

In reply please quote: 09/00004  
Your Ref: 11/6543-1

Contact: Stewart Rodham - 9725 0805

13 October 2011

**Kane Winwood**  
Team leader – Water Infrastructure Projects  
Department of Planning and Infrastructure  
GPO Box 39  
Sydney, NSW 2001

Dear Mr Kane

**RE: ROSEHILL RECYCLED WATER SCHEME – MODIFICATION REQUEST  
(MP 07\_0121\_MOD 4)**

Reference is made to your letter dated 29 September 2011 wherein you requested comments in respect to the abovementioned proposal. Council requests that you give consideration to the following comments in your assessment of Aquanet's modification request.

Under the original Environmental Assessment for the project and developed Operational Environmental Plan (subject to conditions of consent), Aquanet gave a commitment that any dewatering during maintenance or emergency works would be disposed of back into Sydney Water's sewer network or alternatively collected and disposed of as liquid waste. It was on the basis of this commitment that the operation of the pipeline was considered satisfactory from an environmental perspective.

**COUNCIL'S POSITION**

The original Environmental Assessment and approved Operational Environmental Management Plan for the distribution network **did not** include provisions for discharges of recycled water from within the network to land and water.

It therefore remains Council's position that during dewatering, the recycled water is either discharged to a sewer connection point in accordance with Sydney

Water's requirements or alternatively collected and taken away for appropriate use or disposal (as liquid waste).

Should the NSW Department of Planning and Infrastructure in its capacity as the consent authority approve the proposed Modification Application, Council recommends that the following additional conditions of consent be included (environmental mitigation measures).

#### **Additional Condition 1**

Discharge of water from within the distribution network can occur to land and water provided that:

- there is no evidence that the recycled water is 'out of specification'; and,
- the water is discharged in a manner than does not result in scour or erosion.

#### **Additional Condition 2**

The relevant local council shall be notified of any discharge of recycled water from the recycled water network to any body or stormwater drainage line at least 48 hours prior to discharge of recycled water occurring. All such discharges shall not cause any scouring of, or structural or environmental damage to, any banks or any other parts of any watercourses or any associated drainage works/assets.

Notification of the discharge of recycled water must include the following information to the relevant local Council: the person/business undertaking the activity, isolation valve discharge point & supporting map, discharge volume and velocity, affected drainage infrastructure, receiving waters, time and duration of discharge, reason for discharge and contact person details.

#### **Additional Condition 3**

A water quality report must be submitted to Council within 5 working days of the date of the discharge of recycled water to the environment, informing Council of the results of water sampling at the isolation valve discharge point.

#### **Additional Condition 4**

To avoid the potential for localised flooding, no planned discharges of recycled water from the network shall occur during times of wet weather or when the local stormwater system is otherwise operating at or near capacity.

#### **Additional Condition 5**

A Water Quality Monitoring Program requiring the sampling and analysis of recycled water parameters at the discharge points shall be undertaken. The

water quality monitoring program must include the parameters to be sampled and description thereof, analytical procedures, data quality objectives, data management and quality control and field equipment specifications and maintenance.

#### **Additional Condition 6**

Each financial year a report is to be submitted to the relevant local council, to report on the number of planned and unplanned discharges of recycled water from the network and to report on the water quality monitoring program, to ensure the recycled water is not 'out of specification' as may be expected for the discharge of recycled water in accordance with s.120 of the Protection of the Environment Operations Act 1997.

#### **Additional Condition 7**

The discharge of recycled water onto any land, whether public land or privately owned and into any other waters must not be outside the specification for prescribed water quality criteria stipulated in schedule 5 of the Protection of the Environment Operations (General) Regulation 2009. The definition of 'waters' in the dictionary under POEO states waters mean the whole or any part of:

- (a) any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea), or
- (b) any water stored in artificial works, any water in water.

#### **Additional Condition 8**

The discharge of recycled water onto any council parkland shall not occur without the prior approval of the relevant council.

Any enquiries associated with this submission should be directed to Council's Environmental Management Co-ordinator – Stewart Rodham who can be reached on 9725 0805.

Thank you for providing Fairfield Council with the opportunity to comment on the abovementioned proposal.

Yours faithfully



Denis Skeggs  
Manager – Environment & Health



Your Reference: MP 07\_0121\_Mod 4  
Our Reference: NCA/8/2011  
Contact: Maya Sarwary  
Telephone: 9806 5578  
Fax: 9806 5917

Department of Planning and Infrastructure  
GPO Box 39  
SYDNEY NSW 2001

Attention: Ms Lisa Chan

12 October 2011

Dear Ms Chan

**Submission for Rosehill Recycled Water Scheme – Modification Request (MP 07\_0121\_Mod 4)**

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I refer to your notification of the request to modify the Rosehill Recycled Water Scheme pursuant to Section 75W of the Environmental Planning and Assessment Act 1979 (EP and A Act).

The modification request has been reviewed by officers of Parramatta City Council and the following comments are made:-

**Environmental Health**

It is advisable that the discharge of recycled water from the distribution network to stormwater be closely monitored to ensure the discharge does not constitute water pollution within the meaning of the Protection of the Environment Operations Act, should the modification be approved, conditions of consent regarding this monitoring are recommended.

The OEMP for the distribution network **does not** include provisions for discharges of recycled water from within the network to land and water. During dewatering, the OEMP requires that the recycled water must be collected and taken away for appropriate use or disposal (as liquid waste). This is the preferred option of the Environment and Public Health Team of Parramatta City Council.

In the event of approval, however, it is recommended that the following additional environmental mitigation measures are proposed for inclusion in the OEMP to address discharge of recycled water to land and water.

Recommendation 1:

Discharge of water from within the distribution network can occur to land and water provided that:

- there is no evidence that the recycled water is 'out of specification'; and,
- the water is discharged in a manner than does not result in scour or erosion.

Recommendation 2:

The relevant local council shall be notified of any discharge of recycled water from the recycled water network to any body or stormwater drainage line at least 48 hours

prior to discharge of recycled water occurring. All such discharges shall not cause any scouring of, or structural or environmental damage to, any banks or any other parts of any watercourses or any associated drainage works/assets.

Notification of the discharge of recycled water must include the following information to the relevant local Council: the person/business undertaking the activity, isolation valve discharge point & supporting map, discharge volume and velocity, affected drainage infrastructure, receiving waters, time and duration of discharge, reason for discharge and contact person details.

Recommendation 3:

A water quality report must be submitted to Council within 5 working days of the date of the discharge of recycled water to the environment informing Council of the results of water sampling at the isolation valve discharge point.

Recommendation 4:

To avoid the potential for localised flooding, no planned discharges of recycled water from the network would occur during times of wet weather or when the local stormwater system is otherwise operating at or near capacity.

Recommendation 5:

A Water Quality Monitoring Program requiring the sampling and analysis of recycled water parameters at the discharge points is to be undertaken. The water quality monitoring program must include the parameters to be sampled and description thereof, analytical procedures, data quality objectives, data management and quality control and field equipment specifications and maintenance. Each financial year a report is to be submitted to the relevant local council, to report on the number of planned and unplanned discharges of recycled water from the network and to report on the Field water quality monitoring program, to ensure the recycled water is not 'out of specification' as may be expected for the discharge of recycled water in accordance with s.120 of the Protection of the Environment Operations Act 1997.

Recommendation 6:

The discharge of recycled water into any land, whether public land or privately owned and into any other waters must not be outside the specification for prescribed water quality criteria stipulated in schedule 5 of the Protection of the Environment Operations (General) Regulation 2009. The definition of 'waters' in the dictionary under POEO states waters mean the whole or any part of:

- (a) any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea), or
- (b) any water stored in artificial works, any water in water

**Natural Resources**

- There should be no new water discharge points created through a Council reserve into the Duck River.
- No water from this proposal should be directly discharged through or into an Endangered Ecological Community (EEC's). The duck river is fringed with Endangered Ecological Communities.

- There should be no disturbance to the EEC's during the construction of discharge outlets.

Thank you for the opportunity to make a submission on the modification of the approval for the Rosehill Recycled Water Scheme.

If you have any questions please call Council's Senior Development Assessment Officer, Maya Sarwary, on 9806 5578.

Yours sincerely



Mark Leotta  
**Service Manager Development Assessment**



**Office of  
Environment  
& Heritage**

Your reference: 11/6543-1  
Our reference: DOC11/45173  
Contact: Jennifer Sage  
9995 6856

Mr Kane Winwood  
Infrastructure Projects  
Department of Planning and Infrastructure  
GPO Box 39  
Sydney NSW 2001

Attention: Ms Lisa Chan

Dear Mr Winwood,

**Rosehill Recycled Water Scheme – Modification Request (MP07\_0120 MOD4)**

I refer to your invitation to submit comments on the proposed modification of the conditions of approval for the Rosehill Recycled Water Scheme to allow the discharge of recycled water to land and water during network dewatering.

Office of Environment and Heritage (OEH) does not object to the principle of the proposal, that is to discharge recycled water to the environment during commissioning of the distribution network or during pipeline maintenance and repair, provided that the activity can be carried out without polluting waters or causing environmental harm as defined by the *Protection of the Environment Operations Act 1997* (POEO Act). Having reviewed the '*Due Diligence Report – Proposed discharge of recycled water to land and water during network dewatering*' (the Report) prepared by Jemena, OEH has a number of concerns with the proposed amendment in relation to the quality of the recycled water and potential impacts on the receiving environment. These concerns are detailed in Attachment A.

The Report states that Fairfield, Holroyd and Parramatta Councils are the appropriate regulatory authorities for activities associated with the Rosehill Recycled Water Scheme which are regulated by the POEO Act. I confirm that OEH does not have a licensing role for this scheme and therefore the above councils are the appropriate regulatory authorities.

Should you have any queries in relation to these comments, please contact Jennifer Sage on 9995 6856 or [jennifer.sage@environment.nsw.gov.au](mailto:jennifer.sage@environment.nsw.gov.au).

Yours sincerely

A handwritten signature in cursive script that reads 'G. Howard'.

21 OCT 2011

**GISELLE HOWARD**  
**Director Metropolitan**  
**Environment Protection and Regulation**

Encl

## Attachment A

### **Rosehill Recycled Water Scheme – Modification Request (MP07\_0120 MOD4) Proposal to discharge recycled water to land and water during network dewatering**

OEH considers that the recycled water from the Rosehill Recycled Water Scheme, if discharged to land or water during dewatering of the distribution network, is likely to cause environmental harm. Our primary concern is the residual chlorine and conductivity levels measured in the recycled water during the proving period for the treatment plant.

#### Chlorine

The typical free chlorine levels in the recycled water were reported to be 0.95 – 1.4 mg/L (Section 3.2.1, Table 3 of the Report). At these levels, chlorine is toxic to aquatic organisms. The water quality criteria for chlorine (ANZECC, 2000) is 0.003 mg/L and while this is below the detection limit used by laboratories, it gives an indication of how much of a concern levels in the order of 1 mg/L are.

For large volumes of water (e.g. in excess of 1ML), OEH considers that recycled water should be dechlorinated and tested prior to discharge to ensure the level of residual chlorine residual are less than 0.1 mg/L. Recycled water that has not been dechlorinated should be discharged to a gutter or stormwater system to ensure the recycled water can travel some distance before reaching a waterway, allowing some or all of chlorine to be oxidised prior to reaching the waterway.

Sensitive plants can be affected by chlorine levels above 2 mg/L. Therefore, OEH considers that recycled water with chlorine residual levels greater than 2 mg/L should not be discharged to land.

#### Conductivity

The conductivity levels in the recycled water were extremely low (19.6 – 23.3  $\mu\text{S}/\text{cm}$ ), which is typical of water treated by reverse osmosis. Water with a conductivity level of  $< 50\mu\text{S}/\text{cm}$  is likely to cause harm to organisms if discharged directly to a waterway and thus result in fish kills. The ANZECC guidelines recommend conductivity levels between 125 – 2,200  $\mu\text{S}/\text{cm}$ .

It is not clear from the Report whether the recycled water will be further treated (remineralised) to increase the level of dissolved solids/conductivity before entering the distribution network. Often remineralisation is carried out as part of the treatment process to protect the distribution system, as well as customers' infrastructure, from corrosion.

The Report suggests that in some circumstances the water will be discharged to land or to the stormwater system. If remineralisation is not carried out, the recycled water should be discharged to a gutter or stormwater drain, where it will be able to pick up, suspend and dissolve particulate and organic matter, increasing the dissolved solids concentration in the water. By the time the recycled water reaches receiving water, it would be less likely to pollute or cause harm to the receiving environment.

#### Nutrients and metals

The upper water quality limits for nutrient and aluminium concentrations are relatively high and above water quality guidelines. OEH would not support the discharge of water to the environment at these levels. However, the results provided during the proving period for the treatment plant (Table 3 of the Report) suggest that the actual levels in the recycled water will be much lower. OEH expects that this would be the case for a plant using ultrafiltration and reverse osmosis.

Summary

Without further treatment (mineralisation or dechlorination) the recycled water from the Rosehill Recycled Water Scheme is likely to cause environmental harm if discharged directly to a waterway. As a hierarchy of control to minimise water pollution or environmental harm, OEH's preferred options for discharge, in order of preference, are –

1. Remineralisation of recycled water as part of the treatment process;
2. Dechlorination of large volumes of water (>1ML) prior to discharge;
3. Irrigation of water to land (where chlorine levels are below 2mg/L); then
4. Discharge of water into a gutter or stormwater drain allowing it to travel some distance prior to reaching the receiving water.

OEH does not support the discharge of recycled water directly to a waterway.

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From: Helen Ptolemy [mailto:[ptolemh@wahs.nsw.gov.au](mailto:ptolemh@wahs.nsw.gov.au)]  
Sent: Thursday, 20 October 2011 10:48 AM  
Subject: Re: FW: Rosehill Recycled water planning approval modification

Hi Leslie,  
Sorry for the delay. I've looked at the environmental assessment - I don't think that there is a major concern from a public health point of view, as long as the recycled water is of the required treated water standard under the WICA licence, especially as the free chlorine residual would be around 1ppm. I guess we could request again here that if any 'untreated' or out of spec water is required to be discharged it should be pumped out and disposed of to sewer and if it is discharged we and the relevant Council should be notified.

I note that Parramatta, Fairfield and Holroyd Councils are the ARA's so they may have some concerns about of the discharge of the water with 1ppm free chlorine which could affect the receiving environment. But I also note they are being consulted, so I'm sure they will discuss this.

Thanks and sorry again for delay in responding.  
Regards  
Helen

Helen Ptolemy  
Environmental Health (Team Leader)  
Centre for Population Health  
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# Department of Primary Industries

Our ref: OUT11/18576  
Your ref: 11/6543-1

NSW Department of Planning and Infrastructure  
(Attn: Lisa Chan)  
GPO Box 39  
SYDNEY NSW 2001

Dear Ms Chan,

**Re: Rosehill Recycled Water Scheme – Modification Request (MP07\_0121\_Mod 4)**

Thank you for your letter dated 29 September 2011 requesting comment from NSW Department of Primary Industries (DPI) - Fisheries on the above proposal.

Considering the policies and provisions under the *Fisheries Management Act*, DPI-Fisheries has no objection to the proposed modification involving discharge of recycled water to land and water during network dewatering.

If you require any further information please contact me on (02) 9527 8552.

Yours sincerely,

Carla Ganassin  
Conservation Manager, Aquatic Habitat Protection Unit

6 October 2011