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20 March 2007

**GREATER WELLINGTON
REGIONAL COUNCIL**

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Greater Wellington Regional Council
P O Box 41
MASTERTON 5840

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**Attention: Lynley Hamilton
Resource Advisor**

File Ref:			
WGN	07	01	62
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			Date/Initial
Div. Mgr			
L&RO Mgr			
Res Mgr			✓
S/Serv Mgr			
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BUnit Mgr			
Referred to:			
L HAMILTON			

Dear Lynley

**Ministry of Education, Pauatahanui School
Discharge Permit: Discharge to Land – Consent No. WGN070162**

The Pauatahanui School Board of Trustees and the Ministry of Education wish to object to some of the terms and conditions of resource consent No.WGN070162 for treated wastewater to be discharged to land at Pauatahanui School and request Greater Wellington reconsider these conditions as outlined below. The Ministry of Education (the applicant) applied for the resource consent on behalf of the Pauatahanui School Board of Trustees, who is the consent holder.

Resource consent No.WGN070162 was granted by Greater Wellington on 28 February 2007. MWH, on behalf of the applicant, received a copy of the consent on 5 March 2007. The terms and conditions of the above consent to which this objection relates are Conditions 2, 3, 12, 13, 19, and 20. The reasons for objecting and the proposed relief sought in respect of each objection are set out below.

Condition 2

Condition 2 states

"The discharge shall be only wastewater of domestic origin as described in the consent application and the maximum discharge of wastewater to the disposal area shall not exceed 5,100 litres of treated wastewater per day."

The estimated average daily wastewater flow at peak occupancy given in the consent application has been used as the maximum discharge quantity in the consent condition. By the very nature of being an average, the school will exceed the estimated average wastewater flow given in the application. A peaking factor of 2 was used to determine the daily wastewater flow in a peak week (ie 5,040 L/day x 2 ≈ 10,000 L/day), and this flow was proposed in the consent application as the maximum discharge quantity. The on-site system components are designed for the average daily flow with capacity to buffer peak flows. For example, assuming 30% soil void space, 0.15m top soil depth and 1,500m² land disposal area then there is 67.5m³ or 67,500L of storage capacity within the topsoil of the land disposal area to buffer peak flows. It is considered that Condition 2 should be reworded to reflect a realistic maximum discharge quantity.

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We request/suggest that Condition 2 be changed to read:

"The discharge shall be only wastewater of domestic origin as described in the consent application and a maximum discharge of wastewater to the disposal area shall not exceed 10,000 litres of treated wastewater per day."

Condition 3

Condition 3 states

"The rate at which treated effluent may be applied to the land is up to a maximum of 4mm/day."

As for Condition 2, the discharge rate of 4mm/day is a daily average areal loading rate. The land disposal system comprises a series of drip irrigation lines that has drippers (ie outlets) at intervals along the line. Treated wastewater is pump-dosed to the irrigation lines at certain intervals over the course of a day. The soil in the immediate vicinity of a dripper on the irrigation line receives the majority of the wastewater. The loading rate in the immediate vicinity of the drippers during dosing will be far greater than 4 mm/day but the average discharge rate over the entire land disposal area is 4 mm/day. As the discharge rate is set by the size of the land disposal area and the wastewater flows, it is considered there is no need for Condition 3.

We request/suggest that Condition 3 be deleted.

Condition 12

Condition 12 states

"People (except persons involved with maintaining/managing the system) are prevented from entering the disposal area for a period of at least 48 hours prior to the last application of effluent."

It is understood that Greater Wellington's reason for this condition is to protect public health. As effluent is dosed every day during the school term, an implication of this consent condition is that the School Caretaker or gardener would not be able to enter the area to maintain the vegetation during the school term. Effluent is dosed at very low quantities to the land disposal area and so, provided people wear appropriate clothing and footwear, wash their hands after being in the area and take other precautionary measures, the public health risk to people being in the disposal area to maintain the area is considered to be negligible.

We request/suggest that Condition 12 be changed to read:

"People (except persons involved with maintaining/managing the system and its environment) are prevented from entering the disposal area for a period of at least 48 hours prior to the last application of effluent."

Condition 13

Condition 13 states

"The disposal field area is to be fenced off and signage erected to warn of the public health risk from sewage disposal in the area. Signs are to be placed at the most likely points of entry."

It is understood that Greater Wellington's reason for fencing of the land disposal area is to discourage people from accessing the area. The land disposal area is managed as an "out-of-bounds" area by the school staff. Pupils, staff and the public are currently discouraged from entering the land disposal area by fencing along the school's driveway (approximately 60% of the northeast boundary of the land disposal area) and the southwest boundary of the school site (100% of the southwest boundary of the land disposal area), the topography of the land disposal area and the mature native bush that covers the land disposal area. As fencing the area would be difficult and costly, the school proposes to install a combination of marker posts and warning signs to indicate the boundary of the area not to be accessed.

We request/suggest that Condition 13 be changed to read:

"The consent holder shall install and maintain a combination of marker posts and signs to indicate the boundary of the area not to be accessed and to inform people of the potential public health risk associated with the discharge of treated wastewater in the area. Signs are to be placed at the most likely points of entry."

Condition 19

Condition 19 states

"The consent holder shall sample the secondary treated effluent at least once in December, March, June and September of each year for the duration of this consent. Each sample shall be tested for a:

- *Biochemical oxygen demand (BOD) (g/m³)*
- *Total Suspended Solids (TSS) (g/m³)*
- *Faecal coliforms (per 100mL)*

The consent holder shall record the results quarterly and forward the results annually by 31st March each year for the term of the consent, to the Manager Environmental Regulation, Wellington Regional Council.

Any sample taken under this condition shall be after at least one week of full occupancy at the school."

It is understood that Greater Wellington's reason for the last sentence of this condition is to ensure that sampling is taken during full occupancy of the school, rather than during the school holidays, to better understand the nature of the discharge to the environment.

The secondary treatment unit is a biological system. Outside of the school term, the treatment unit is switched to "holiday" mode, with wastewater (the "food") being recycled back through the system to keep the biological system functioning. At the start of the school term the treatment unit is switched to "term" mode, however the biological system will take a period of time to adjust to the sudden increase in "food" (ie the wastewater) and reach its "full" treatment capacity (ie treat the wastewater to a "secondary standard"). As monitoring data is not available to show how long this period of time is, it is considered that Condition 19 should be reworded, to reflect the intent of this condition and the nature of the system.

We request/suggest that Condition 19 be changed to read:

“The consent holder shall sample the secondary treated effluent at least once in December, March, June and September of each year for the duration of this consent. Each sample shall be tested for a:

- *Biochemical oxygen demand (BOD) (g/m³)*
- *Total Suspended Solids (TSS) (g/m³)*
- *Faecal coliforms (per 100ml)*

The consent holder shall record the results quarterly and forward the results annually by 31st March each year for the term of the consent, to the Manager Environmental Regulation, Wellington Regional Council.

Any sample taken under this condition shall be after at least two weeks of full occupancy at the school.”

Condition 20

Condition 20 states

“The consent holder shall ensure that the quality of the effluent discharge does not exceed the following parameters:

- *BOD₅ – 15 mg/l*
- *Total Suspended Solids (TSS) – 15 mg/l*
- *Faecal coliforms – 10,000 cfu/100ml”*

The consent application provided typical values for the level of BOD₅, total suspended solids and faecal coliforms expected in the effluent discharge from the secondary treatment unit. These values are consistent with the system specifications given by the system manufacturer. It is noted that a higher level of treatment was generally reported for the Orenco AdvanTex® (AX20) system at the recent Environment Bay of Plenty field trials in Rotorua. cBOD₅ was 5g/m³ in week 6/7 of the trial and reduced to 1 g/m³ in week 54/55 and suspended solids was 8 g/m³ in week 6/7 and reduced to 1 g/m³ in week 54/55. The exception was the level of faecal coliforms, which ranged between 13,000 cfu/100mL and 54,000 cfu/100mL during the sampling period. Data is not available for the Orenco AdvanTex® (AX20) system with an intermittent loading, like the school's system experiences.

As noted in the consent application, the treatment process is a biological process and therefore there will be a degree of natural variation. Accordingly, median and 80% compliance limits were proposed in the consent application for BOD₅ and faecal coliforms to allow for the natural biological variation. The median limit proposed in the consent application has been used as the maximum discharge limit in the consent condition. It is considered that Condition 20 should be reworded to allow for a degree of natural variation, whilst ensuring that environmental effects of the discharge are no more than minor.

We request/suggest that Condition 20 be changed to read:


“The consent holder shall ensure that the quality of the effluent discharge does not exceed the following parameters:

- *BOD₅ – 45 mg/l*
- *Total Suspended Solids (TSS) – 45 mg/l*
- *Faecal coliforms – 100,000 cfu/100ml”*

On a separate matter, the Ministry of Education is responsible for the processing fees associated with this consent, including any costs associated with reconsidering the identified consent conditions. Once the consent is issued, all costs associated with the on-going administration of the consent will be the responsibility of the consent holder (the Pauatahanui School Board of Trustees). Can you please amend the details in your system to reflect this.

If you have any queries with regards to our comments on the consent conditions or invoicing details, please do not hesitate to contact Kirsten Norquay at the address for service. Otherwise we look forward to hearing from you with regards to the consent conditions.

Yours sincerely
MWH New Zealand Limited



Kirsten Norquay
Environmental Engineer

- Copy to:
- Elizabeth Flint, Ministry of Education, PO Box 1666, Thorndon, Wellington
 - Hillary Gandy, Ministry of Education, Level 3, 19 Market Grove, Lower Hutt, Wellington
 - Mike Farrelly, Pauatahanui School, RD1, Pauatahanui, Porirua