373/002/006

Mr Palmer
224 2443

28th April, 1987

Dear Sir,

Biocyte Household Sewage Treatment Plant - 6 000 L Capacity

Reference is made to your application for the authorisation of the Biocyte household sewage treatment plants dated 9th May, 1986 and subsequent submission of effluent test results.

It is advised that the evaluation of the plant's performance has been completed and the Biocyte 6 000 L household sewage treatment plant, as detailed in the drawings and equipment specification submitted with the application, is authorised for use in Queensland subject to the following conditions.

1. The plants shall continue to perform satisfactorily in service and produce an effluent of the prescribed standard.

2. Each unit shall be permanently marked with the manufacturer's name, registered trademark and product identification in a way that will be readily visible after installation.

3. No modification of the process, design, material (including the particular type and surface area of media in the aeration compartment), identification, etc., of the plant shall be made without prior request to the Department to review the authorisation.

4. Illustrative brochures for the plant shall emphasise the need for regular maintenance to maintain the effluent quality of the plant and inform readers of typical operating costs involved with such an installation.

5. A network of servicing agents shall be established throughout the distribution areas for the plant, sufficient to meet the requirements of 3 monthly routine servicing of units, effecting repairs within 24 hours of notification of breakdown, providing a 24 hour per day call service and maintaining a readily available supply of spare parts. The Department shall be kept notified of changes to the manufacturer's approved servicing agents and the Local Authority areas in which they operate.

The Director,
Biocyte Pty Ltd,
56A Old Barrenjoey Road,
AVALON. N.S.W. 2107

.../2
6. Each installation of the plant shall be subject to the prior approval of the Local Authority and shall be subject to any conditions the Local Authority might impose in granting a permit.

Yours faithfully,

K.J.M.

Director of Local Government, per [signature]
14th July, 1988

The Director,
Biocyte Pty Ltd,
56A Old Barrenjoey Road,
AVALON. N.S.W. 2107

Dear Sir,

Biocyte Household Sewage Treatment Plant – 6 000 L Capacity

Reference is made to the authorisation of the Biocyte 6 000 L household sewage treatment plant, dated 28th April, 1987, issued by the Director of Local Government. By-law 186 of the Standard Sewerage By-laws has been amended and now requires household sewage treatment plants to be authorised by the Commissioner of Water Resources.

It is advised that re-evaluation of the plant's performance is not required and the Biocyte 6 000 L household sewage treatment plant, as detailed in the drawings and equipment specification submitted with the application on 9th May, 1986, is authorised for use in Queensland subject to the following conditions:

1. The plants shall continue to perform satisfactorily in service and produce an effluent of the prescribed standard.

2. Each unit shall be permanently marked with the manufacturer's name, registered trademark and product identification in a way that will be readily visible after installation.

3. No modification of the process, design, material (including the particular type and surface area of media in the aeration compartment), identification, etc., of the plant shall be made without prior request to the Commissioner to review the authorisation.

4. Illustrative brochures for the plant shall emphasise the need for regular maintenance to maintain the effluent quality of the plant and inform readers of typical operating costs involved with such an installation.

.../2
A network of servicing agents shall be established throughout the
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within 24 hours of notification of breakdown, providing a 24 hour
per day call service and maintaining a readily available supply
of spare parts. The Commissioner shall be kept notified of changes
to the manufacturer's approved servicing agents and the Local Author-
ity areas in which they operate.

Each installation of the plant shall be subject to the prior approval
of the Local Authority and shall be subject to any conditions the
Local Authority might impose in granting a permit.

Yours faithfully,

[Signature]

for Commissioner of Water Resources.
Department of Natural Resources and Mines  
Queensland

MODEL APPROVAL (Biocyte 6000L AWTS)  
AMENDMENT No. 2  
Section 77—Standard Sewerage Law 1998

1. The Biocyte 6000 Litre Aerated Wastewater Treatment System was approved for use in Queensland by letter of authorisation dated 28 April 1987.

2. On 2 January 1992, the then Commissioner of Water Resources approved, as set out in the amended authorisation of that date, the use of reinforced concrete as the material to be used in the construction of the tank.

3. On 6 August 2001 it was approved, as set out in the amended approval, the substitution of a concrete baffle component in place of the fibreglass baffle component.

4. Department of Natural Resources and Mines has been advised that the approval for the Biocyte 6000L was acquired by Jowa Group Pty Ltd on 4 October 2000 and the approval should be amended.

5. Approval is given for the modification described in clause 4 above and the conditions applying to the authorisation dated 28 April 1987, together with amendments dated 2 January 1992 and 6 August 2001 apply to the amended approval.

R Reilly  
General Manager  
Water Industry Compliance

Date approved: 3 July 2003
MODEL APPROVAL (Biocycle 6000L AWTS)
AMENDMENT No. 1
Section 77—Standard Sewerage Law 1998

1. The Biocycle 6000 Litre Aerated Wastewater Treatment System was approved for use in Queensland by letter of authorisation dated 28 April 1987.

2. On 2 January 1992, the then Commissioner of Water Resources approved, as set out in the amended authorisation of that date, the use of reinforced concrete as the material to be used in the construction of the tank.

3. On 14 December 2000 the manufacturer requested approval to modify, as described in the schedule, the authorised model to allow the substitution of a concrete baffle component in place of the fibreglass baffle component.

4. Approval is given for the modification described in clause 3 above and the conditions applying to the authorisation dated 28 April 1987 and 2 January 1992 apply to the amended authorisation.

R Reilly
General Manager
Water Industry Compliance
Date approved: 6/8/2001

SCHEDULE

Attachment 1 Specifications
Attachment 2 Drawings
SCHEDULE

Attachment 1

Fibreglass component manufacturing specifications - One page.
4th May 2001

Mr Robert Coleman
Biocyte Corporation
Fax: 5598 3243

Dear Sir

Re: Manufacturing Specifications

As requested please find enclosed our material specification for the manufacturing of the Biocyte Internal Pods and Lid.

The material used in the pods and glass construction is GP Resin which complies with the Biocyte specification, MEK catalyst and 18oz continuous fibreglass rovings.

The pods are manufactured to a thickness of 6mm which complies with the Biocyte specifications.

The method of construction is the use of a chopper gun and paddle roller for laying up the glass and laminating.

We trust this covers your inquiry. If you have any queries please do not hesitate in contacting me.

Yours faithfully

Bill Allan
Director

[Stamp: Dept of Natural Resources & Mines Queensland]

MODEL APPROVAL
Amendment No: ..................................
Date of Issue: 6/8/2001
General Manager: ..................................
Water Industry Compliance [Stamp]
MEGAPOXY P1

GAP FILLING EPOXY Paste ADHESIVE FOR CIVIL ENGINEERING USE

MEGAPOXY P1 is a two component epoxy paste based on DGEBA epoxy resin and carbonate filler. Easy to use, this product sets after mixing with excellent properties for a wide range of applications.

RECOMMENDED APPLICATIONS

BONDING
- Precast concrete article
- Metal to metal or concrete
- Grouting bolts
- Natural stones
- Bricks and ceramics
- Bonding compressed cement sheet

FILLING & REPAIRS
- Concrete pipes and tanks
- Fibreglass articles
- Concrete floors and stairs
- Concrete column
- Insitu formed concrete
- Flush-filling countersunk screws in fibre cement sheet

CHARACTERISTICS

Simple 1:1 mix ratio
Creamy texture, blends easily
Non-sag on vertical & overhead surfaces
Adheres and cures under adverse conditions (cold & damp)
Good strength retention after prolonged immersion in water
Very high strength permanent bonds
Tensile and compressive strengths superior to concrete
Excellent chemical resistance

AVAILABILITY

MEGAPOXY P1 is available in 4 Litre & 20 Litre kits. Shelf life of unopened kits is 2 years minimum. The product should be stored in a cool, dry place.

VIVACTIV ENGINEERING PTY. LTD.
A.C.N. 001 866 557
3 Sefton Road, Thornleigh, Sydney, N.S.W. 2120, Australia
Telephone: (02) 9871 3044 Fax: (02) 9875 3665 Fax International: +61-2-9875 3665
-2-

**PRE DUCT SPECIFICATION**

<table>
<thead>
<tr>
<th>Colour</th>
<th>PART &quot;A&quot;</th>
<th>PART &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>Consistency</td>
<td>Thixotropic paste</td>
<td>Thixotropic paste</td>
</tr>
<tr>
<td>Flash point</td>
<td>Above 130°C</td>
<td>Above 100°C</td>
</tr>
</tbody>
</table>

**SURFACE PREPARATION**

**METALS**: Metals should be grit blasted to clean surface. If this is not possible, mechanically abrade to clean bright metal surface and degrease by flooding the abraded surface with Megapoxy Degreaser. Wire brushing is not entirely satisfactory and gives minimal adhesion only.

**CONCRETE**: Concrete should be free from grease and oil. If necessary, clean with industrial heavy-duty degreaser. When clean, remove surface laitence. This is best done by mechanical abrasion such as scabbling, grit blasting or grinding. If this is not possible acid etching must be carried out. Mix concentrated hydrochloric acid with equal volume of water and spread at the rate of 0.5 litre per square metre of concrete surface. Allow to react for about 10 minutes and wash the area thoroughly and scrub with a stiff bristled broom to remove loose sand. Allow to dry for 24 hours. For maximum adhesion concrete should be dry.

**PAINTED SURFACES**: Steps should be taken to remove all paint.

- **Metals**: Good quality paint stripper should be used, followed by grit blasting.
- **Concrete**: The surface may be either flame-cleaned, or mechanically treated with a scutching tool. Complete the preparation by grinding or scabbling.

**PROCESSING DATA**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing Ratio</td>
<td>1 part &quot;A&quot; to 1 part &quot;B&quot; by volume</td>
</tr>
<tr>
<td>Mixing</td>
<td>Mix until uniform grey</td>
</tr>
<tr>
<td>Usable life at 25°C</td>
<td>60 minutes</td>
</tr>
<tr>
<td>Minimum cure time</td>
<td>24 Hours at 25°C</td>
</tr>
<tr>
<td>Full cure time</td>
<td>4 Days at 25°C</td>
</tr>
<tr>
<td>Minimum recommended application temperature</td>
<td>10°C</td>
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</table>
MIXING PRECAUTIONS

It is essential that the correct mixing ratio be used and that the part "A" and part "B" are thoroughly mixed together before use. Inaccuracies and poor mixing will result in lower physical properties of the cured system and, if the error is sufficiently large, the system may not cure satisfactorily and discolour on aging.

TYPICAL CURED PROPERTIES

<table>
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<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Tensile strength</td>
<td>45 MPa</td>
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<tr>
<td>Tensile shear strength</td>
<td>14 MPa</td>
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<tr>
<td>Compressive strength</td>
<td>80 MPa</td>
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<tr>
<td>Flexural strength</td>
<td>18 MPa</td>
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<tr>
<td>Modulus of elasticity</td>
<td>2,000 MPa</td>
</tr>
<tr>
<td>Maximum operating Temperature</td>
<td>80°C</td>
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<tr>
<td>Density</td>
<td>1.45 kg per litre</td>
</tr>
<tr>
<td>Dielectric strength 50Hz @ 25°C (Kv/cm)</td>
<td>190</td>
</tr>
</tbody>
</table>

CLEANING UP

To keep mixing implements and working tools clean use Megapoxy Thinners. Use disposable rubber gloves to protect hands and maintain proper industrial hygiene. For further details refer to Bulletin No. 100.
SCHEDULE

Attachment 2

Concrete baffle Drawing No. 2000-143-1
Fibreglass pods Drawing No. 2000-143-2B
Plan

Reinforce baffle with F81 mesh centrally placed

Stainless steel angles & fixings to hold baffle stable until wall-to-baffle epoxy has set

900 holes lateral positions as required

Baffle 65

2250 approximate exact dimensions to be obtained from tank measurements

Elevation

Notes: - Baffle is for use with tank shown on Everhard drawing M42G of 19-2-96 as approved.
- Concrete 32 MPA, 10mm max. aggregate
- Sulphate-resistant cement is recommended
- Attach fibreglass pods either side of baffle with stainless bolts thru holes in baffle as required

Hughes Beal & Wright Pty Ltd
Consulting Engineers, Civil, Structural & Geotechnical
12 Ovendale Street, Yeronga 4104 Brisbane
ACN 010588548
Phone (07) 38485524, 387811212 Fax (07) 38485666, 38781404

Jowa Group / Biocycle
Suite 4, 1095 Gold Coast Hwy, Palm Beach, QLD

Centre Baffle for Biocycle 6000 Litre Concrete Tank

Job No 2000-143-1
Date 8-11-2000
Drawn RMH
Concrete Centre Wall to be sealed to Concrete Tank Wall with mega-xxy as per attached specification.

Concrete Baffle 65mm thick

Precast Concrete Tank

Elevation

Connection to Baffle: Holes drilled thru fiberglass flanges. Neat size for bearing, to accept MB stainless Dynabolts, total 10 per pod. Use stainless washers under bolt heads.

Fiberglass pods are to be sealed to the centre wall with mega-xxy as per attached specification.

40% fiberglass, polyester isothianic resin

Hughes Beal & Wright Pty Ltd
Consulting Engineers, Civil, Structural & Geotechnical
12 Overend Street, Yeronga 4104 Brisbane ACN 010588548
Phone (07) 38485524, 38781212 Fax (07) 38485666, 38781404

Jowa Group / Biocycle
Suite 4, 1095 Gold Coast Hwy, Palm Beach, Qld.

Biocycle 6000 Litre Tank - Connection of Fiberglass Pods To Centre Baffle

Dept of Natural Resources & Mines
Commissioned Model Approval
Amendment No.: 1
Date of Issue: 6/11/2001
General Manager: [signature]
Water Industry Compliance

A 2-5-01 10 Dynabolts

Job No 2000-143-2X
Date 15-11-2000
Drawn RMH