Published on 12 November 2007 Statement No. 754

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

ALKIMOS WASTEWATER TREATMENT PLANT – SITE A
CITY OF WANNEROO

Proposal: The construction and operation of a wastewater treatment plant, and associated ocean outfall, on the Alkimos-Eglinton Dunal System with an ultimate processing capacity of 160 megalitres per day, as documented in schedule 1 of this statement..

Proponent: Water Corporation

Proponent Address: 629 Newcastle Street, LEEDERVILLE WA 60072

Assessment Number: 1582

Report of the Environmental Protection Authority: Bulletin 1238

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 (See note 1 at foot of this statement):

1 Proposal Implementation

1-1 The proponent shall implement the proposal as documented and described in schedules 1, 2 and 3 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 the 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 Department of Environment and Conservation (CEO) of any change of the name and address of the proponent for the serving of a notice 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 within 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 submit to the CEO environmental compliance reports annually reporting on the previous twelve-month period, unless required by the CEO to report more frequently.

4-2 The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO.

4-3 The environmental compliance reports shall:

1. be endorsed by signature of the proponent's Chief Executive Officer or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's Chief Executive Officer;
2. state whether the proponent has complied with each condition and procedure contained in this statement;
3. provide verifiable evidence of compliance with each condition and procedure contained in this statement;
4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement;
5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement;
6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance;
7. provide an assessment of the effectiveness of all corrective and preventative actions taken; and
8. describe the state of implementation of the proposal.

4-4 The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO.

5 Performance Review

5-1 The proponent shall submit a Performance Review report every five years after the start of construction to the Environmental Protection Authority, which addresses:

1. the major environmental issues associated with implementing the project; the environmental objectives for those issues; the methodologies used to achieve

these; and the key indicators of environmental performance measured against those objectives;

2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
3. investigations undertaken in relation to developing alternative options to ocean disposal of treated wastewater, including wastewater re-use;
4. significant improvements gained in environmental management, including the use of external peer reviews;
5. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
6. the proposed environmental objectives over the next five years, including improvements in technology and management processes.

6 Terrestrial Construction Management Plan

6.1 Up to three launch/recovery chambers may be used for tunneling of the overland pipeline. These chambers are to be located within the footprint of the WWTP and the footprint of the launch site. Any intermediate chamber is to be located outside a Bush Forever site or Conservation Area as identified by the Water Corporation, to be rehabilitated upon completion of the tunneling.

6-2 Prior to commencement of clearing for the installation of the pipeline, the proponent shall prepare and submit, a Terrestrial Construction Management Plan (the Plan) that meets the objective of Condition 6-3 and the requirements of Condition 6-4 as determined by the Minister for the Environment. The plan shall also include accurate GIS map showing the exact coordinates of the disturbance footprint, including a table of coordinates (eastings and northings), for the site as assessed by the EPA (EPA Bulletin 1238 Figure 2)

In preparing the Plan the Proponent shall consult with Department of Environment and Conservation.

6-3 The objective of the Plan is to protect native vegetation and landforms on the site outside the area of disturbance as defined in the Plan.

6-4 The Plan shall address the following:

1. modification and configuration (dimension, shape and gradient) of the launch site as far as practicable to minimise the impact of the on terrestrial vegetation and formations launch site dimensions;
2. access roads;
3. sheds, amenities, and other facilities to be installed;
4. management of activities in areas outside the area of disturbance as defined in Figure 3 in Schedule 2 and Figure 4 in Schedule 3;
5. depth of burial of pipe sufficient to withstand a one-in-one hundred year storm;
6. impacts on the beach profile;

7. Bush Forever site, including *Frankenia pauciflora*;

8. Threatened Ecological Communities; and

9. rehabilitation of the launch site/s.

6-5 The proponent shall implement the Plan.

6-6 The proponent shall make the Plan available in a manner approved by the CEO.

6-7 Prior to ground-disturbing activities and in consultation with the Department of Environment and Conservation, the proponent shall put in place measures (which may include fencing and/or signposting) to delineate and protect the locations of plants, vegetation, or other areas of particular conservation significance.

In carrying out rehabilitation activities, the proponent shall only use native plant species of local provenance, defined as plant material or seeds collected within ten kilometres of the project site, except with permission in writing from the CEO.

7. Stability of dunes

7-1 The proponent shall construct the WWTP and associated works to ensure the ongoing stability of the dunal system outside the area of disturbance as defined in Condition 6-2 and Figure 3 in Schedule 2.

8. Ocean Outlet Pipeline Construction Management Plan (Marine)

8-1 Prior to commencement of installation of the pipeline, the proponent shall prepare and submit an Ocean Outlet Pipeline Construction Management Plan (the Plan) that meets the objectives set out in Condition 8.2 that meets the requirements of 8.3 as determined by the Minister for the Environment.

In preparing the Plan the Proponent shall consult with the Environmental Protection Authority.

8-2 The objectives of the Plan is to

(a) ensure the maintenance of the ecological integrity of the marine waters surrounding the Alkimos site; and

(b) ensure the final area of disturbance from Ocean Outlet Pipeline (and diffuser) taking into account rehabilitation works and the ongoing impacts from the presence of the pipeline will be within the area defined in Figure 5 and Table 3 in Schedule 3.

8-3 The Plan shall address the following:

1 route design;

2. define the spatial definition of the extent of the disturbance footprint

(a) direct loss of habitat due to construction,

(b) indirect loss of habitat due to construction (sediment plume impacts – loss of light and burial) ;

3. prediction and spatially definition of the long-term stable' state of the marine environment following construction and taking into account indirect effects of construction and on-going impacts from the presence of infrastructure – i.e. predicted impacts (the extent and severity) on the marine environment of indirect impacts (construction and ongoing impact (see Note 9).

4 amount and type of material to be excavated;

5 rehabilitation of excavated trenches;

6 blasting techniques and areas where blasting occurs;

7 identify where drilling and open-cut techniques (minimising open-cut technique) are to be used for the entire pipe installation;

8 positioning of pipe-laying vessels, mooring pattern design and dredge support vessels;

9 management of benthic community in construction areas;

10 monitoring and establishment of impact from anchoring, wire and chain sweep techniques, marine dredging and supra-tidal excavation techniques used;

11 identification of areas to be dredged, excavated and the timing and duration of dredging/excavation;

12 water quality targets for criteria that will trigger management of sedimentation and protection of benthic community;

13 monitoring reporting, and mitigating impacts on natural littoral drift processes from construction activities and beach profiles during construction; and

14 the management actions and contingencies that will be implemented in the event that criteria for water quality targets required by point 12 above are not being met.

8-4 To ensure that the diffuser is located in a position to reduce the likelihood of plume impacts on high relief algal reefs immediately to the east of the outlet, the proponent shall extend the pipe length by 200 metres from the end of the pipe shown in Figure 4.17 of the proponent's Public Environmental Review document, Version 3, 8 November 2005. This will give a total pipe length of 3.7 kilometres from the high water mark.

8-5 The proponent is to ensure that the extent of the disturbance footprint (direct and indirect loss of habitat) is no greater than that defined in Condition 8-3 (2).

8-6 The proponent is to ensure that the extent of the disturbance footprint (direct impacts) shall be within the area defined in Figure 4 and Table 3 in Schedule 3.

8-7 The proponent is required to minimise indirect impacts as far as practicable within this boundary during construction.

8-8 The pipeline will be laid within the area defined in Figure 4 and Table 3 in Schedule 3, and the 'line' of direct disturbance footprint will also be within the area. (see note 9).

8-9 The proponent shall implement the Plan.

8-10 The proponent shall make Plan publicly available in a manner approved by the CEO.

9 Seabed and Benthic Habitat Monitoring and Management Plan

9-1 Prior to commencement of construction of the Alkimos ocean outlet in the marine environment, the proponent shall prepare and submit a Seabed and Benthic Habitat Monitoring and Management Plan (the Plan) that meets the objectives of condition 9-2 and the requirements of 9-3 as determined by the Minister for the Environment.

In preparing the Plan the Proponent shall consult with Department of Environment and Conservation.

9-2 The objective of this Plan is to ensure that seabed and benthic habitat loss outside the area of direct loss defined in the Plan required by Condition 8-3 (2) is avoided during construction and re-instated following construction.

9-3 This Plan shall address:

1. Procedures for obtaining and providing to the CEO, within six months following the completion of pipeline installation, an accurate total area and geographically referenced location map of areas of seabed (subtidal, intertidal and beaches) modification and benthic primary producer habitats lost or damaged during pipeline construction, including specific identification of any areas of loss or damage that are in excess or outside of those areas defined and predicted in the Plan required by Condition 8
2. Prediction and spatial definition of long-term stable' state of the marine environment following construction and taking into account on-going impacts from the presence of infrastructure – i.e. predicted impacts (the extent and severity) on the marine environment of indirect impacts (construction and ongoing impacts) (see also Condition 8-3 (3));
3. The establishment of a quantitative annual monitoring program of the seabed and benthic habitat condition in, and adjacent to, areas of seabed and benthic primary producer habitats damaged during pipeline installation and the ongoing presence of the infrastructure; and
4. The indicator(s) and criteria to be used to trigger cessation or reduction in the frequency of monitoring after three years following construction or, in the event of the trigger level referred to in item 3 above being exceeded, after the proponent has demonstrated the success of contingency actions in reducing the rate of annual seagrass loss or damage to less than the contingency trigger level referred to in item 3 above, for three successive years; and
5. Reporting procedures.

9-4 If within six months of completion of construction the marine habitat outside the area of direct impact has not returned to the state predicted in Condition 9-3 (3) the proponent is to commence contingency actions to ensure that the rate of post-construction seabed and/or benthic primary producer habitat loss or damage, is restricted and reduced.

9-5 The proponent shall implement the Plan.

9-6 The proponent shall make Plan publicly available in a manner approved by the CEO.

10 Fauna Management

10-1 Prior to ground-disturbing activity, the proponent shall prepare and submit a Fauna Management Plan (the Plan) that meets the requirements of Condition 10-2 as determined by the Minister for the Environment.

In preparing the Plan the Proponent shall consult with the Environmental Protection Authority.

10-2 The Plan shall address:

1 clearing of the construction area in a step-wise fashion as the plant expands, to reduce impacts on fauna;

2 avoidance of clearing land when Carnaby Cockatoos are actively breeding or foraging in the area; and

3 presence of terrestrial fauna and their translocation.

10-3 The proponent shall implement Plan.

10-4 The proponent shall make Plan publicly available in a manner approved by the CEO.

11 Marine Treated Wastewater Discharge Monitoring and Management Plan

11-1 Prior to commissioning of the wastewater treatment plant, the proponent shall prepare and submit a Marine Treated Wastewater Discharge Management Plan (the Plan) that meets the objective and Environmental Quality Objectives described in 11-2 and the requirements set out in 11-3 as determined by of the Minister for the Environment

In preparing the Plan the Proponent shall consult with the Environmental Protection Authority and the Department of Environment and Conservation

11-2 The objective of the Plan is to ensure that the discharge of Alkimos treated wastewater is managed to achieve simultaneously the following Environmental Quality Objectives as described in the document, Perth's Coastal Waters: Environmental Values and Objectives (Environmental Protection Authority, February 2000).

- Environmental Quality Objective 1 (Maintenance of ecosystem integrity), with spatially-assigned levels of protection as shown in figure 2 of schedule 1;
- Environmental Quality Objective 2 (Maintenance of aquatic life for human consumption) assigned to all parts of the marine environment surrounding the Alkimos ocean outlet with the exception of zones shown in figure 2 of schedule 1; and
- Environmental Quality Objectives 3 and 4 (Maintenance of primary contact recreation values, and Maintenance of secondary contact recreation values) assigned to all parts of the marine environment surrounding the Alkimos ocean outlet with the exception of zones shown in figure 2 of schedule 1.

11-3 The Plan shall address:

1. within the Zone of Low Ecological Protection (i.e. within a 100 metres from the diffuser as shown in figure 1, schedule 2), the proponent shall seek to achieve the ANZECC & ARMCANZ1 80% species protection guideline "trigger" levels (as

published from time to time) for bio-accumulating toxicants;

2. within the Zone of High Ecological Protection (i.e. beyond a 100 metres from the diffuser as shown in figure 1, schedule 2), the proponent shall seek to achieve the ANZECC & ARMCANZ 99% species protection guideline "trigger" levels (as published from time to time) for toxicants (with the exception of cobalt, where the 95% guideline shall apply),
3. the establishment of indicators and associated "trigger" levels for further investigations (environmental quality guidelines) for nutrients and social quality objectives;
4. the establishment of "trigger" levels for the implementation of remedial and/or preventative actions to protect the water quality and the environment off Alkimos (environmental quality standards) for toxicants, nutrients and social quality objectives;
5. the monitoring and evaluation, including remodelling, of the social and environmental effects of discharging treated wastewater into the marine environment off Alkimos to assess performance in the protection and maintenance of environmental values and objectives;
6. the specific management actions that will be implemented in the event that environmental quality standards levels are not met, including the option of modifying the diffuser to increase dilution;
7. a program to undertake whole-of-effluent toxicity testing of treated wastewater;
8. the monitoring and reporting of diffuser performance in terms of achieving required number of initial dilutions within the area of low level of ecosystem protection compared to the initial dilutions in schedule 1 under low energy/calm meteorological and sea-state conditions; and
9. the protocols and schedules for reporting performance against the Environmental Quality Objectives.

11-4 The proponent shall implement the Plan.

11-5 The proponent shall make the Plan publicly available in a manner approved by the CEO.

11-6 In the event that a guideline "trigger" level referred to in condition 11-3 is exceeded, the proponent shall report the matter to the Department of Environment and Conservation within one working day of determining that this has occurred, and shall initiate an investigation against the environmental quality standards and into the cause of the exceedance in accordance with the framework developed in the Revised Environmental Quality Criteria Reference Document (Cockburn Sound)[2], to the requirements of the Minister for the Environment on advice of the Department of Environment and Conservation.

11-7 In the event that an environmental quality standard referred to in condition 11-3 is exceeded, the proponent shall initiate a management response to determine the source and remedy the exceedance in accordance with the implementation framework for the National Water Quality Management Strategy, to the requirements of the Minister for the Environment on advice of the Department of Environment and Conservation

Note:

1 ANZECC & ARMCANZ guidelines are published in Australian and New Zealand Guidelines for Fresh and Marine Water Quality.

2 Revised Environmental Quality Criteria Reference Document (Cockburn Sound), A supporting document to the draft Environmental Protection (Cockburn Sound) Policy 2002, Environmental Protection Authority Report 20, November 2002.

3 Implementation framework for Western Australia for the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Guidelines Nos 4 & 7: National Water Quality Management Strategy), Report of the Environmental Protection Authority, Bulletin 1078, November 2002.

11-8 Prior to submitting a Works Approval application for the plant, the proponent shall:

1 estimate the expected typical physico-chemical composition and flow rates of all wastewater streams discharging into the environment from the site;

2 estimate, for all non-negligible contaminants and nutrients, the total annual loads of contaminants and nutrients in the wastewater discharge exiting the site;

3 estimate, for normal and worst-case conditions, the concentrations of contaminants and nutrients (for agreed averaging periods) in the wastewater discharge exiting the site; and

4. Establish a reporting process that is an inventory of toxicants that enter and leave the plant.

11-9 Prior to submitting a Works Approval application for the plant, the proponent shall provide information to show how "best practicable technology" and waste minimisation principles for contaminants and nutrients have been adopted for the wastewater discharge.

11-10 Within three months following commissioning and stabilizing of plant operations, the proponent shall conduct an analysis demonstrating that effluent properties are substantially consistent with predictions. Similar analyses shall also be conducted within three months following every major increase in the volume of treated wastewater discharged from the plant or any significant change in effluent characteristics.

11-11 The proponent shall develop a Contingency Wastewater Management Plan which will consider alternate options for wastewater treatment and/or disposal in the event that the Water Quality Objectives are not met.

11-12 In the event that effluent properties are not substantially consistent with predictions (refer to condition 11-9), the proponent shall conduct toxicological studies on the actual effluent, or provide acceptable alternative information such as risk assessment, to the timing and other requirements of the Minister for the Environment.

These studies and/or information shall be consistent with ANZECC requirements

11-13 In the event that the findings resulting from condition 11-12 indicate that the effluent poses a significant risk to the diversity of the species and biological communities and abundance/biomass of marine life, the proponent shall implement the Contingency Wastewater Management Plan required by condition 11-11.

11-14 The proponent shall review and revise the Contingency Wastewater Management Plan required by condition 11-11.

11-15 The proponent shall make any revisions of the Contingency Wastewater Management Plan, as required by condition 11-11, publicly available in a manner approved by the CEO

12 Odour Management Plan

12-1 Prior to commencement of operation, the proponent shall prepare and submit an Odour Management Plan (the Plan) to meet the objective set out in Condition 12-2 and the requirement in Condition 12-3 as determined by the Minister for the Environment.

In preparing the Plan the Proponent shall consult with the Environmental Protection Authority.

12-2 The Objective of the Plan is to manage the impacts of odour on health and amenity.

12-3 The Plan shall address

1. an initial dynamic olfactometry determination;
2. the biofilter acclimation period;
3. procedures for the replacement of the biofilter media;
4. regular checks of biofilter loading to ensure that the biofilter is balanced and to identify any short circuits (e.g. surface flow rate measurements and smoke tests);
5. the size of the stack;
6. compliance with the odour criteria, and trigger mechanisms for remedial actions when appropriate;
7. regular qualitative determination of odour from the facility;
8. odour surveys every five years;
9. contingency plans during upset or maintenance conditions;
10. contingency plans in the event of exceedances; and
11. complaint registration, investigation and response.

12-4 The proponent shall implement the Plan.

12-5 The proponent shall make the Plan publicly available in a manner approved by the CEO

12-6 The proponent shall operate the plant at all times to ensure that odour at all adjacent odour sensitive premises meets criterion for odours set out in condition 12-7 .

12-7 The odour criterion referred to in Condition 12-6 shall be 5 odour units (OU) (based on the 99.9 percentile 1 hour averaging Australia Standard OU) or as specified by the CEO from time to time through amendment of the operating licence issued under Part V of the *Environment Protection Act 1986.*

13 Decommissioning and Closure Plan

13-1 At least two years prior to the anticipated date of decommissioning and closure, or at a time agreed by the Environmental Protection Authority, the proponent shall prepare and submit a Decommissioning and Closure Plan (the Plan) that meets the requirements of Condition 13-2 as determined by the Minister for the Environment

In preparing the Plan the Proponent shall consult with the Environmental Protection Authority.

13-2 The Plan shall address:

1. removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;
2. rehabilitation to a standard suitable for the agreed new land use(s); and
3. identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

13-3 The proponent shall implement the Plan until such time as the Minister for the Environment determines, on advice of the Environmental Protection Authority, that the proponent's decommissioning and closure responsibilities have been fulfilled.

13-4 The proponent shall make the Plan publicly available in a manner approved by the CEO.

Notes

1. In the event that implementation of this proposal at Site A (Assessment No. 1582) is approved, implementation of the similar proposal at Site B (Assessment No. 1529), will not be approved.
2. The CEO may seek the advice of the Environmental Protection Authority, government agencies and relevant parties, as necessary, for the preparation of written notice to the proponent
3. The proponent should consult with relevant stakeholders, including but not necessarily limited to, the Department of Fisheries (regarding potential impacts on a rock lobster puerulis monitoring site) and the City of Wanneroo in the preparation of the management plans required by these conditions as and where appropriate.
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.*
5. The CEO will review the licence when the wastewater flow reaches 40 Megalitres per day, and periodically thereafter.
6. The proponent has committed to undertake best engineering design and construction practices to ensure the stability of the dune systems affected by the excavation for the WWTP and associated works.
7. It is expected that the proponent would address the use of additional odour Reduction Technology as required through the licensing process under Part V of the *Environment Protection Act 1986.*

8. These conditions do not in any way remove the proponent's obligation to comply with all relevant conditions contained in the Ministerial Statement 722, particularly in respect of the proponent's responsibility to develop and implement management plans for the installation of minor infrastructure on the land known as Areas 9a, 10a and 10b.

9. It is expected that the final area of disturbance from Ocean Outlet Pipeline (and diffuser) taking into account rehabilitation works and the ongoing impacts from the presence of the pipeline will be within the area defined in Figure 5 and Table 4 in Schedule 4.

David Templeman MLA
MINISTER FOR THE ENVIRONMENT; CLIMATE CHANGE; PEEL

Schedule 1

Alkimos Wastewater Treatment Plant – Site A, City of Wanneroo
(Assessment No. 1529)

General Description

The construction and operation of a wastewater treatment plant, and associated ocean outfall, on the Alkimos-Eglinton Dunal System with an ultimate processing capacity of 160 megalitres per day.

The main characteristics of the proposal are summarised in Table 1 below.

Table 1: Summary of Key Proposal Characteristics

Characteristic	Site A
Indicative life of project	Staged capacity to be implemented as follows: **Indicative Timing** — **Installed Capacity (ML/d) of inflow** 2009/10 — 10 2020 — 40 2030 — 60 2040 — 80 2050 — 120 Beyond 2050 — 160
Treatment process	Wastewater will be treated to an advanced secondary standard based upon the activated sludge process similar to that recently constructed at Woodman Point wastewater treatment plant. Additional treatment processes will be utilised to make the treated wastewater "fit for purpose" for disposal and re-use opportunities as and when they become available/viable. Odours will be vented via an approximately 50 metre tall stack.
Toxicant concentrations	Projected loads and flows will result in toxicant concentrations meeting the ANZECC & ARMCANZ 80% species protection guideline values for bio-accumulating toxicants within 100 metres of the ocean outlet diffuser, and meeting the ANZECC & ARMCANZ 99% species protection guideline values for bio-accumulating toxicants beyond 100 metres from the ocean outlet diffuser.
Connecting Pipeline Length Diameter Construction method	 250 metres approximately 1200mm inner diameter and 1400 to 1500mm outer diameter Open-cut pipe installation
Outlet pipeline Description Length Diameter Construction method	 Discharge up to 40ML/d advanced secondary treated wastewater beyond 2009. Duplication of the outlet may be required in the future, dependent upon availability of other disposal/reuse options at that time. 3.7 kilometres 1200mm inner diameter and 1400 to 1500mm outer diameter Open-cut pipe installation

Characteristic	Site A
Outlet diffuser Length Diameter Number of ports Port spacing Port diameter Dilution	 300 metres 1200mm inner diameter and 1400 to 1500mm outer diameter 100 3 metres 100mm The average dilution of the wastewater stream in the ocean will be at least 1:300 with the dilution being above 1:200 99% of the time within 100 metres of the ocean outlet diffuser.
Marine habitat loss arising from the construction of the pipeline	Not more than 7ha of seagrass (cumulative benthic primary producer habitat losses less than 1%)
Power requirements	3 Megawatts (ultimate)
Power source	Western Power grid
Volume of excavation	Not more than 180,000 cubic metres
Clearing of vegetation required Treatment plant site (including batters) Ocean outlet launch Site 1B Access roads within buffer Haul roads within buffer Quinns sewer route-within buffer to treatment plant **Total**	 15ha 6.6ha 0.8ha 0.0ha 0.85ha **Not more than 24 ha**
Odour buffer	600 metres. Majority of western portion of buffer located over ocean. No housing planned to the west of the site.

Abbreviations
ha = hectares
ML/d = Megalitres per day
mg/L = milligrams per litre

Figures (attached)

Figure 1: Alkimos Location Map
Figure 2: Areas where Environmental Quality Objectives are to apply

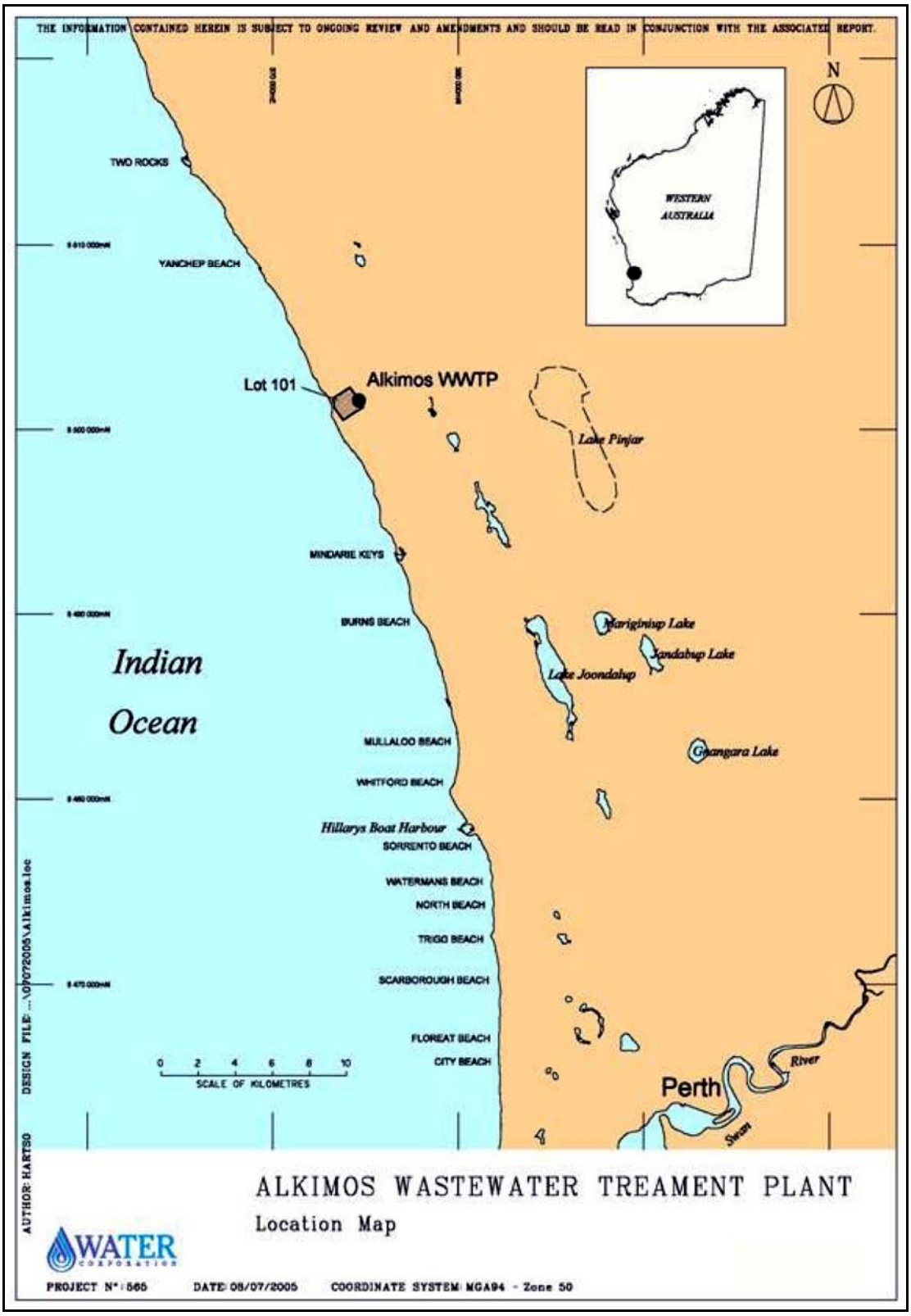
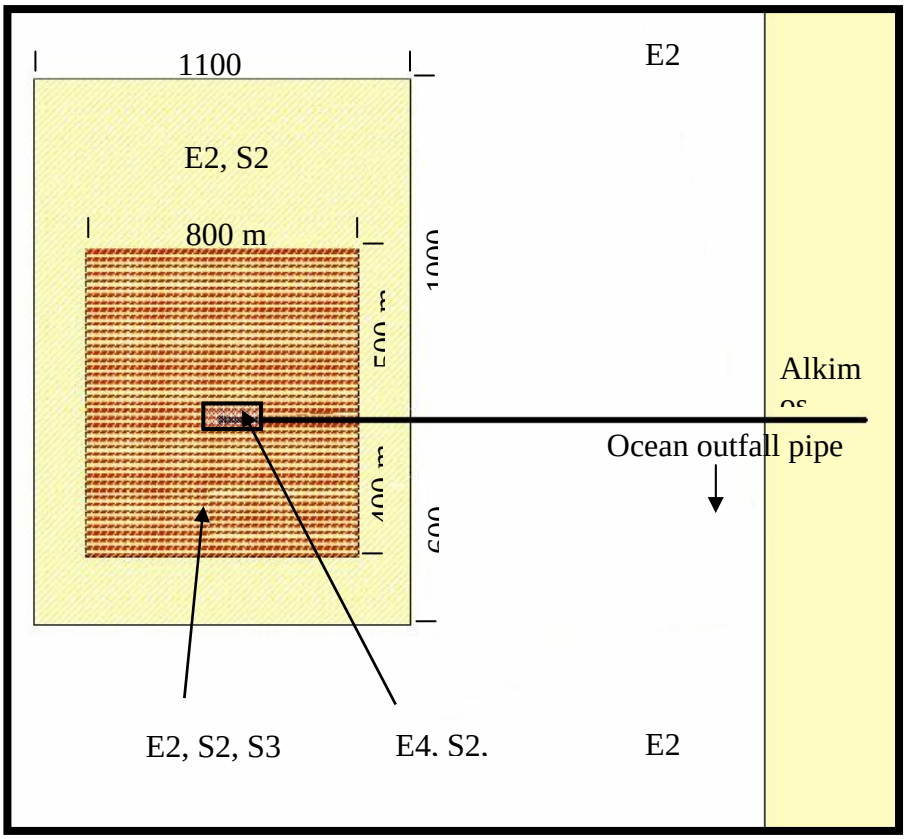


Figure 1: Alkimos Location Map



NOT TO SCALE

Figure 2: Areas where Environmental Quality Objectives are to apply

Key

E2: High level of ecosystem protection (everywhere more than 100 metres from the diffuser)
E4: Low level of ecosystem protection (within 100 metres of the diffuser)
S2: Not safe to harvest seafood
S3: Not safe for primary contact recreation

Note

Outlet diffuser length not exceeding 300 metres.

Schedule 2

Disturbance footprint for the launching site

The construction and operation of the launching site shall not extend beyond the limits defined in Figure 3 and Table 2 below.

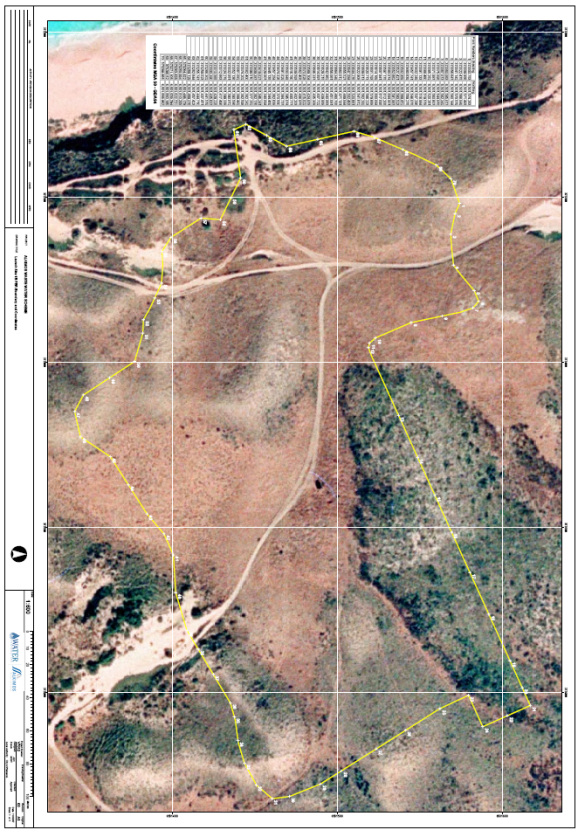


Figure 3: Disturbance footprint for the launching site

Table 2: Coordinates of disturbance footprint for launching site

Point Numbers	Easting mE	Northing mE
1	373303.753	6501574.263
2	373309.956	6501571.443
3	373322.475	6501568.849
4	373341.142	6501570.579
5	373356.647	6501583.144
6	373363.063	6501585.817
7	373367.073	6501582.342
8	373375.895	6501544.915
9	373371.987	6501563.607
10	373385.252	6501523.261
11	373388.460	6501519.518
12	373391.133	6501518.984
13	373432.249	6501537.296
14	373457.741	6501548.875
15	373480.639	6501559.275
16	373502.959	6501569.412
17	373527.421	6501580.523
18	373552.662	6501591.987
19	373580.874	6501604.801
20	373597.175	6501612.205
21	373607.941	6501617.095
22	373614.169	6501603.084
23	373601.793	6501579.668
24	373620.773	6501588.223
25	373609.813	6501562.292
26	373622.908	6501541.612
27	373634.276	6501523.661
28	373647.584	6501502.483
29	373655.527	6501489.844
30	373663.012	6501471.131
31	373664.349	6501460.705
32	373656.061	6501451.081
33	373642.962	6501443.863
34	373629.215	6501439.958
35	373614.897	6501437.722
36	373606.337	6501435.308
37	373589.104	6501424.978
38	373573.828	6501415.822
39	373562.405	6501408.975

40	373539.593	6501402.203
41	373516.780	6501400.777
42	373503.948	6501395.074
43	373491.829	6501384.737
44	373474.326	6501373.550
45	373457.254	6501362.638
46	373445.135	6501344.459
47	373429.807	6501340.894
48	373419.827	6501346.241
49	373409.387	6501362.176
50	373399.510	6501377.252
51	373382.400	6501382.242
52	373374.202	6501382.598
53	373361.082	6501389.442
54	373352.136	6501393.586
55	373332.851	6501393.812
56	373324.279	6501399.338
57	373312.663	6501417.496
58	373313.565	6501429.225
59	373300.390	6501435.637
60	373288.302	6501441.519
61	373259.023	6501437.411
62	373255.747	6501444.710
63	373262.644	6501457.423
64	373269.129	6501469.376
65	373264.922	6501488.179
66	373259.994	6501510.203
67	373263.828	6501522.721
68	373271.106	6501539.784
69	373280.520	6501560.165
70		