



# **ERIC WRIGHT**

## **WATER**

PART OF THE **ERIC WRIGHT** GROUP

### **ERIC WRIGHT WATER**

#### **Project:**

**Corwen WwTW – WA246047**

#### **SITE WATER ABSTRACTION AND DISCHARGE MANAGEMENT PLAN**

#### **ENVIRONMENTAL INFORMATION**


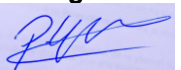
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## WATER MANAGEMENT DECLARATION

We the client and principal contractor will take all reasonable steps to ensure that;

- All water from the site is managed and treated to an appropriate level prior to discharge to the River Dee.

Signature	Date
Client Peter Gale Eric Wright water Framework Manager on behalf of Ian Jones Eric Wright Water Project Manager. 	02/04/25
ERIC WRIGHT WATER  Principal Contractor  Peter gale Eric Wright Water Framework Manager 	02/04/25

The above declaration must be signed by both client and principal contractor prior to the commencement of work on site

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## 1.0 PROJECT DESCRIPTION

### General Project Details

The address is: Corwen WwTW, Green Lane, Corwen, LL21 0DN

This project will limit the total phosphorus consent to <1.0mg/l which is to be introduced at Corwen WwTW. The current sewage works allows unscreened flows to treatment and is biologically overloaded. Various upgrades to the plant and the addition of a ferric dosing system will ensure compliance with this new consent.

These changes are detailed in the scope below.

#### Scope:

- New inlet works including a new screen pre-storm split, washpactor, flowmeter and associated ancillaries.

- New raised radial primary settlement tank (PST).

- Biofilter Media to be topped up by 0.2m on the two existing biofilter tanks - a total of 81m<sup>3</sup> of new media is required.

- The distributor arms require replacing on both existing biofilter tanks.

- New Ferric dosing tank and dosing pumps with associated ancillaries.

- New radial humus settlement tank (HST) including modification of existing chamber to split flow between the existing and proposed HSTs.

- The scrapers on the existing HST shall be replaced.

- 2 no. new sludge holding tanks for indigenous sludges including flanges for future mixers and decant return pumping station for both indigenous and imported decants.

- 1 no. new sludge holding tank for imported sludge, with associated Rotamat screen, tank feed pumping station, mixer and lockable screen bypass.

- New final effluent monitoring apparatus to provide online measurements of Total P / Ortho P, Total Iron, Suspended Solids and pH.

- New Permanent 24-hour composite Autosampler.

- New final effluent pumping station.

- New MCC Kiosk.

- New pipework between biofilter dosing tank and biofilters.

- New Potable and Final Effluent wash water package plants.

- Existing Primary Settlement Tank Refurbishment including new scum boards and stilling box

- Works will require dewatering (of groundwater) for construction of new radial humus settlement tank and discharge of the dewatered groundwater to the River Dee via silt settlement tanks.

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## 2.0 DEFINED ROLE HOLDERS

CLIENT	
Welsh Water	
Contact Name:	Adam Preston
Telephone Nr:	07909537434

PRINCIPAL CONTRACTOR	
Eric Wright Water Ltd	
Contact Name:	Ian Jones
Telephone Nr:	07741408352

## 3.0 KEY DATES

Project Start Date:	18 <sup>th</sup> November 2024
Project Completion Date:	December 2025
Project Value:	Circa £6 million

**4.0 CONFIRMATION OF MONITORING**

This plan will be monitored on a regular basis throughout the project to ensure that the management of water has progressed according to the plan. We will update the information on a continuing basis recording the details of the water management actions that took place.

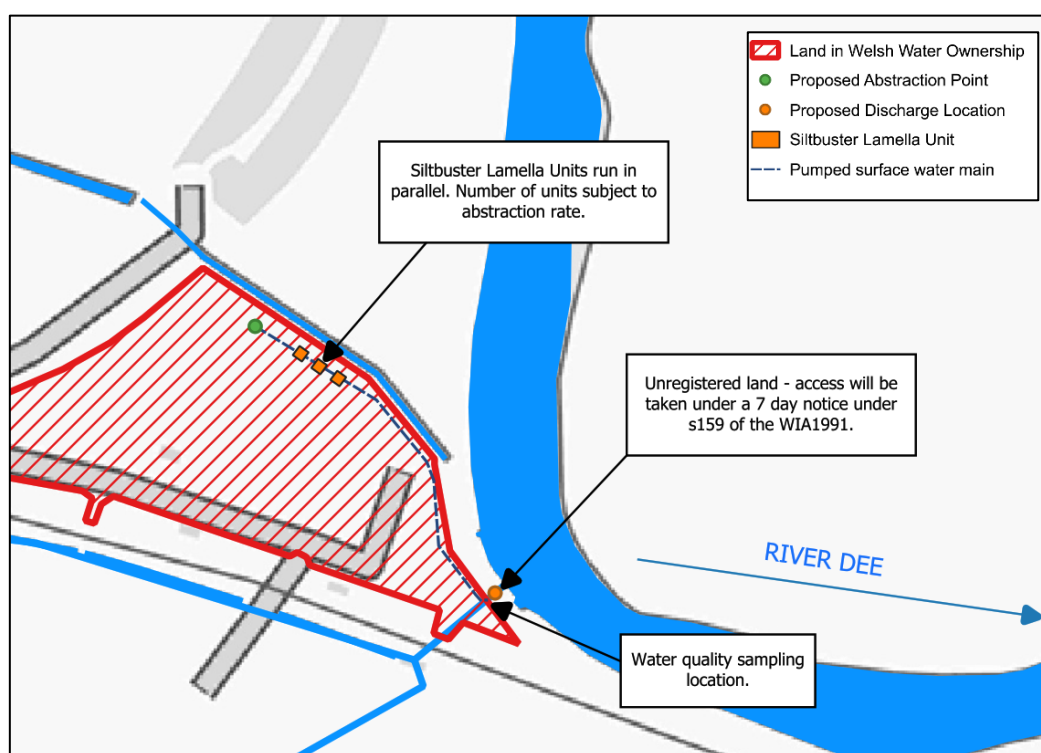
Monitoring Record			
Monitored by	Document Revision	Date	Comments
Paul Prior (EWW Site Manager)	A	03/02/25	Set Up
End of Project Signatures			Date
Client: Dwr Cymru Welsh Water. Adam Preston PM			02/04/25
Principal Contractor Ian Jones EWW Project Manager			02/04/25

## 5.0 SITE WATER MANAGEMENT PLAN STRUCTURE

Construction of the new radial humus settlement tank will require a 5m-6m deep excavation. Groundwater is present at approximately 1.2m below ground level (m.bgl) and as such dewatering will be required to facilitate construction. The dewatering process is detailed below:

- Groundwater to be pumped out of the humus settlement tank excavation through use of a submersible pump.
- Dewatered groundwater to be discharged to Siltbuster Lamella units which will reduce sediment content.
- Treated water from the Siltbuster Lamella units to be discharge to the River Dee via a sampling point.

The water management process is shown in Figure 1 and reproduced as Appendix A.



### Water Treatment System

Discharge of water from the site must be clear and silty / murky water should not be discharged from the site to the River Dee (a designated Special Area of Conservation).

To reduce the sediment content in the abstracted water, Siltbuster Lamella Clarifier units (settlement tanks) will be used. The Siltbuster Lamella units are modular in design and can be linked in parallel to accommodate larger flows. Each Lamella unit can typically accommodate an inflow volume of 50m<sup>3</sup> per hour. Figure 2 shows typical Lamella units laid in parallel. It is anticipated that flow from the site will be a maximum of 305.8m<sup>3</sup> per hour (assuming very porous geology and rapid groundwater inflow into the excavation).

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**Figure 2 – Siltbuster Lamella Units in Parallel**

The anticipated performance of the Lamella clarifier is dictated by the characteristics of the soil, i.e. the geology, and also the flowrate through the lamella. Typically, if 50m<sup>3</sup>/hr is passed through a HB50 clarifier, it will retain 95% of the particles down to 18µm and a proportion of the finer material. At lesser flowrates, an even greater proportion will be retained.

However, clay-sized particles are 1 to 2µm and do not typically settle out of suspension within a reasonable period of time and may pass through the lamella instead of being retained. Where clay is in suspension within the water being treated, coagulant and/or flocculant dosing up front will be required to condition the clay particles so that they rapidly settle. The coagulant and/or flocculant dosing involves dosing Polyaluminium chloride hydroxide sulphate upstream of the Siltbuster Lamella unit. Example chemical data safety sheets are included as Appendix B. The chemical data sheets will be updated subject to the chosen product.

The aim at Corwen WwTW is to achieve a suspended settlement content of between 30mg/l and 60mg/l for the dewatered groundwater. Figure 3 shows the water clarity for a range of suspended solid limits.

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**Figure 3 – Water Clarity at Varying Suspended Solid Limits**

Sediment buildup will need to be periodically removed from the Siltbuster Lamella Units and disposed of appropriately (see waste management plant for waste disposal procedures).

### Water Quality Monitoring

Water quality monitoring will be required for the duration of the dewatering. 2 methods of water quality monitoring will be undertaken:

- 1) Visual checks for water clarity at the discharge point (daily)
- 2) Water quality sampling to check for suspended solid content and PH on a weekly basis (for the duration of the dewatering) as to comply with the requirements of the Natural Resources Wales Environmental Permit.

Water quality sampling records should be recorded and stored beyond the duration of the project to demonstrate compliance with the Environmental Permit.

Where water quality testing shows that the quantity of suspended solids exceeds 60mg/l, then coagulant and/or flocculant dosing quantities will need to be reviewed.

### Responsibilities

The Principal Contractor (PC) is responsible for ensuring that suitable and adequate resources are allocated to enable the effective development of the water management plan.

The PC shall ensure that enough time and resource is allocated to ensure,

- (a) The effective coordination, planning and organisation of water management.
- (b) That a good management and coordination structure is in place.
- (c) That effective procedures for monitoring & communication are in place.
- (d) That suitable induction/further training needed is provided for all operatives.

The standard Site Water Management Plan Template comprises: -

- 1) Sheet 1 - Client Pre Construction Assessment
- 2) Sheet 2 - PC Construction Phase Assessment
- 3) Sheet 3 - Client Final assessment

Both the Client and the Principal Contractor are responsible for ensuring that the Water Management Plan is regularly reviewed and updated throughout the project.

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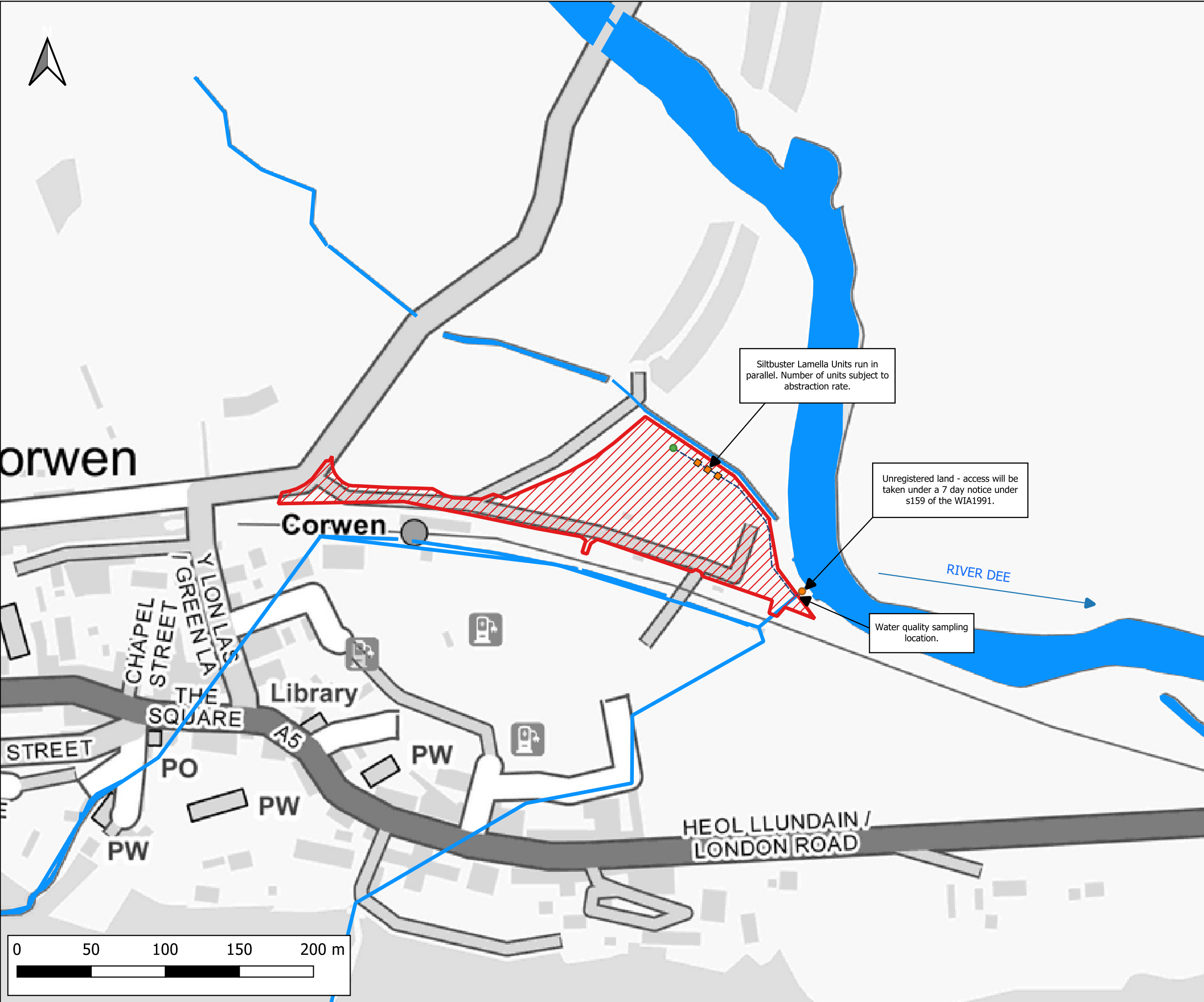
### ERIC WRIGHT Water

### APPENDIX A

### Site Water Management Layout Plan

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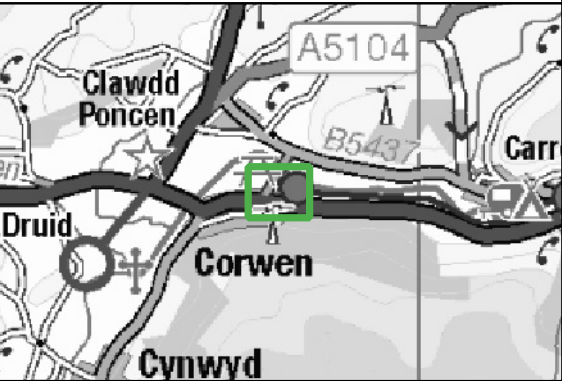
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Notes:  
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

**LEGEND**

- Land in Welsh Water Ownership
- Proposed Abstraction Point
- Proposed Discharge Location
- Siltbuster Lamella Unit
- Pumped surface water main



CLIENT:  
Eric Wright Water



SCHEME:  
Corwen WwTW - Phosphate Removal

PLOT TITLE:  
Location Plan

PLOT STATUS: FINAL  
DATE: 27-03-2025

DRAWN: JP  
CHECKED: AW  
APPROVED: NJ  
PLOT SCALE AT A3: 1:2500

PLOT NAME: 15725\_Location\_Plan  
REVISION: -



# ERIC WRIGHT

## WATER

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**ERIC WRIGHT Water**

### **APPENDIX B**

#### **Chemical Dosing Safety Sheets**

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## Material Safety Data Sheet

Page 1 of 5

### Section 1: Identification of Substance/mixture and of the company undertaking

#### 1.1: Product Identifier

Product Name    AQUATREAT 2084

#### 1.2: Relevant Identified use of substance/mixture and uses advised against

#### 1.3: Details of the Supplier of the safety data sheet

Company Name: Aquatreat

Albany House  
North Dock  
Llanelli  
Carmarthenshire  
SA15 2LF

Telephone: 01554 775236

Fax: 01554 772253

E-mail: [enquiries@aquatreat.co.uk](mailto:enquiries@aquatreat.co.uk)

Website: [www.aquatreat.co.uk](http://www.aquatreat.co.uk)

#### 1.4: Emergency Telephone Numbers:

Emergency Telephone: 0333 333 9499

### Section 2: Hazards Identification

#### 2.1: Classification of substance/mixture according to Regulation (EC) No 1272/2008

Classification under CLP:        NC            Not Classified

Additional Information:

#### 2.2: Label Elements: Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]

Label elements under CLP:        NC            Not Classified as Hazardous

Signal Words:

Hazard Pictograms:

Precautionary Statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

#### 2.3: Other Hazards

## Section 3: Composition information on hazardous ingredients

Hydrocarbons, C12 - C15, isoalkanes, cyclics &lt;2% aromatics

EINECS	CAS No	Classification according to Regulation (EC) 1272:2008	Percent
920-107-4		H302; ASP Tox.1	20 - 45

Isotridecanol, ethoxylated

EINECS	CAS No	Classification according to Regulation (EC) 1272:2008	Percent
Polymer		H318; Eye Dam.1, H302; Acute Tox.4	<5

## Section 4: First Aid Measures

## 4.1: Description of First Aid measures

- Skin Contact:** Wash off immediately with soap and plenty of water and remove any contaminated clothing. If persistent irritation occurs, seek medical advice
- Eye Contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Alternatively, rinse immediately with Diphoterine. Get prompt medical attention
- Ingestion:** Rinse mouth with water. DO NOT induce vomiting. Seek medical attention immediately
- Inhalation:** Move to fresh air. No special first aid measures required.

## 4.2: Most important symptoms and effects both acute and delayed

- Skin Contact:** None under normal use
- Eye Contact:** None under normal use
- Ingestion:** None under normal use
- Inhalation:** None under normal use

## 4.3: Indication of any immediate medical treatment and special treatment required

None reasonably foreseeable.

## Section 5: Fire fighting measures

## 5.1: Extinguishing media

Use fire extinguishers appropriate to the surrounding fire

## Unsuitable Media

None

## 5.2: Special hazards arising from the substance/mixture

Oxides of Carbon and Nitrogen. Hydrogen cyanide may be produced as a result of combustion in an oxygen deficient atmosphere.

## 5.3: Advice for firefighters

Wear self contained breathing apparatus and protective clothing. Spills become extremely slippery when wet

**Section 6: Accidental Release Measures****6.1: Personal precautions, protective equipment and emergency procedures**

Wear appropriate PPE - See section 8

**6.2: Environmental precautions**

Do not allow spills to enter surface water drains and watercourses

**6.3: Methods and Materials for containment and clean up**

Soak up with inert material. Sweep and shovel into suitable closed containers and arrange disposal

**6.4: References to other sections****Section 7.0: Handling and Storage****7.1: Precautions for safe handling**

Avoid contact with skin and eyes. Renders surfaces extremely slippery when spilled. Do not eat, drink or smoke when using this product

**7.2: Conditions for safe storage.**

Keep away from heat and sources of ignition. Do not allow the product to freeze. Incompatible with oxidising agents

**7.4: Specific End Use(s)****Section 8: Exposure controls/Personal Protection****8.1: Control Parameters**

None known

**8 Hour TWA:**

**15MinSTEL:**

**8.2: Exposure Controls**

Engineering Measures Use local exhaust ventilation if misting occurs

Respiratory Protection respiratory protective equipment is not normally required under normal conditions of use

Hand Protection PVC or other plastic material gloves

Eye Protection Safety glasses with side shields

Skin Protection Coveralls or chemical apron

**Section 9.0: Physical and Chemical Properties****9.1: Information on basic physical and chemical properties**

State: Liquid

Colour: Milky

Odour: Aliphatic

Specific Gravity: 1.05

pH: 5 - 8 @5g/l

**9.2: Other Information**



## Section 10: Stability and Reactivity

## 10.1: Reactivity

Stable under recommended conditions of storage and use

## 10.2: Chemical Stability

Stable under recommended conditions of storage and use

## 10.3: Possibility of Hazardous Reactions

None known

## 10.4: Conditions to Avoid

Heat, Sunlight and frost

## 10.5: Incompatible Materials

Oxidising Agents

## 10.6: Hazardous Decomposition Products

Oxides of Carbon and Nitrogen

## Section 11: Toxicological Information

Aquatreat 2084

Dermal	Rat	LD50	>5000 mg/kg (estimated)
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Aquatreat 2084

Oral	Rat	LD50	>5000 mg/kg (estimated)
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## Section 12: Ecological Information

## 12.1: Toxicity

LC50/Oncorhynchus mykiss/ 96hours>100mg/l (estimated), EC50/Daphnia Magna/48 hours>100mg/l (estimated), IC50/Algae/72 hours>100mg/l(estimated)

## 12.2: Persistence and Biodegradable

Not readily biodegradable

## 12.3: Bioaccumulative Potential

This product is not expected to bioaccumulate

## 12.4: Mobility in Soil

No data available

## 12.5: Results of PBT and vPvB Assessment

Not according to the criteria of Annex XIII of REACH

## 12.6: Other adverse effects

None

## Section 13: Disposal Information

Dispose of waste in accordance with local or national regulations



**Section 14: Transport Information**

UN Number	<input type="text"/>		
Shipping Name	<input type="text" value="Not classified as hazardous for transport"/>		
Transport Class	<input type="text"/>		
Packing Group	<input type="text"/>		
Environment Hazard	<input type="text"/>		
Special Precautions	<input type="text"/>		
Tunnel Code	<input type="text"/>	Transport Category	<input type="text"/>

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

**Section 15: Regulatory Information**

15.1: Safety, Health and Environmental regulations/legislation specific for the substance/mixture

15.2: Chemical safety assessment

**Section 16: Other information**

The above information is based on our present knowledge of the product at the time of publication. It is given in good faith, no warranty is implied as to the quality or specification of the product. Information contained in this data does not constitute an assessment of workplace risks. The user must satisfy himself that the product is entirely suitable for their purpose

*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006***Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: **MPAC100**

**1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name : Polyaluminium chloride hydroxide sulphate (PAC)  
CAS-No. : 39290-78-3  
EC-No. : 254-400-7

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use of the Substance/Mixture : At this time we do not yet have information on identified uses.  
They will be included in this safety data sheet when available.

Recommended restrictions on use : At that time we do not yet have information on use restrictions.  
They will be included in this safety data sheet when available.

**1.3. Details of the supplier of the safety data sheet**

Company : Brenntag UK & Ireland  
Albion House, Rawdon Park  
GB LS19 7XX Leeds Yeadon  
Telephone : 0113 3879 200  
Telefax : 0113 3879 280  
E-mail address : msds@brenntag.co.uk

**1.4. Emergency telephone number**

Emergency telephone number : Emergency only telephone number (open 24 hours):  
01865 407333 (N.C.E.C. Culham)

**2. Hazards identification****2.1. Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

REGULATION (EC) No 1272/2008			
Hazard class	Hazard category	Target Organs	Hazard statements

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

**Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: MPAC100

Hazard class	Hazard category	Target Organs	Hazard statements
Skin corrosion/irritation	Category 2		H315
Serious eye damage/eye irritation	Category 2		H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Directive 67/548/EEC or 1999/45/EC	
Hazard symbol / Category of danger	Risk phrases
Irritant (Xi)	R36/38

For the full text of the R-phrases mentioned in this Section, see Section 16.

**Most important adverse effects**

- Human Health : See section 11 for toxicological information.  
No further information available.
- Physical and chemical hazards : See section 9 for physicochemical information.  
No further information available.
- Potential environmental effects : See section 12 for environmental information.  
No further information available.

**2.2. Label elements****Labelling according to Regulation (EC) No 1272/2008**

Hazard symbols :



Signal word :

Warning

Hazard statements :

H315  
H319

Causes skin irritation.  
Causes serious eye irritation.

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: **MPAC100**

**Precautionary statements**

General : P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/  
eye protection/ face protection.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and  
water.  
P332 + P313 If skin irritation occurs: Get medical advice/  
attention.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with  
water for several minutes. Remove contact  
lenses, if present and easy to do. Continue  
rinsing.  
P337 + P313 If eye irritation persists: Get medical advice/  
attention.

**Additional Labelling:**

EUH210 Safety data sheet available on request.

**Hazardous components which must be listed on the label:**

II • Aluminum chloride hydroxide sulfate

**2.3. Other hazards**

No other information is available.

**3. Composition/information on ingredients****3.1. Substances**

Chemical nature : Aqueous solution

Chemical Name	Identification Number	Amount [%]
Aluminum chloride hydroxide sulfate	CAS-No. : 39290-78-3	< 100
	EC-No. : 254-400-7	

*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006***Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: **MPAC100**

**4. First aid measures****4.1 Description of first aid measures**

- General advice : Take off all contaminated clothing immediately.
- In case of skin contact : Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.

**4.2 Most important symptoms and effects, both acute and delayed**

- Symptoms : No further information available.
- Effects : No further information available.

**4.3 Indication of immediate medical attention and special treatment needed**

- Treatment : Treat symptomatically.  
No further information available.

**5. Fire-fighting measures****5.1. Extinguishing media**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : No information available.

**5.2. Special hazards arising from the substance or mixture**

- Specific hazards during fire : The product itself does not burn.

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

### ***Polyaluminium chloride hydroxide sulphate (PAC)***

Version 5.0  
Revision Date 2010/12/03

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MSDS code: MPAC100

fighting

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### 5.3. Advice for firefighters

Special protective equipment for fire-fighters : Wear self contained breathing apparatus for fire fighting if necessary.

Further information : No further information available.

## 6. Accidental release measures

## 6.1 Personal precautions, protective equipment and emergency procedures

**Personal precautions** : Wear personal protective equipment. Avoid contact with skin and eyes.

## 6.2 Environmental precautions

Environmental precautions : No special precautions required.

### 6.3 Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders). Treat recovered material as described in the section "Disposal considerations". Flush away residuals with plenty of water.
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## 6.4 Reference to other sections

For personal protection see section 8.

## 7. Handling and storage

### 7.1 Precautions for safe handling

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: **MPAC100**

Advice on safe handling : Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.  
Hygiene measures : Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feedingstuffs. When using do not eat or drink.

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Keep in an area equipped with acid resistant flooring. Use acid resistant materials only. Use chloride resistant materials only. Keep container tightly closed.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on common storage : Store separate from acidic- and chloride sensitive materials.

German storage class : 8B: Non-combustible substances, corrosive

Storage temperature : 0 - 30 °C

**7.3 Specific end uses**

Specific use(s) : No information available.

**8. Exposure controls/personal protection****8.1. Control parameters**

**Component: Aluminum chloride hydroxide sulfate**

**CAS-No.**  
**39290-78-3**

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

**Polyaluminium chloride hydroxide sulphate (PAC)**

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
MSDS code: MPAC100

**Other OELs**

Regulatory Basis	: UK. EH40 Workplace Exposure Limits (WELs)
Regulatory List	: EH40 WEL
Value type	: Time Weighted Average (TWA):
Value	: 2 mg/m <sup>3</sup>

**8.2. Exposure controls****Engineering measures**

Refer to protective measures listed in sections 7 and 8.

**Personal protective equipment***Respiratory protection*

Advice : Breathing apparatus needed only when aerosol or mist is formed.

*Hand protection*

Advice : Neoprene gloves  
Protective gloves should be replaced at first signs of wear.

Glove thickness : 0.75 mm

*Eye protection*

Advice : Tightly fitting safety goggles

*Skin and body protection*

Advice : Protective suit

**Environmental exposure controls**

General advice : No special precautions required.

**9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**



*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)***

Version 5.0  
Revision Date 2010/12/03

Print Date 2010/12/03  
**MSDS code: MPAC100**

Form	: liquid
Colour	: clear to slight cloudy
Odour	: odourless
Odour Threshold	: Currently we do not have any Information from our supplier about this.
pH	: 2 - 3 20 °C
Freezing point	: -12 °C
Boiling point	: > 100 °C
Flash point	: not applicable
Evaporation rate	: Currently we do not have any Information from our supplier about this.
Flammability (solid, gas)	: Currently we do not have any Information from our supplier about this.
Upper explosion limit	: Currently we do not have any Information from our supplier about this.
Lower explosion limit	: Currently we do not have any Information from our supplier about this.
Vapour pressure	: Currently we do not have any Information from our supplier about this.
Relative vapour density	: Currently we do not have any Information from our supplier about this.
Density	: ca. 1.192 - 1.3 g/cm <sup>3</sup> 20 °C
Water solubility	: completely soluble
Partition coefficient: n-octanol/water	: Currently we do not have any Information from our supplier about this.
Ignition temperature	: Currently we do not have any Information from our supplier about this.
Thermal decomposition	: Currently we do not have any Information from our supplier about this.

*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006***Polyaluminium chloride hydroxide sulphate (PAC)**

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Print Date 2010/12/03  
**MSDS code: MPAC100**

Viscosity, kinematic	: Currently we do not have any Information from our supplier about this.
Explosive properties	: Currently we do not have any Information from our supplier about this.
Oxidizing properties	: Currently we do not have any Information from our supplier about this.

**9.2 Other information**

No further information available.

**10. Stability and reactivity****10.1. Reactivity**

Advice : No information available.

**10.2. Chemical stability**

Advice : No decomposition if stored and applied as directed.  
No further information available.

**10.3. Possibility of hazardous reactions**

Hazardous reactions : No information available.

**10.4. Conditions to avoid**

Conditions to avoid : Extremes of temperature and direct sunlight.

**10.5. Incompatible materials**

Materials to avoid : Oxidizing agents  
Bases

**10.6. Hazardous decomposition products**

Hazardous decomposition products : Oxygen  
hydrogen chloride

**11. Toxicological information****11.1. Information on toxicological effects**

## SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

**Polyaluminium chloride hydroxide sulphate (PAC)**Version 5.0  
Revision Date 2010/12/03Print Date 2010/12/03  
MSDS code: MPAC100

<b>Product:</b>		<b>CAS-No.</b> <b>39290-78-3</b>
<b>Acute toxicity</b>		
<b>Oral</b>		
Value type	:	LD50
Value	:	> 5,000 mg/kg
Species	:	rat
<b>Irritation</b>		
<b>Skin</b>		
Remarks	:	Irritating to skin.
<b>Eyes</b>		
Remarks	:	Irritating to eyes.
<b>Sensitisation</b>		
Remarks	:	No sensitizing effect known.

**12. Ecological information****12.1. Toxicity**

<b>Component: Aluminum chloride hydroxide sulfate</b>		<b>CAS-No.</b> <b>39290-78-3</b>
<b>Acute toxicity</b>		
<b>Fish</b>		
Species	:	Leuciscus idus (Golden orfe)
Exposure Time	:	48 h
Value type	:	LC50

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||Value : ca. 1,500 mg/l

**12.2. Persistence and degradability****12.3. Bioaccumulative potential****12.4. Mobility in soil****12.5. Results of PBT and vPvB assessment****12.6. Other adverse effects**

<b>Product:</b>	<b>CAS-No.</b> <b>39290-78-3</b>
<b>Additional ecological information</b>	

Remarks : Solutions with low pH-value must be neutralized before discharge.  
Ecological injuries are not known or expected under normal use.

**13. Disposal considerations****13.1. Waste treatment methods**

Product : Can be disposed as waste water, when in compliance with local regulations.

Contaminated packaging : Empty remaining contents. Rinse with plenty of water. Store containers and offer for recycling of material when in accordance with the local regulations.

European Waste Catalogue Number : No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

**14. Transport information****14.1. UN number**

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**14.2. UN proper shipping name**

ADR : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Aluminum chloride hydroxide sulfate)

RID : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Aluminum chloride hydroxide sulfate)

IMDG : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
(Aluminum chloride hydroxide sulfate)

**14.3. Transport hazard class(es)**

ADR-Class : 8  
(Labels; Classification Code; Hazard  
identification No; Tunnel restriction code) 8; C1; 80; (E)

RID-Class : 8  
(Labels; Classification Code; Hazard  
identification No) 8; C1; 80

IMDG-Class : 8  
(Labels; EmS) 8; F-A, S-B

**14.4. Packaging group**

ADR : III

RID : III

IMDG : III

**14.5. Environmental hazards**

Labeling according to 5.2.1.8 ADR : no

Labeling according to 5.2.1.8 RID : no

Labeling according to 5.2.1.6.3 IMDG : no

Classification as environmentally  
hazardous according to 2.9.3 IMDG : no

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**14.6. Special precautions for user**

Not applicable.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

IMDG : Not applicable.

**15. Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****15.2. Chemical Safety Assessment**

Currently we do not have any Information from our supplier about this.

**16. Other information****Full text of R-phrases referred to under sections 2 and 3.**

R36/38 Irritating to eyes and skin.

**Full text of H-Statements referred to under sections 2 and 3.**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

**Further information**

Other information : The information provided in this Safety Data Sheet is correct to

*SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006****Polyaluminium chloride hydroxide sulphate (PAC)***

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**MSDS code: MPAC100**

the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use.

|| Indicates updated section.