC no later than 21 days after the completion of pipeline installation, and shall be made publicly available in a manner approved by the CEO.

12 Decommissioning

- 12-1 At least six months prior to the anticipated date of closure, the proponent shall provide a final closure report to the CEO detailing to the satisfaction of the CEO how the following decommissioning criteria will be met:
1. removal or, if agreed in writing by the appropriate regulatory authority, retention of plant and infrastructure agreed in consultation with relevant stakeholders, including discussion and consideration of

current best practice in relation to removal and decommissioning of buried pipelines;

2. rehabilitation of all disturbed areas to a standard suitable for the new land use(s) as agreed pursuant to the consultation referred to in condition 12-1(1); and
3. identification of any contaminated areas, including provision of evidence of notification and proposed management measures to the DEC.

12-2 The proponent shall implement the final closure report required by condition 12-1.

Notes

1. Where a condition states “on advice of the Office of the Environmental Protection Authority”, the Office of the Environmental Protection Authority will provide that advice to the proponent.
2. The Office of the Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the DEC.
3. The Minister for Environment will determine any dispute between the proponent and the Office of the Environmental Protection Authority over the fulfilment of the requirements of the conditions.
4. The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the *Environmental Protection Act 1986*.

[Signed 18 July 2012]

HON BILL MARMION MLA

MINISTER FOR ENVIRONMENT; WATER

The Proposal (Assessment No. 1864)

The Desalination Plant would be located approximately 5 km west of Cape Riche, and approximately 19 km from the nearest town of Wellstead. The Desalination Plant would be based on Reverse Osmosis technology.

A seawater intake and pump station would be located 500m east of Cheyne Inlet, and a brine outfall would be located on the south side of Cape Riche. The following pipelines and infrastructure would be also constructed:

- 25.6 km treated water pipeline from the desalination plant to the mine site;
- 5 km seawater transfer pipeline from the intake and pump station to the desalination plant;
- 5.7 km brine discharge pipeline from the desalination plant to the outfall location; and
- overhead powerlines from the mine site to the desalination plant, combination overhead/underground cable from desalination plant to seawater intake.

The locations of all project elements as described above are shown in Figure 1. The main characteristics of the proposal are summarised in Table 1 below. A detailed description of the proposal is provided in Section 2 of the PER (Grange Resources, 2011).

Table 1: Summary of key proposal characteristics

Element	Description
General	
Footprint	
Desalination Plant	- up to 9.5 ha
Seawater intake and pump station	- up to 2 ha
Seawater transfer pipeline	- up to 8.6 ha
Treated water transfer pipeline	- up to 38 ha
Brine discharge pipeline	- up to 4.6 ha
Power lines	- none (within pipeline easement)
Total	Up to 64.7 ha
Clearing of native vegetation	
Desalination Plant	- isolated trees on grazing land
Seawater intake and pump station	- up to 0.9 ha
Seawater transfer pipeline	- up to 2 ha
Treated water transfer pipeline	- up to 10 ha
Brine discharge pipeline	- up to 3 ha
Power lines	- none (within pipeline easement)
Total	Up to 15.9 ha
Desalination Plant	
Location	Lot 4768 Cape Riche Road, Wellstead.
Treatment process	Reverse Osmosis desalination with pre-

	treatment system for removal of particulate matter
Design capacity	Up to 12 Gigalitres per year
Open Channel Seawater Intake and Pump Station	
Location	Lot 8, north side of Cape Riche
Intake design	Open Channel
Brine Discharge	
Location	Lot 8, south side of Cape Riche
Outfall design	Pipeline discharge into engineered channel into natural fissure
Discharge Volume	Up to 55 ML/day
Discharge temperature	Not more than 2°C above ambient at the plant
Discharge Salinity	Up to 70 ppt
Low Ecological Protection Area	Up to 100 m from brine discharge point as shown in Figure 2
Pipelines and infrastructure	
Seawater Transfer Length Easement Diameter	- up to 5 km - 15-20m wide - Up to 1000mm
Treated Water Transfer Length Easement Diameter	- up to 25.6 km - 15 m wide - up to 900 mm
Brine Discharge Pipeline Length Easement Diameter	- up to 5.7 km - 15-20 m wide - up to 900 mm
Power lines	<ul style="list-style-type: none"> • 33 kV overhead single conduit line from minesite to desalination plant; and • 33 kV combination overhead and underground cable from desalination plant to sweater intake.
Leak Detection	<ul style="list-style-type: none"> • Flow meters to be installed and monitored, and monthly visual inspections of pipelines to be carried out.
Waste Products	
Sludge from Reverse Osmosis process Production Disposal	- up to 2 tonnes per day - offsite disposal at licensed facility
Bio-matter from pump station Production Storage Disposal	- up to 2 tonnes per day - storage on site in covered bins - offsite disposal at licensed facility

Figure 1 – Proposal location

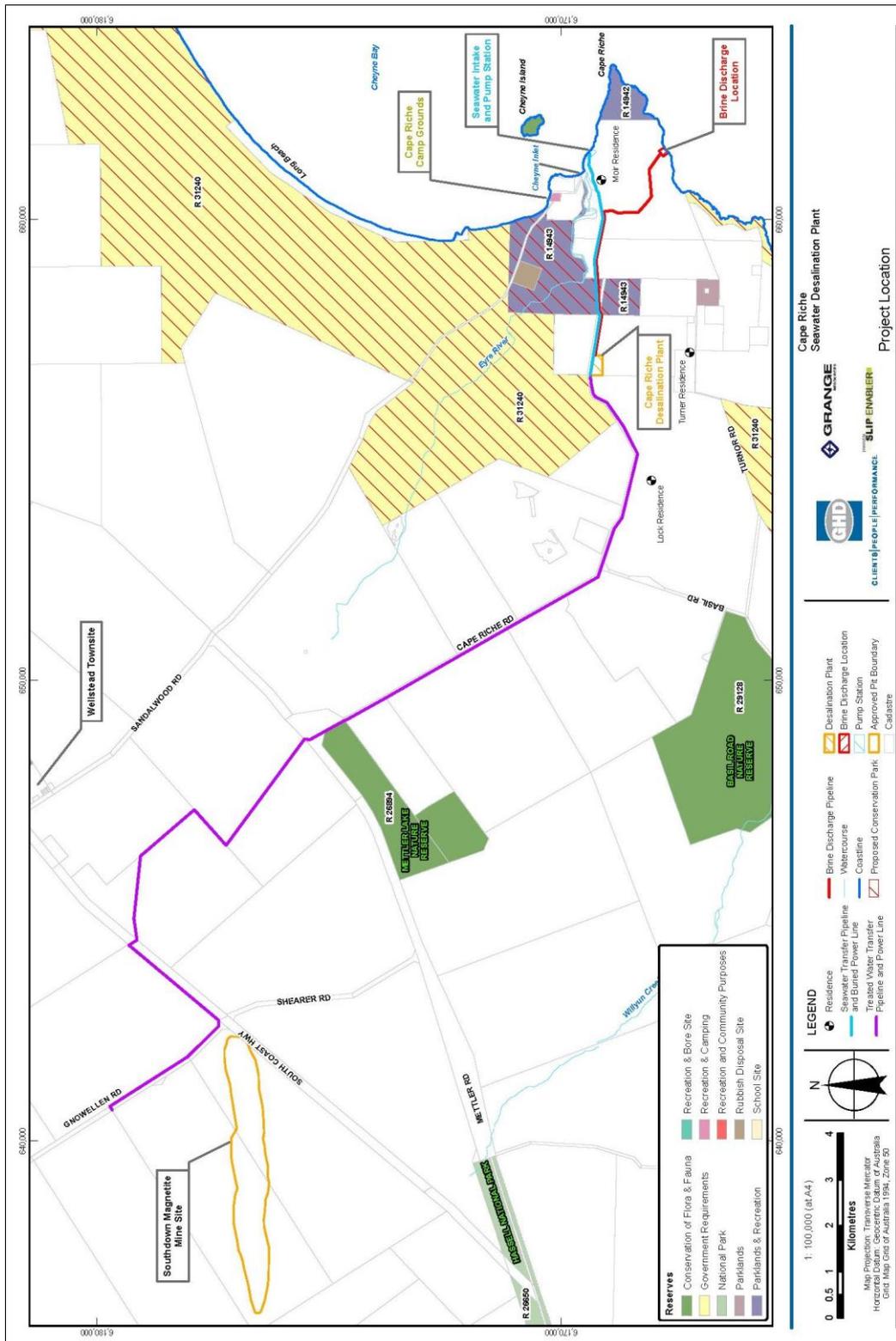
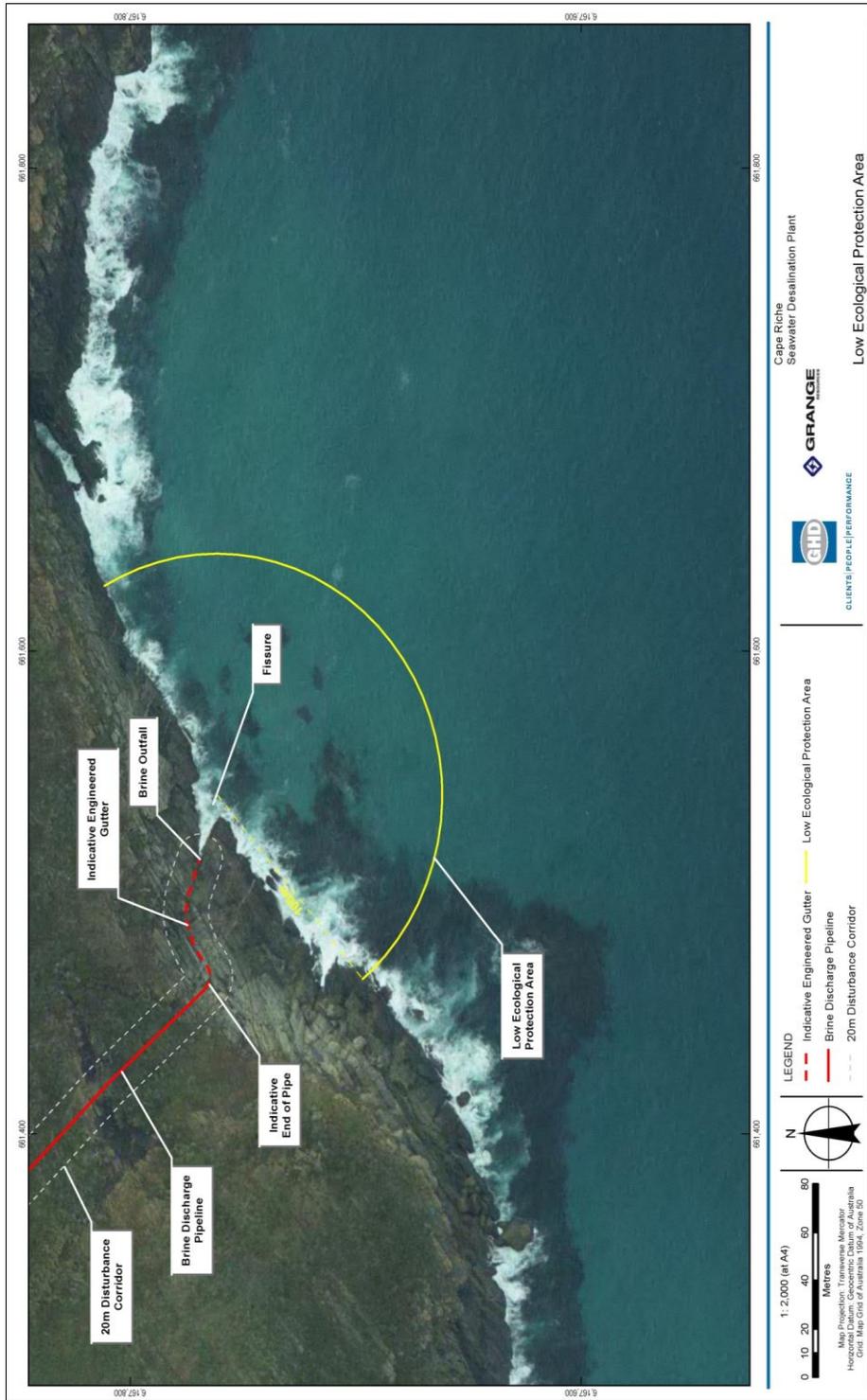


Figure 2 – Location of Low Environmental Protection Area



Environmental Values and Environmental Quality Objectives for the marine waters of Cape Riche.

Environmental Values	Environmental Quality Objectives
Ecosystem Health	<p>Maintain ecosystem integrity</p> <p>Two levels of ecological protection apply to Cape Riche:</p> <ul style="list-style-type: none"> • LOW (up to 100 m from the brine discharge) – where the objective is to meet the guidelines for 80% species protection* for potentially bioaccumulating contaminants; and • HIGH (beyond 100 m of the brine discharge) – where the objective is to ensure that salinity and temperature do not exceed +0.6 ppt or +2 °C above background respectively and that toxicity levels meet a guideline of 99% species protection*.
Recreation and Aesthetics	<p>Water quality is safe for recreational activities in the water (e.g. swimming).</p> <p>Water quality is safe for recreational activities on the water (e.g. boating).</p> <p>Aesthetic values of the marine environment are protected.</p>
Cultural and Spiritual	<p>Cultural and spiritual values of the marine environment are protected.</p>
Fishing and Aquaculture	<p>Seafood (caught or grown) is of a quality safe for eating.</p> <p>Water quality is suitable for aquaculture purposes.</p>
Industrial Water Supply	<p>Water quality is suitable for industrial supply purposes.</p>

* Refer to National Water Quality Report 4 *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000) for contaminant guidelines and guidance on WET testing.