



Ms Suzanne Brown
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Your Ref
Our Ref 452/04
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Dear Ms Brown

ALKIMOS WASTE WATER TREATMENT PLANT (ASSESSMENT NO. 1529)

The final Environmental Scoping Document specifying the scope and content of the Public Environmental Review (PER) document for the above proposal has been approved provided the following advice made by the EPA Board is included:

1. The PER should discuss how the odour levels in the EPA Guidance Statement 47 - *Odour Impacts from new proposals* will be applied to the management of potential odours from Alkimos WWTP. It is not considered appropriate to directly relate to the odour levels at Subiaco WWTP;
2. The PER should clearly differentiate the two site options for the wastewater treatment plant in the PER and adequately cover the differences;
3. The PER should identify future options for wastewater recycling to minimise the amount of waste released by ocean outfall;
4. Due to the limited success in the maintenance of groundwater ecosystems, in previous cases, the PER should qualify statements made on this subject;
5. The PER should address Geoheritage in a regional context;
6. In the PER the environmental factors table (Table 2.2 in the scope) should have an applicable standards column (i.e. the relevant EPA Guidance Notes, EP Act Regulation);
7. In Table 2.2 the environmental objectives for flora and fauna should follow the hierarchical mitigation model i.e. "the Water Corporation ...ecosystem levels, through avoidance, *minimisation, rectification, reduction and offsets*";

8. In Table 2.2 the potential impacts of geo-heritage should read “that the associated infrastructure *would* adversely impact ...” not “have the potential to”;
9. In Table 2.2 the environmental objectives for the Marine Impact Zone should be clearly identified together with applicable standards or criteria (eg level of protection) for the zone; and
10. In the PER the full details of the two threatened ecological communities should be covered in detail when comparing the two site options.

Also attached are comments received from the Department of Environment’s Air Quality Branch, which should be considered in the odour sections of the PER.

As part of this next stage of the environmental assessment process it would be appreciated if you could send the EPA Service Unit an updated timeline of expected outcomes for the project.

During the preparation of the environmental review document you are encouraged to consult with Jaclyn Goad, the EPA Service Unit’s assessment officer for the project, who can be reached by telephone on 9222 8642.

Yours sincerely



Walter Cox
CHAIRMAN

Att

25 MAY 2005

ATTACHMENT 1.

Air Quality Branch Technical Advice

The following includes sections of the Air Quality Branches advice provided by Ken Rayner. He has recorded a collection of excerpts from the scoping document and then provided comment on them. The **bolding and underlining** identifies the points made in the text that relate to Ken Rayner's advice.

Page 32

.....The implications of this were further investigated and CSIRO's conclusions (Borgas 2004b; Borgas 2005) are that in low entrainment conditions, pond concentrations and volumes could grow far greater than previously assumed for normal conditions. **CSIRO predicted significant detectable odour and possible nuisance downwind beyond the previously modelled buffer zone.** That work is being peer reviewed and evaluated and the significance of the final results will be considered by the Corporation in determining the final buffer dimensions.

CEE (pers comm. 14/11/04) has provided preliminary advice on the CSIRO study:

*"The results show that ponding is a concern, and is likely to **increase the extent of the buffer zone** to the west of the plant by about **100 to 200m.**"*

I have reviewed the CSIRO work, finding one issue, which is likely to increase the concentration estimates presented in the current version of the CSIRO report. Irrespective of that issue, I think "100 to 200 metres" is nothing much more than a guess at this time. I would agree that the CSIRO work suggests significant westward relocation of the buffer. Site A with no residents to the west would be good for odour management of course.

Re the following excerpts about gravity feed:

Page 1

*A major consideration for the Corporation in siting the new wastewater scheme is the **pre-eminence** placed on providing a gravity system.*

Page 6

*One of the **primary drivers** for selection of the location of Alkimos Lot 101 as the site for the WWTP was to employ the natural level of the land to achieve gravity flow into and out of the treatment plant to the ocean.*

Page 7

The Corporation maintains that whether the AWWTP is finally located at Site B or at Site A, the following site selection principles apply:

- 1. A **gravity solution** (i.e. gravity inflow and outflow at the WWTP), thereby minimizing energy consumption from pumping, and maximizing confidence in "fail-safe" treatment and disposal when the collection and treatment system experiences power failure;*

Page 8

*An aspect of developing the AWWTP that has become better defined as project planning has progressed, is the **extensive excavation necessary during site preparation of Site B in order to achieve the gravity solution.** In order to develop a WWTP fulfilling the Corporation's site selection principles, it will be necessary to excavate Site B to a **level of around 10 m AHD,** thereby encroaching into the fringing dune structure and creating within the surrounding*

landform, a major pit approximately 3,000,000 m³ in volume. Investigations are continuing to determine the likely nature of the material that would have to be excavated and options for its disposal. Further, excavation at Site B will delay commencement of WWTP construction and commissioning by around one year compared to the schedule achievable at Site A. A further issue currently being investigated is the implication on the dispersion of odour, under 'ponding' conditions, of siting the AWWTP's in a pit.

Page 12

It is proposed that the principles of environmental protection provide the framework for specifically addressing:

1. The case for establishment of a single, centralised wastewater treatment facility in the Alkimos region;

2. The imperative for site selection based upon a gravity solution;

Etc.....

Comments on the above excerpts about gravity feed:

Gravity feed is presented as an imperative requiring excavation of the pit to 3,000,000 cubic metres. (The CSIRO used a current pit volume of 1,000,000 cubic metres in calculations). I have been given to understand that this means excavation 6 metres below the current level.

Critical Point - The work undertaken by the CSIRO to assess the possible impact of concentrated odours over the proposed urban development to the west is totally dependent on the meteorological measurements for the basin as it currently exists. If the basin is excavated, we can expect an increase in the frequency and severity of ponding events (as observed in a deeper basin further north), but there is currently no capability to predict what the impact will be (no measurements). Restated, it is my opinion that the Water Corporation is unable to provide a reliably derived estimate of odour impact from its proposed plant. Ponding has been recognised in the above excerpt but without an indication of its potential significance for the deepened pit. Its significance is perhaps recognised in the excerpt below from page 4:

Potential exacerbation of the WWTP odour impact resulting from odour ponding in and subsequently flushing from the pit created for the WWTP at Site B, necessitating additional buffer provision and/or emission control at source (which is already intended to be best practice for Australia).