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OCEANWATCH
FOR THE FUTURE OF OUR MARINE ENVIRONMENT

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Referrals Section (EPBC Act)
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Dear Referrals Section

Comments: 2005/2331 Sydney Water Corporation/Water management and use/Kurnell/NSW/Sydney Desalination Plant

This letter sets out the comments of Ocean Watch Australia Ltd (Ocean Watch) relating to referral *2005/2331 Sydney Water Corporation/Water management and use/Kurnell/NSW/ Sydney Desalinisation Plant*. Ocean Watch Australia Ltd. is an environmental, non-government organisation sponsored by the commercial seafood industry to represent the environmental interests of industry with respect to protecting and restoring fish habitats, improving water quality and promoting sustainable fisheries.

Ocean Watch believes that insufficient information has been provided for the Department of Environment and Heritage (DEH) to make an assessment as to whether this proposal is a controlled action. Given the political sensitivity to this proposal, the lack of support for it within the community in Sydney and the lack of will on the part of the State Government to follow the recommendations of the scientific community that a desalinisation plant is unnecessary for Sydney, it is imperative that Sydney Water be required to fully assess the environmental impacts under the *Environment Protection and Biodiversity Act 1999*.

We raise the following concerns with this referral relating to the controlling provisions of the EPBC Act:

Ramsar wetland/Migratory Species/Threatened species or ecological communities

1) The referral has not adequately considered the risks and management of mobilisation of existing contamination in groundwater during construction of the plant and any tunnelling and what impact this may have on groundwater dependent ecosystems that support Ramsar wetlands, migratory bird species and threatened species or communities within proximity of the proposed site.

2) Tunnels should not impede or change the groundwater flow directions. It is unclear from the referral whether this is likely to happen. Given the proximity to groundwater dependent ecosystems on and near the site, further assessment is required.

3) It is unclear as to whether disposal of brines and tunnels/pipelines will impact on the unconfined sand aquifer. This has not been assessed adequately in the referral.

Migratory species/Threatened species or ecological communities

4) The proposal notes that construction will be temporarily stopped if migrating whales are detected. There is clear evidence from international desalinisation plants that noise pollution is a problem, both during construction and then ongoing during operation. Substantial marine noise pollution may impact greatly on humpback whale migration patterns. The majority of humpbacks in Australian waters migrate north to tropical calving grounds from June to August, and south to the Southern Ocean feeding areas from September to November. The exact timing of the migration period can change from year to year and may be influenced by water-temperature, the extent of sea-ice, predation risk, prey abundance and location of feeding ground. Given that during the northern migration whales travel very close to the coast, it will be imperative that no construction activities occur during migration times. This is currently not proposed by Sydney Water.

   In addition, it is unclear if long-term operational impacts to whale migration have been assessed adequately by Sydney Water. Under the DEH *Humpback Whale Recovery Plan 2005-2010* it states *"Protect the species from threats: Protect habitat important to the survival of the species: Ensure that in areas important to the survival of the species environmental assessment process and research activities are in place to determine the level of impact and threat of human activities, and implement management measures to ensure the ongoing recovery of the species. This should include, but not be limited to, the following actions: assess and manage acoustic pollution… "*. The impacts from ongoing operational noise associated with the extraction of water and brine release must be considered adequately.

5) Desalination plants require huge water intakes. Depending on their location and design, these intakes can significantly impact marine ecosystems. *Mutaz A. Qutob (2004) Environmental Impacts of Water Desalination Along The Coastal Region of Israel and the Palestinian Authority, Department of Applied Earth and Environmental Studies, Faculty of Science and Technology, AlQuds University, Palestinian Authority* outlined the following environmental concerns from desalinisation plants in relation to their impact on marine habitats.

   The effluent/waste will be a heavily concentrated brine solution. After the brine solution is discharged, it will have the potential to kill marine organisms. Chemicals from the pre-treatments and from membrane periodical cleaning can harm habitat, for example, through the use of biocides such as chlorine, used to clean pipes or to pre-treat the water. Metals may become concentrated in the upper few micrometers of the ocean (the microlayer), which would be toxic to fish eggs, plankton, and larvae that are located there. Toxic constituents of the plume could be driven by wind or currents to become concentrated in the intertidal zone. The discharged waste also has the

potential to raise the temperature of coastal waters near the outlet. This can have adverse affects on marine life and water quality.

Chester (1975) found that a variety of organisms were adversely affected by the effluent from an analysis of the impacts of ocean discharges from a plant in Key West, Florida. For example, sea squirts, various species of algae, bryozoans, and sabellid worms were excluded from the harbour during at least a portion of the study; no live lamellibranchs were found by the end of the study; many dead shells of various clams and oysters were found; and echinoids were killed in the shallower waters near the harbour. Two or three of the species that survived well in the area near the effluent did so because they were able to avoid the peaks associated with start-up and were able to tolerate the steady-state effluent conditions. These species are similar to the species found within Botany Bay and off Cronulla/ Kurnell.

Very little information is available on the impacts of desalination plants on the marine environment. Few, if any monitoring studies have been conducted on the marine resource impacts of discharges from plants operating in the Middle East, Saipan, the Virgin Islands and Cuba. It is imperative, given the unique and diverse marine environment off Kurnell and the protected and migrating species within the area (particularly members of the NSW protected *Sygnathidae* family that reside within 400m of shore and humpback whales) that an adequate impact assessment is conducted. DEH must reject this proposal until the necessary studies have been done.

This proposal has not given adequate consideration to the cumulative long term impacts from an operating desalinisation plant at Kurnell in terms of rocky reef communities, migrating marine species and local fish stocks, including migrating pelagic species.

This proposal also goes against the directions proposed under the National Water Initiative (NWI). An extract from the Prime Minister and Cabinet's website states "*the NWI is a comprehensive strategy driven by the Australian Government to improve water management across the country. Australia's highly variable and often scarce water resources are crucial for our economic, social and environmental wellbeing. We need to continue to improve the productivity and efficiency of our water use, while maintaining healthy river and groundwater systems".* New South Wales (NSW) has signed onto this agreement. The NWI encompasses a wide range of water management issues and encourages the adoption of best-practice approaches to the management of water resources in Australia. In particular, the NWI promotes better and more efficient management of water in urban environments, for example through **the increased use of recycled water and stormwater.**

This proposal is unnecessary and not cost effective. It shows a short-term economic driven State government that is not concerned with addressing the water shortage problems within Sydney. The State Government should be investing in recycling, water reuse and stormwater harvesting initiatives in line with its commitment under the NWI. Desalinisation is only necessary for those urban areas that do not experience high annual rainfall such as Dubai! The Sydney basin cannot be considered a low rainfall area, particularly along the coastal strip with an average annual rainfall of 1221mm. It is not a sensible investment for Sydney and goes against the national approach to water management within Australia.

We call on DEH to reject this submission on the grounds of a lack of information to properly assess whether this proposal is a controlled action. A full environmental impact assessment must be undertaken before such a decision can be made.

Please do not hesitate to contact me on (02) 9660 2262 should you require further information regarding these matters.

Yours sincerely

Anissa Lawrence
Executive Officer
Ocean Watch Australia Ltd