

Statement No. 000594

MINISTER FOR THE ENVIRONMENT AND HERITAGE

STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL (PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE ENVIRONMENTAL PROTECTION ACT 1986)

DESALINATED WATER AND SEAWATER SUPPLIES PROJECT BURRUP PENINSULA, SHIRE OF ROEBOURNE

Proponent:

Water Corporation

Proponent Address: 629 Newcastle Street, Leederville WA 6007

Assessment Number: 1419

Previous Assessment Number: 1378

Previous Statement Number: Statement No. 567 (published on 22 June 2001).

Report of the Environmental Protection Authority: Bulletin 1044

Previous Report of the Environmental Protection Authority: Bulletin 1014

The implementation of this proposal to which the above reports of the Environmental Protection Authority relate is subject to the conditions and procedures contained in Ministerial Statement No. 567 (22 June 2001), as amended by the following:

Condition 2-1 (Proponent Commitments) of Statement No. 567 is deleted and the following condition is inserted:

2 **Proponent Commitments**

2-1 The proponent shall implement the revised consolidated environmental management commitments of 19 March 2002 as documented in schedule 2 of this statement.

Note: The attached schedule 1 is inserted in place of schedule 1 of 22 June 2001.

Dr Judy Edwards MLA MINISTER FOR THE ENVIRONMENT AND HERITAGE

Published on

- 5 JUN 2002

29th FLOOR, ALLENDALE SQUARE, 77 ST. GEORGE'S TERRACE, PERTH 6000 TELEPHONE: (08) 9220 5050 FACSIMILE: (08) 9221 4665/8 E-MAIL: judy-edwards@dpc.wa.gov.au

Schedule 1 (Revised)

The Proposal (Assessment No. 1419)

The proposal is to construct and operate a seawater supply and desalination system to service the requirements of new industrial developments on the Burrup Peninsula, approximately 1,300 kilometres north of Perth (Figure 1).

The proponent proposes to:

- Provide a seawater supply system with a capacity of approximately 280 megalitres per day;
- Provide a brine discharge into King Bay with a capacity of approximately 208 megalitres per day;
- Accept the discharge of treated industrial and domestic wastewater into the brine discharge stream from facilities which have environmental approval; and
- Construct and operate desalination plants on the Syntroleum Sweetwater Pty Ltd lease, the Burrup Fertilisers Pty Ltd lease and potentially other sites.

The pipeline route and location of the seawater inlet and brine outlet are shown in Figure 2 (attached).

The key characteristics of the modified project are summarised in Table 1 below.



Figure 1. Project Location - Regional Map (Source: Figure 1.2 HLA - Envirosciences, 1999a).

Table 1: Summary of key proposal characteristics (Assessment No. 1419)

,

.

ĩ

Element	Description
Project Purpose	To provide high purity water and seawater to industries on the Burrup Peninsula.
Project Life	25 + years
Major Project Components	 Seawater supply pipelines (to 1.4 metres diameter) 2 ML Seawater surge tank at the Three Sisters site Brine discharge pipelines (to 1.1 metres diameter) 2 ML brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay 33 kV power line Thermal desalination plant, including cooling tower, seawater storage tank and desalinated water storage tank at the Syntroleum site Thermal desalination plant, including seawater storage tank and desalinated water storage tank at the Burrup Fertilisers site Potentially, future desalination plants and associated infrastructure at other developers' sites
Plant Location	 Seawater intake pump system – within the Mermaid Marine harbour development Seawater pipelines – within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property Brine pipelines – adjacent to seawater pipelines 33 kV power line – adjacent to seawater and brine pipelines Syntroleum Desalination plant – within the Syntroleum lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area Burrup Fertilisers Desalination plant – within the Burrup Fertilisers lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area Brine outfall and diffuser – extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum.
Plant Operation	Continuous 24 hours per day, 365 days per year
Storage Capacities	 Seawater service tank (Three Sisters site) - 2ML Brine break tank (adjacent Mermaid Marine) - 2 ML Syntroleum desalination plant seawater storage tank - 2 ML Syntroleum desalination plant distilled water storage tank - 4 ML Burrup Fertilisers desalination plant seawater storage tank - 2 ML Future tanks at other developers' sites
Inputs:	
- Seawater - Power Supply	 Ultimately, 280 ML/d intake (including process cooling water) Pump station ultimately, approximately 3 MW, supplied from process plants Syntroleum Desalination Plant approximately 1.5 MW supplied from Syntroleum Burrup Fertilisers Desalination Plant approximately 3 MW supplied from Burrup Fertilisers Potentially, other desalination plants at other developers' sites

Element	Description
Discharges:	and a second
- Brine	Ultimately, approximately 208 ML/d at up to 55,000 mg/L Total Dissolved Solids
- Process wastewater	Burrup Fertilisers – 0.8 ML/d
	Potentially, similar quantities from other developers' sites.
- Domestic wastewater	Burrup Fertilisers – 0.04 ML/d
	Potentially, similar quantities from other developers' sites.
- Antiscalant	Syntroleum desalination plant - 100 kg/d
	Burrup Fertilisers desalination plant – 100 kg/d
Disside	Potentially, similar quantities from other developers' sites.
- Sulphamic Acid	Nil; decomposed by addition of sodium metablsulphite.
- Suphanic Acid	Nil. Discharge loss than 5° C (loss than 2° C for 800 (of the time) shows a 1 in t
· remperature	temperature
- Heat Load	Ultimately approximately 208 MI /d nominally within 280 of the embiant connector
	temperature
	temperature.
Noise:	
- Construction:	Less than 30 dB(A) at the nearest permanent residence (Dampier)
- Operation:	• Seawater intake system: Less than 70 dB(A) at 1 metre from pump well.
	• Syntroleum Desalination plant: Less than 30 dB(A) at the nearest permanent
	residence (Dampier).
	• Burrup Fertilisers Desalination plant: Less than 30 dB(A) at the nearest permanent residence (Dampier).
	• Future desalination plants at other developers' sites are likely to be very similar in
	nature and sound level at Dampier will be less than 30 dB(A).
Construction Period	Approximately 20 months
Construction Workforce	Peak 50
Operational Workforce	Estimated 6
Project Benefit	Provides a reliable, cost effective and environmentally sensitive water supply for industry
	development on the Burrup Peninsula.

Abbreviations

• •

- kg/d = kilograms per day
- kV = kilovolts
- mg/L = milligrams per litre
- ML = Megalitres
- ML/d = Megalitres per day
- MW = Megawatts

Figures (attached)

Figure 1 - Project location. Figure 2 - Pipeline route.





Schedule 2

Proponent's Revised Consolidated Environmental Management Commitments

19 March 2002

DESALINATED WATER AND SEAWATER SUPPLIES PROJECT BURRUP PENINSULA, SHIRE OF ROEBOURNE (Assessment No. 1419)

WATER CORPORATION

DESALINATED WATER & SEAWATER SUPPLIES PROJECT

PROPONENT'S ENVIRONMENTAL MANAGEMENT COMMITMENTS (Assessment No. 1419)

Advice	CALM DOA (for noxious weeds)	CALM	CALM	CALM	CALM
Timing	Pre-construction Construction	Pre-construction	Pre-construction Construction	Construction Annually for 5 years, then biannually for a further 10 years.	Construction
Objective	To prevent the introduction of new weeds. To control existing weeds.	To identify and protect sensitive flora.	To protect significant, rare and endangered flora. To protect significant vegetation assemblages.	To measure and report on rehabilitation success.	To protect significant fauna habitats and their access. To protect rare and endangered fauna.
Action	 Prepare a weed management plan. Implement the plan. 	Conduct a detailed vegetation survey along the pipeline route (including the Three Sisters surge tank), in the appropriate season.	 Prepare a flora and vegetation plan: to quantify area of vegetation to be disturbed and the values that would be lost; and to set measures to protect significant flora and vegetation. Implement the plan. 	 Prepare a rehabilitation management plan for the construction and laydown areas: to rehabilitate disturbed areas; and to monitor vegetation assemblages. Implement the plan. 	Construct suitable fauna passages beneath the above ground sections of the pipelines.
Topic	Terrestrial Flora	Terrestrial Flora	Terrestrial Flora	Terrestrial Flora	Terrestrial Fauna
No		2	ę	4	S

Advice	۲. ۲	EPA	ά
Timing	DEP/ DED/ CALJ CALJ n-going	n-going OMP DEP/	:e-commissioning DEP/ CALJ n-going
Objective	To minimise impacts on the marine environment. O	To minimise impacts on the marine and general O environment.	To minimise impacts on the value of the Pinarine environment.
Action	 Brine and wastewater effluent will only be accepted from industrial process plants: 1) for which licence and/or Ministerial Conditions (Part IV and V of the Environmental Protection Act) have been issued; 2) that have provided appropriate toxicity and environmental fate data for all components of the effluent to the satisfaction of the DEP/EPA; and 3) which only utilise DEP/EPA approved process additives (eg antiscalants, corrosion inhibitors etc). 	Continue to review options for recycling and reuse of brine and/or wastewater effluent (including the Dampier Salt option). The infrastructure will be designed and constructed such that future reuse / recycling opportunities can be accommodated.	 Prepare an Environmental Management Plan in consultation with the system users and the DEP/EPA. The plan will encompass: requirements for monitoring (of effluent, seawater, sediments and biota); requirements for independent data verification, evaluation and reporting; and mechanisms for joint management of the system by the proponent and system users. Implement the plan.
Topic	Marine Environmental Values	Marine Environmental Values	Marine Environmental Values
No	v	7	×

۲.

Advice	CALM WA Museum	DPA DEP/EPA CALM		DEP/EPA
Timing	Pre-construction	Pre-construction	Construction	Pre-commissioning
Objective	To protect benthic flora and fauna.	To protect and minimise the extent of disturbance of benthic flora and fauna.		To protect sessile flora and fauna.
Action	Conduct a survey of the seabed to identify the marine habitats and benthic flora and fauna around the revised diffuser location.	 Prepare a dredging and spoil disposal plan that incorporates the best practically available dredging construction methods and techniques: to minimise generation of turbidity; to minimise redistribution of contaminants; to minimise visual impacts; and to ensure seawater oxygen levels are not depleted. 	2) Implement the plan.	 In accordance with the Environmental Management Plan, monitor emissions at the outfall break tank: Continuous on-line monitoring will include at least flow rate, temperature, pH, conductivity, oxidation-reduction potential, ammonia and turbidity; Other contaminants that can be reasonably and reliably monitored by on-line instrumentation will also be monitored; and Appropriate additional monitoring will be conducted to quantify discharge levels of dissolved oxygen, nutrients, process additives and other environmental contaminants (such as heavy metals) in consultation with the DFP/FPA
Topic	Marine Flora and Fauna	Marine Flora and Fauna		Marine Flora and Fauna
No No		0		

х 1

Advice	DEP/EPA	DEP/EPA CALM	DEP/EPA CALM
Timing	Operation	Pre-commissioning On-going	On-going. (December to April, following commissioning of each additional plant).
Objective	To protect sessile flora and fauna.	To establish baseline data for the concentrations of heavy metals, process chemicals and other relevant contaminants. To identify long term effects on biota. To protect sessile flora and fauna.	To ensure no adverse impacts on coral communities particularly the nearest corals to the discharge diffuser. To verify the dispersion modelling results. To interpret the results of any coral monitoring program.
Action	 Brine emissions from Water Corporation desalination facilities will be controlled to the following: Effluent discharge temperature to be less than 2° C* above the inlet seawater temperature for 80% of the time and not exceeding a maximum limit of 5° C above, unless otherwise agreed with the DEP; The concentration of oxidising biocide in the effluent discharge to be less than 0.1 mg/L; and The concentration of antiscalant in the effluent discharge to be less than 2 mg/L, unless otherwise agreed with the DEP. The proponent, in conjunction with system users, will manage the total effluent discharge to meet the above criteria. 	In accordance with the Environmental Management Plan, monitor contaminants in the seawater, sediment and biota, that includes the monitoring of caged "sentinel" organisms around the brine outfall.	 In accordance with the Environmental Management Plan, monitor seawater temperature at: the intake and outfall; appropriate locations between the outfall and the nearest coral community; and appropriate reference locations.
Topic	Marine Flora and Fauna	Marine Flora and Fauna	Marine Flora and Fauna
No	12	13	14

•

•

.

Advice					
	DEP/EP		DIA		MPR
Timing	Pre-construction	CONSTRUCTION	Pre-construction		Design compliance - pre-construction. Operation compliance - prior to operation of the plant.
Objective	To provide a visual screen of the pipelines from Burrup Road. To prevent unacceptable visual impacts.		To minimise disturbance to sites of cultural significance.		To ensure safe operation in proximity to a major hazard facility.
Action	 Prepare a Visual Amenity Plan that includes: Mounding of excess soil and rock to form a visual screen where practicable; Painting pipelines in colours that blend with the environment; and No construction of a pipeline maintenance access road, unless otherwise agreed with the DEP. 	z) implement the plan.	 Prepare an Aboriginal Heritage Plan to: identify all sites of cultural significance; provide guidelines for avoidance of and behaviour around sites; and provide guidelines if artifacts are found. 	2) Implement the plan.	Desalination plant design and operation to be compatible with the Safety Report and Emergency Plan of the adjacent process plant (as required by the Worksafe National Standard for the Control of Major Hazard Facilities).
Topic	Visual Amenity		Aboriginal Heritage		Risk
No	15		16		17

-

٠

.

*The difference between the 24 hour average seawater intake temperature and the brine discharge temperature.

CALM = Department of Conservation and Land Management DEP = Department of Environmental Protection DIA = Department of Indigenous Affairs DOA = Department of Agriculture DPA = Dampier Port Authority EPA = Environmental Protection Authority MPR = Department of Mineral and Petroleum Resources OMP = Office of Major Projects

Attachment 1 to Statement 594

Change to Proposal

Proposal: Desalinated Water and Seawater Supplies Project Burrup Peninsula, Shire of Roebourne

Proponent: Water Corporation

Change: Construct and operate alternative seawater intake pump station

Key Characteristics Table:

Element	Description of proposal	Description of approved change to proposal	
Project Purpose	To provide high purity water and seawater to industries on the Burrup Peninsula	To provide high purity water and seawater to industries on the Burrup Peninsula	
Project Life	25 + years	25 + years	
Major Project Components	• Seawater supply pipelines (to 1.4 metres diameter)	• Seawater supply pipelines (to 1.4 metres diameter)	
	• 2 ML Seawater surge tank at the Three Sisters site	• 2 ML Seawater surge tank at the Three Sisters site	
	 Brine discharge pipelines (to 1.1 metres diameter) 	 Brine discharge pipelines (to 1.1 metres diameter) 	
	• 2 ML brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay	• 2 ML brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay	
	• 33 kV powerline	• 33 kV powerline	
	• Thermal desalination plant, including cooling tower, seawater storage tank and desalinated water storage tank at the Syntroleurn site	• Thermal desalination plant, including cooling tower, seawater storage tank and desalinated water storage tank at the Syntroleurn site	
	• Thermal desalination plant, including seawater storage tank and desalinated water storage tank at the Burrup Fertilisers site	• Thermal desalination plant, including seawater storage tank and desalinated water storage tank at the Burrup Fertilisers site	
	• Potentially, future desalination plants and associated infrastructure at other developers' sites	• Potentially, future desalination plants and associated infrastructure at other developers' sites	
Plant location	 Seawater intake pump station – within the Mermaid Marine harbour development 	• Seawater intake pump stations – within the Mermaid Marine harbour development	

Element	Description of proposal	Description of approved change to proposal
Plant location continued	• Seawater pipelines - within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property	 Seawater pipelines - within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property
	 Brine pipelines - adjacent to seawater pipelines 	 Brine pipelines - adjacent to seawater pipelines
	 33 kV power line - adjacent to seawater and brine pipelines 	 33 kV power line - adjacent to seawater and brine pipelines
	• Syntroleum Desalination plant - within the Syntroleum lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area	• Syntroleum Desalination plant - within the Syntroleum lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area
	• Burrup Fertilisers Desalination plant - within the Burrup Fertilsers lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area	 Burrup Fertilisers Desalination plant - within the Burrup Fertilsers lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area
	• Brine outfall and diffuser - extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum	• Brine outfall and diffuser - extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum
Plant Operation	Continuous – 24 hours per day, 365 days per year	Continuous – 24 hours per day, 365 days per year
Storage Capacities	 Seawater service tank (Three Sisters site) - 2ML 	 Seawater service tank (Three Sisters site) - 2ML
	 Brine break tank (adjacent Mermaid Marine) - 2 ML 	 Brine break tank (adjacent Mermaid Marine) - 2 ML
	 Syntroleum desalination plant seawater storage tank - 2 ML 	 Syntroleum desalination plant seawater storage tank - 2 ML
	 Syntroleum desalination plant distilled water storage tank - 4 ML 	 Syntroleum desalination plant distilled water storage tank - 4 ML
	 Burrup Fertilisers desalination plant seawater storage tank - 2 ML 	 Burrup Fertilisers desalination plant seawater storage tank - 2 ML
	 Future tanks at other developers' sites 	 Future tanks at other developers' sites

Elemen	t	Description of proposal	Description of approved change to proposal
Inputs:			
Seawate	er	Ultimately, 280 ML/d intake (including process cooling water)	Ultimately, 280 ML/d intake (including process cooling water)
Power Supply		 Pump station - ultimately, approximately 3 MW, supplied from process plants 	 Pump stations - ultimately, approximately 3 MW, supplied from process plants
		 Syntroleum Desalination Plant - approximately t.5 MW supplied from Syntroleum 	 Syntroleum Desalination Plant - approximately t.5 MW supplied from Syntroleum
		 Burrup Fertilisers Desalination Plant - approximately 3 MW supplied from Burrup Fertilisers 	 Burrup Fertilisers Desalination Plant - approximately 3 MW supplied from Burrup Fertiliser
		 Potentially, other desalination plants at other developers' sites 	 Potentially, other desalination plants at other developers' sites
Dischar	ges:		
0	Brine	Ultimately, approximately 208 MUd at up to 55,000 mglL Total Dissolved Solids	Ultimately, approximately 208 MUd at up to 55,000 mglL Total Dissolved Solids
• Process Wastewater		Burrup Fertilisers - 0.8 MUd	Burrup Fertilisers - 0.8 MUd
		Potentially similar quantities from other developers' sites.	Potentially similar quantities from other developers' sites.
•	Domestic	Burrup Fertilisers - 0,04 MUd	Burrup Fertilisers - 0,04 MUd
	Wastewater	Potentially, similar quantities from other developers' sites.	Potentially, similar quantities from other developers' sites.
٠	Antiscalant	Syntroleum desalination plant - 100 kgld	Syntroleum desalination plant - 100 kgld
		Burrup Fertilisers desalination plant - 100 kg/d	Burrup Fertilisers desalination plant - 100 kg/d
		Potentially similar quantities from other developers' sites.	Potentially similar quantities from other developers' sites.
٠	Biocide	Nil; decomposed by addition of sodium metabisulphite.	Nil; decomposed by addition of sodium metabisulphite.
0	Sulphamic Acid	Nil.	Nil.
0	Temperature	Discharge less than 5°C (less than 2°C for 80% of the time) above ambient seawater temperature.	Discharge less than 5°C (less than 2°C for 80% of the time) above ambient seawater temperature.
0	Heat Load	Ultimately, approximately 208 ML/d nominally within 2°C of the ambient seawater temperature.	Ultimately, approximately 208 ML/d nominally within 2°C of the ambient seawater temperature.

Element	Description of proposal	Description of approved change to proposal
Noise:		
Construction	Less than 30 dB(A) at the nearest permanent residence (Dampier)	Less than 30 dB(A) at the nearest permanent residence (Dampier)
• Operation	• Seawater intake system: Less than 70 dB(A) at 1 metre from pump well.	• Seawater intake system: Less than 70 dB(A) at 1 metre from pump well.
	• Syntroleum Desalination plant: Less than 30 dB(A) at the nearest pcnnanent residence (Dampier).	• Syntroleum Desalination plant: Less than 30 dB(A) at the nearest pcnnanent residence (Dampier).
	• Burrup Fertilisers Desalination plant: Less than 30 dB(A) at the nearest permanent residence (Dampier).	• Burrup Fertilisers Desalination plant: Less than 30 dB(A) at the nearest permanent residence (Dampier).
	• Future desalination plants at other developers' sites are likely to be very similar in nature and sound level at Dampier will be less than 30 dB(A).	• Future desalination plants at other developers' sites are likely to be very similar in nature and sound level at Dampier will be less than 30 dB(A).
Construction Period	Approximately 20 months	Approximately 12 months
Construction Workforce	Peak 50	Workforce number to be removed as not environmentally relevant
Operational Workforce	Estimated 6	Workforce number to be removed as not environmentally relevant
Project Benefit	Provides a reliable, cost effective and environmentally sensitive water supply for industry development on the Burrup Peninsula.	Provides a reliable, cost effective and environmentally sensitive water supply for industry development on the Burrup Peninsula.

List of Figures: Figure 1: Location of Proposed Alternate Pump Station

Dr Paul Vogel CHAIRMAN Environmental Protection Authority under delegated authority Approval date: 5.3.10



Water Corporation Seawater Intake Pipeline and Pump Stations

FIG.

Attachment 2 to Statement 594

Change to Proposal

Proposal: Desalinated Water and Seawater Supplies Project Burrup Peninsula, Shire of Roebourne

Proponent: Water Corporation

Change: Construct and operate a six gigalitre per annum reverse osmosis desalination plant to supply industry and domestic customers.

Element	Description of proposal	Description of approved change to
		proposar
Project Purpose	To provide high purity water and seawater to industries on the Burrup Peninsula	To provide high purity water and seawater to industry and domestic customers
Project Life	25 + years	25 + years
Major Project Components	• Seawater supply pipelines (to 1.4 metres diameter)	Seawater supply pipelines
	• 2 ML Seawater surge tank at the Three Sisters site	• Seawater surge tank at the Three Sisters site
	• Brine discharge pipelines (to 1.1 metres diameter)	• Brine discharge pipelines
	• 2 ML brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay	• Brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay
	 33 kV powerline Thermal desalination plant, including cooling tower, seawater storage tank and desalinated water storage tank at the Syntroleum site 	 33 kV powerline Desalination plants (utilising thermal or reverse osmosis technology) including cooling towers, seawater storage tanks and desalinated water storage tanks (as appropriate)
		• Removed (see dot point above)
	 Thermal desalination plant, including seawater storage tank and desalinated water storage tank at the Burrup Fertilisers site Potentially, future desalination plants and associated infrastructure at other developers' sites 	 Potentially, future desalination plants and associated infrastructure at other developers' sites
Plant location	Seawater intake pump stations – within the Mermaid Marine harbour development	• Seawater intake pump stations – within the Mermaid Marine harbour development

Key Characteristics Table:

Element	Description of proposal	Description of approved change to proposal
Plant location continued	• Seawater pipelines - within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property	• Seawater pipelines - within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property
	• Brine pipelines - adjacent to seawater pipelines	• Brine pipelines - adjacent to seawater pipelines
	• 33 kV power line - adjacent to seawater and brine pipelines	• 33 kV power line - adjacent to seawater and brine pipelines
	• Syntroleum Desalination plant - within the Syntroleum lease area, adjacent to the process plant site, King Bay-Hearson Cove Industrial Area	• Water Corporation Desalination plants located on land leased to Water Corporation and Burrup Fertilisers, King Bay-Hearson Cove Industrial Area
	• Burrup Fertilisers Desalination plant - within the Burrup Fertilisers lease area, adjacent to the process plant site, King Bay- Hearson Cove Industrial Area	• Removed (see dot point above)
	• Brine outfall and diffuser - extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum	• Brine outfall and diffuser - extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum
Plant Operation	Continuous – 24 hours per day, 365 days per year	Continuous – 24 hours per day, 365 days per year
Storage Capacities	• Seawater service tank (Three Sisters site) - 2ML	Seawater service tanks
	• Brine break tank (adjacent Mermaid Marine) - 2 ML	• Brine break tanks
	• Syntroleum desalination plant seawater storage tank - 2 ML	• Syntroleum desalination plant seawater storage tanks
	• Syntroleum desalination plant distilled water storage tank - 4 ML	• Distilled water and potable storage tanks
	• Burrup Fertilisers desalination plant seawater storage tank - 2 ML	• Removed (see dot point above)
	• Future tanks at other developers' sites	• Future tanks at other developers' sites

Element	Description of proposal	Description of approved change to proposal
Inputs:		
Seawater	Ultimately, 280 ML/d intake (including process cooling water)	Ultimately, 280 ML/d intake (including process cooling water)
Power Supply	• Pump station - ultimately, approximately 3 MW, supplied from process plants	• Pump stations - ultimately, approximately 3 MW, supplied from process plants
	• Syntroleum Desalination Plant - approximately t.5 MW supplied from Syntroleum	• Water Corporation Desalination Plant located on Water Corporation leased land - approximately 5.3 MW supplied from Horizon Power
	• Burrup Fertilisers Desalination Plant - approximately 3 MW supplied from Burrup Fertilisers	• Water Corporation Desalination Plant located on land leased to Burrup Fertilisers - approximately 3 MW supplied from Burrup Fertiliser
	• Potentially, other desalination plants at other developers' sites	• Potentially, other desalination plants at other developers' sites
Discharges:		
• Brine	Ultimately, approximately 208 ML/d at up to 55,000 mg/L Total Dissolved Solids	Ultimately, approximately 208 ML/d at up to 55,000 mg/L Total Dissolved Solids
• Process Wastewater	Burrup Fertilisers - 0.8 ML/d	Approximately 0.8 ML/d of process wastewater from industries on the Burrup
	Potentially similar quantities from other developers' sites.	Removed (see above)
• Domestic Wastewater	Burrup Fertilisers – 0.04 ML/d	Approximately 0.04 ML/d of domestic wastewater from industries on the Burrup
	Potentially, similar quantities from other developers' sites.	Removed (see above)
Antiscalant	Syntroleum desalination plant – 100 kg/d	Approximately 100 kg/d per desalination plant
	Burrup Fertilisers desalination plant - 100 kg/d	Removed (see above)
	Potentially similar quantities from other developers' sites.	Removed (see above)
• Biocide	Nil; decomposed by addition of sodium metabisulphite.	Nil; decomposed by addition of sodium metabisulphite.
Sulphamic Acid	Nil.	Nil.
• Temperature	Discharge less than 5°C (less than 2°C for 80% of the time) above ambient seawater temperature.	Discharge less than 5°C (less than 2°C for 80% of the time) above ambient seawater temperature.
• Heat Load	Ultimately, approximately 208 ML/d nominally within 2°C of the ambient seawater temperature.	Ultimately, approximately 208 ML/d nominally within 2°C of the ambient seawater temperature.

Element	Description of proposal	Description of approved change to proposal
Noise:	Less than $30 d \mathbf{R}(\Lambda)$ at the nearest	Less than 30 dB(A) at the nearest
• Construction	permanent residence (Dampier)	permanent residence (Dampier)
Operation	• Seawater intake system: Less than 70 dB(A) at 1 metre from pump well.	• Seawater intake system: Less than 70 dB(A) at 1 metre from pump well.
	• Syntroleum Desalination plant: Less than 30 dB(A) at the nearest permanent residence (Dampier).	• Water Corporation Desalination plants: Less than 30 dB(A) at the nearest permanent residence (Dampier).
	• Burrup Fertilisers Desalination plant: Less than 30 dB(A) at the nearest permanent residence (Dampier).	Remove (see dot point above)
	• Future desalination plants at other developers' sites are likely to be very similar in nature and sound level at Dampier will be less than 30 dB(A).	 Future desalination plants at other developers' sites are likely to be very similar in nature and sound level at Dampier will be less than 30 dB(A).
Construction Period	Approximately 12 months	Approximately 18 months
Construction Workforce	Peak 50	Removed
Operational Workforce	Estimated 6	Removed
Project Benefit	Provides a reliable, cost effective and environmentally sensitive water supply for industry development on the Burrup Peninsula.	Provides a reliable, cost effective and environmentally sensitive water supply for industrial and domestic use.

Dr Paul Vogel CHAIRMAN Environmental Protection Authority under delegated authority

Approval date: 6 August 2010

Attachment 3 to Ministerial Statement 594

Amendment to proposal approved under section 45C of the Environmental Protection Act 1986

This Attachment replaces Attachment 2 of Ministerial Statement 594

Proposal: Desalinated Water and Seawater Supplies Project Burrup Peninsula, Shire of Roebourne

Proponent: Water Corporation

Changes:

- Define the development envelope using spatial coordinates (Replace Figure 2 of MS 594 with defined development envelope in schedule 3 (new))
- Increase development envelope by 1.44 ha, from 17.96 to 19.40 ha
- Increase in clearing by 0.26 ha, from 6.36 to 6.62 ha
- Delete in Table 2 the element Operational Noise, and description: Seawater intake system: "less than 70 dB(A) at 1 metre from pump well".

Table 1: Summary of the proposal

Proposal title	Desalinated Water and Seawater Supplies Project Burrup Peninsula, Shire of Roebourne
Short description	The proposal is to construct and operate a seawater supply and desalination system to service the requirements of new industrial developments on the Burrup Peninsula, approximately 1,300 kilometres north of Perth.

Table 2: Location and authorised extent of physical and operational elements

Element	Location	Previously authorised	Authorised extent
Project Purpose		To provide high purity water and seawater to industry and domestic customers	To provide high purity water and seawater to industry and domestic customers
Development envelope and disturbance footprint	Figure 1	NA (not previously defined)	Total disturbance footprint of up to 6.62 ha within the 19.40 ha development envelope
Project Life		25 + years	25 + years
Major Project Components		 Seawater supply pipelines Seawater surge tank at the Three Sisters site 	 Seawater supply pipelines Seawater surge tank at the Three Sisters site Brine discharge pipelines

Element	Location	Previously authorised extent	Authorised extent
		 Brine discharge pipelines Brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay 33 kV powerline Desalination plants (utilising thermal or reverse osmosis technology) including cooling towers, seawater storage tanks and desalinated water storage tanks (as appropriate) Potentially, future desalination plants and associated infrastructure at other developers' sites 	 Brine break tank adjacent to Mermaid Marine, outfall pipe and diffuser array into King Bay 33 kV powerline Desalination plants (utilising thermal or reverse osmosis technology) including cooling towers, seawater storage tanks and desalinated water storage tanks (as appropriate) Potentially, future desalination plants and associated infrastructure at other developers' sites
Plant location		 Seawater intake pump stations – within the Mermaid Marine harbour development Seawater pipelines - within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property Brine pipelines - adjacent to seawater pipelines 33 kV power line - adjacent to seawater and brine pipelines Water Corporation Desalination plants located on land leased to Water Corporation and Burrup 	 Seawater intake pump stations – within the Mermaid Marine harbour development Seawater pipelines - within easements on the northern side of the mudflat north of Hearson Cove Road, eastern side of Burrup Road, northern side of King Bay Road and western side of the Mermaid Marine access road and property Brine pipelines - adjacent to seawater pipelines 33 kV power line - adjacent to seawater and brine pipelines Water Corporation Desalination plants located on land leased to Water Corporation and Burrup Fertilisers, King Bay- Hearson Cove Industrial Area Brine outfall and diffuser -

Element	Location	Previously authorised extent	Authorised extent
		Fertilisers, King Bay- Hearson Cove Industrial Area • Brine outfall and diffuser - extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum	extending approximately 800 metres from the end of the Mermaid Marine groyne to a point approximately midway between the Mermaid Marine and Woodside shipping channels at 4.0 metres Chart Datum
Plant Operation		Continuous – 24 hours per day, 365 days per year	Continuous – 24 hours per day, 365 days per year
Storage Capacities		 Seawater service tanks Brine break tanks Syntroleum desalination plant seawater storage tanks Distilled water and potable storage tanks Future tanks at other developers' sites 	 Seawater service tanks Brine break tanks Syntroleum desalination plant seawater storage tanks Distilled water and potable storage tanks Future tanks at other developers' sites
Inputs: Seawater		Ultimately, 280 ML/d intake (including process cooling water)	Ultimately, 280 ML/d intake (including process cooling water)
Power Supply		 Pump stations - ultimately, approximately 3 MW, supplied from process plants Water Corporation Desalination Plant located on Water Corporation leased land - approximately 5.3 MW supplied from Horizon Power Water Corporation Desalination Plant located on land leased to 	 Pump stations - ultimately, approximately 3 MW, supplied from process plants Water Corporation Desalination Plant located on Water Corporation leased land -approximately 5.3 MW supplied from Horizon Power Water Corporation Desalination Plant located on land leased to Burrup Fertilisers - approximately 3 MW

Element	Location	Previously authorised extent	Authorised extent
		Burrup Fertilisers - approximately 3 MW supplied from Burrup Fertiliser • Potentially, other desalination plants at other developers' sites	supplied from Burrup Fertiliser • Potentially, other desalination plants at other developers' sites
Discharges: • Brine • Process Wastewater • Domestic		 Ultimately, approximately 208 ML/d at up to 55,000 mg/L Total Dissolved Solids Approximately 0.8 ML/d of process wastewater from industries on the 	 Ultimately, approximately 208 ML/d at up to 55,000 mg/L Total Dissolved Solids Approximately 0.8 ML/d of process wastewater from industries on the Burrup Approximately 0.04 ML/d
Wastewater Antiscalant 		Burrup • Approximately 0.04 ML/d of domestic wastewater from industries on the	of domestic wastewater from industries on the Burrup • Approximately 100 kg/d
Biocide Sulphamic		Burrup • Approximately 100 kg/d per desalination plant • Nil; decomposed by addition of sodium	 per desalination plant Nil; decomposed by addition of sodium metabisulphite. Nil
• Temperature		metabisulphite. Nil Discharge less than 5°C 	 Discharge less than 5°C (less than 2°C for 80% of the time) above ambient
• Heat Load		 (less than 2°C for 80% of the time) above ambient seawater temperature Ultimately, approximately 208 ML/d nominally within 2°C of the ambient seawater temperature 	seawater temperature • Ultimately, approximately 208 ML/d nominally within 2°C of the ambient seawater temperature
Noise: • Construction		•Less than 30 dB(A) at the nearest permanent residence (Dampier)	•Less than 30 dB(A) at the nearest permanent residence (Dampier)
Operation		 Seawater intake system: Less than 70 dB(A) at 1 metre from pump well. Water Corporation Desalination plants: Less than 30 dB(A) at the 	 Seawater intake system: Less than 70 dB(A) at 1 metre from pump well. Water Corporation Desalination plants: Less than 30 dB(A) at the nearest

Element	Location	Previously authorised extent	Authorised extent
		nearest permanent residence (Dampier). • Future desalination plants at other developers' sites are likely to be very similar in nature and sound level at Dampier will be less than 30 dB(A).	 permanent residence (Dampier). Future desalination plants at other developers' sites are likely to be very similar in nature and sound level at Dampier will be less than 30 dB(A).
Construction Period		Approximately 18 months	Approximately 18 months
Project Benefit		Provides a reliable, cost effective and environmentally sensitive water supply for industrial and domestic use.	Provides a reliable, cost effective and environmentally sensitive water supply for industrial and domestic use.

Note: Text in **bold** in Table 2 indicates a change to the proposal.

Table 3: Abbreviations

Abbreviation	Term
CEO	Chief Executive Officer
GL	gigalitre
ha	hectare
km	kilometre

Figures (attached)

Figure 1: Desalinated Water and Seawater Supplies Burrup Peninsula Development Envelope and disturbance footprint. (This replaces Figure 2 of MS 594)



Figure 1: Desalinated Water and Seawater Supplies Burrup Peninsula Development Envelope and disturbance footprint.

Schedule 3 (NEW)

All co-ordinates are in metres, listed in Map Grid of Australia Zone 50 (MGA Zone 50), datum of Geocentric Datum of Australia 2020 (GDA2020).

Spatial data depicting the figures are held by the Department of Water and Environmental regulation Environment Online (APP-0025158)

Signed 19 April 2024

Prof Matthew Tonts CHAIR Environmental Protection Authority under delegated authority