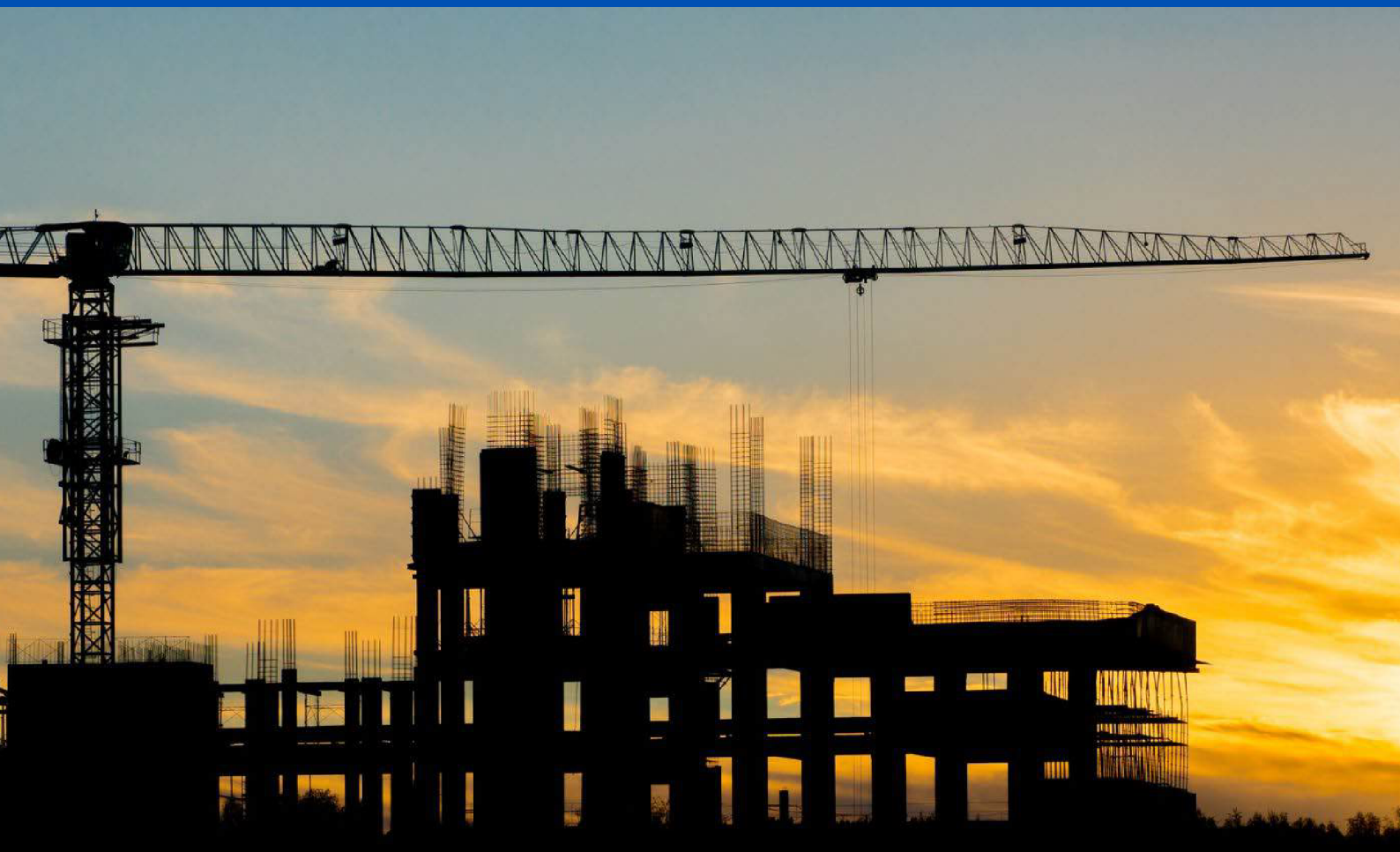
Construction Surface Water Management Plan

Cadeby Pipe Factory

FP McCann

14 October 2026



Envireau

Prepared For: FP McCann

Date Issued: 14/10/2026

Project Code: 3491675

Revision: REV02

Authors

	Name	Signed
Prepared by	MT	[redacted]
Checked by	LC	
Approved by	LC	

Revision History

	Details	Prepared by	Checked by	Approved by	Issue Date
REV01	Draft	MT	LC	LC	01/10/2026
REV01	Final	MT	LC	LC	14/10/2026

© Envireau Ltd. 2026.

Registered in England & Wales No. 6647619. Registered office: Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR

Any report provided by Envireau Ltd. is for the client's use and may be reproduced by the client for internal use. The report must not be issued to third parties without the express written consent of Envireau Ltd. If the report is released to any third party, Envireau Ltd will not accept responsibility or liability of any nature to that third party to whom the report (or part thereof) is released. Moreover, Envireau Ltd will accept no liability for damage or loss as a result of any report being made known to, or relied upon by, a third party, unless expressly agreed with Envireau Ltd in writing.

Contents

1 Introduction 1

1.1 Background 1

1.2 Scope of Work 1

1.3 Objectives 1

1.4 Data Sources 2

1.5 Service Limitations 2

1.6 Confidentiality 2

2 Site Description 3

2.1 Setting 3

2.3 Topography 3

2.4 Watercourses and Waterbodies 3

2.5 Flood Risk 3

2.6 Statutory and Non-Statutory Designations 5

2.7 Ground Conditions 5

3 Proposed Development 6

3.1 Description 6

3.2 Construction Status 6

3.3 Drainage Systems 6

4 Silt Pollution Risk Assessment 9

4.1 Risk Methodology 9

4.2 Sources 9

4.3 Pathways 9

4.4 Receptors 10

5 Surface Water Management During Construction 12

5.1 Introduction 12

5.2 Roles and Responsibilities 12

5.3 Construction Legislation and Guidance 13

5.4 General Silt Control Measures 14

5.5 Site-Specific Silt Control Measures 1

6 Monitoring 2

6.1 Monitoring Points 2

6.2 Visual Inspection 2

6.3 Records 3

7 Emergency Procedure 4

7.1 Emergency Response Plan 4

7.2 Extreme Weather 4

Figures

Figure 1 Site Setting 4
Figure 2 Construction Surface Water Management Plan 1

Tables

Table 1 Silt Pollution Risk Rating Methodology 9
Table 2 Silt Pollution Risk Assessment 11
Table 3 Site-Specific Silt Control Measures 1
Table 4 Extreme Weather Action Plan 5

Appendices

Appendix A Service Constraints and Limitations
Appendix B Development Layout Plan
Appendix C Drainage Layout Plan
Appendix D Site Topographical Survey
Appendix E Installation Guides, Example Manufacturers and Product Sheets
Appendix F Good Practice Silt Control Examples
Appendix G Inspection and Monitoring Proformas

1 Introduction

1.1 Background

FP McCann are in the process of gaining planning permission to construct a plastic pipe manufacturing facility on land adjoining their current factory facilities at Brascote Lane, Cadeby, Market Bosworth, Leicestershire, CV13 0BB (the Site).

1.2 Scope of Work

Envireau was commissioned by Heatons, on behalf of FP McCann to prepare a Construction Surface Water Management Plan (CSWMP) for the Site. This CSWMP has been prepared in accordance with best practice and relevant environmental legislation.

FP McCann has statutory duty to ensure that surface water quality and quantity is managed throughout the construction (including site clearance) and prevent impact off-site. This CSWMP sets out the measures to be implemented during the construction phase(s) of the development to manage surface water runoff and prevent pollution and increased risk of flooding to the local environment.

This CSWMP is intended as a 'live document', to be continually reviewed and updated as the development progresses. Envireau may provide support with supplementary site visit audits or attendance at meetings ahead of keys stages of the development in relation to silt management.

1.3 Objectives

The objectives of this CSWMP are to:

- Identify and define the physical, hydrological characteristics and environmental setting of the Site;
- Identify potential pollution sources and potential receptors of pollution from the Site;
- Qualitatively assess the implications of any potential environmental risks, liabilities and constraints associated with the management of surface water;
- Define appropriate measures to prevent and control potential for pollution arising from the Site, ensuring that surface water quality, and quantity, is managed throughout the construction phase with an emphasis on source control for runoff, soil erosion and silt mobilisation; and
- Advise on surface water monitoring and emergency mitigation measures, should these be required.

1.4 Data Sources

The following sources have been used to inform this CSWMP:

- Proposed Pipe Factory Site Layout Plan (Ref No. KD.FPPF.1.D.003)
- Archaeological Survey by TVAS North Midlands
- Ordnance Survey 1:25,000 scale mapping;
- Flood Map for Planning (Rivers, Sea and Surface Water);
- MAGIC Map database for sensitive environmental sites and land designations;
- British Geological Survey (BGS) Onshore GeoIndex;

1.5 Service Limitations

This CSWMP is subject to the service constraints and limitations contained in **Appendix A.**

1.6 Confidentiality

Envireau has prepared this report for the purpose of discharging planning condition 11 for planning application no. 25/00306/FUL; and for the use by FP McCann; and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed during construction of the development. Excluding the local planning authority (Hinkley and Bosworth District Council) for the purpose of discharging the planning condition, should any third party wish to use or rely upon the contents of the report, written approval must be sought from Envireau; a charge may be levied against such approval.

2 Site Description

2.1 Setting

The FP McCann concrete precast facility, rooftile facility and storage areas are situated in a rural area of Leicestershire approximately 200 m east of Cadeby Village and 1.2 km southwest of Newbold Verdon (see **Figure 1**). The National Grid Reference (NGR) for the approximate centre of the existing site is SK 43096 02386 covering an area of approximately 20.7 ha.

The planning application includes the development of a plastic pipe factory facility with associated storage areas on adjacent agricultural land, access to the plastic pipe factory via access roads on existing hardstanding areas, and biodiversity improvements to a previously restored parcel of land. The planning application boundary includes the existing hardstanding car park and office area; however, no alterations are proposed to this area. The plastic pipe factory facility and associated storage areas are centred on NGR SK 43197 02143 and lie adjacent to and to the west of the existing site.

The Site comprises three fields currently used for livestock grazing. For clarity, the fields are herein referred to as the 'Western', 'Central', and 'Eastern' fields. Two of the three fields within the Site (western and central) have previously been subject to sand and gravel extraction by Tarmac as part of Cadeby Quarry. The fields were restored to agricultural land in 2011. The aftercare period for both fields ended in 2016, ending their relationship with mineral activities.

2.3 Topography

The Site predominately slopes to the southeast with elevations ranging from 130 m AOD in the far northern corner to 112 m AOD at the southern boundary. The topographical survey plan for the Site is presented in Appendix B.

The Western field where historic quarrying took place and biodiversity improvements are to take place, is a part infilled quarry. Infilling material has generated earth grassed slopes

2.4 Watercourses and Waterbodies

The Site is located within the headwaters of the Thurlaston Brook catchment. Thurlaston Brook is shown on Ordnance Survey mapping to originate approximately 2 km northeast of the Site and flows westwards past Newbold Verdon before turning south and flowing past the Site. Thurlaston Brook joins the River Soar downstream of the Site. Thurlaston Brook is at an elevation of approximately 110 m AOD.

2.5 Flood Risk

The Site is shown to be situated wholly within Flood Zone 1 (Low probability of flooding from rivers) and at low risk of surface water flooding (Environment Agency, 2026). The Historic Flood Map (Environment Agency, 2026) and Recorded Flood Outlines (Environment Agency, 2026) indicate that the Site has not been subject to flooding in the past.

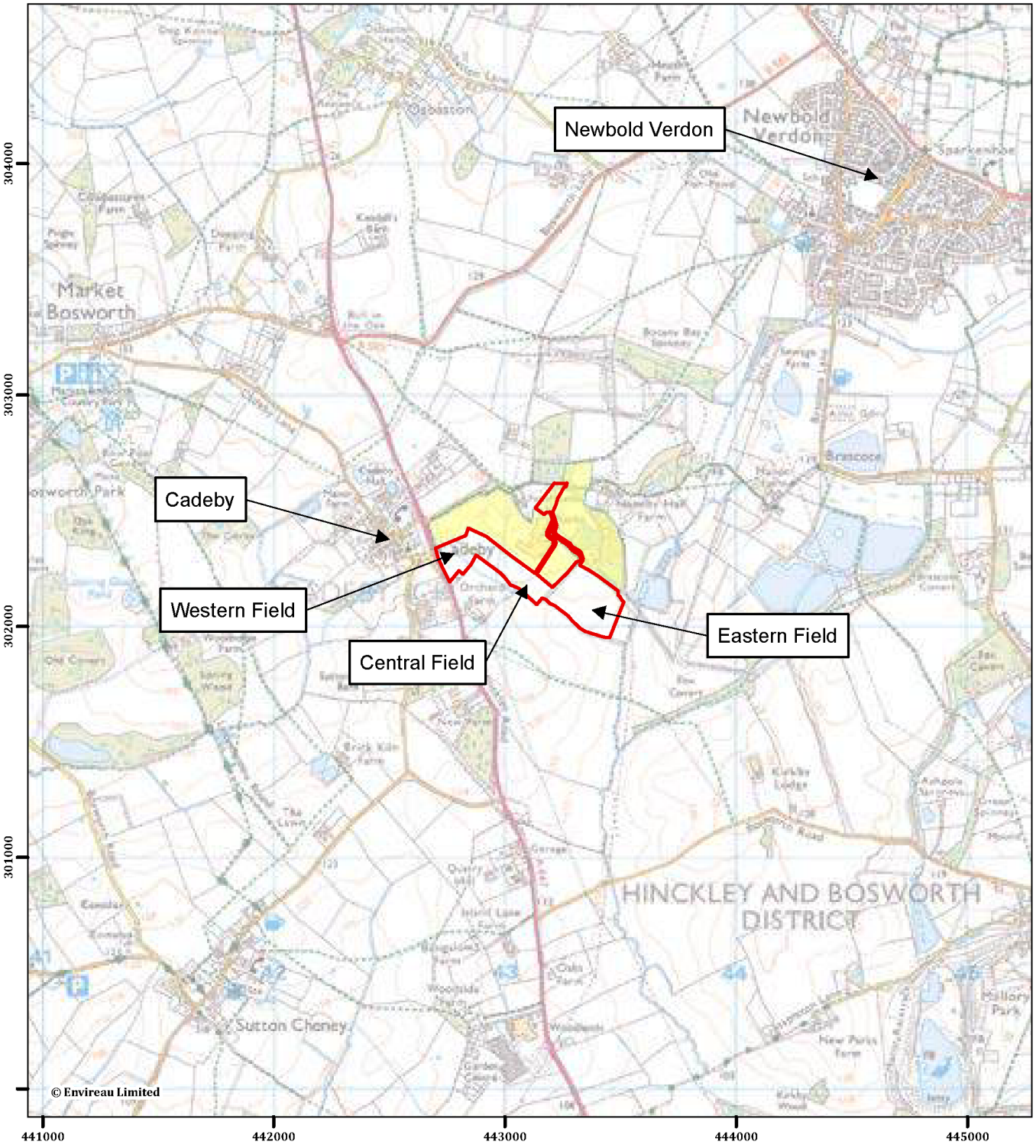


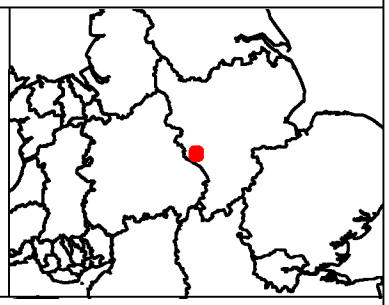
Figure 1: Site Location and Setting

Cadeby, Leicestershire

Application Site Boundary

Existing Site Area

Notes:



0 250 500 750 1,000 Meters

Scale: 1:25,000 at A4

01 October 2026

NGR: 443,107 E / 302,285 N

Project No.	3491036
Client:	FP McCann
Drawn by:	MT/LC
Ref:	Site Setting and Location

envireau WATER

© Crown Copyright All rights reserved. Licence number: 100050002.

2.6 Statutory and Non-Statutory Designations

The Site is not subject to any specific statutory or non-statutory ecological or landscape designations such as Special Protection Area (SPA), Area of Outstanding Natural Beauty (AONB) or Site of Special Scientific Interest (SSSI) (Natural England, 2026). The Site is located within a Nitrate Vulnerable Zone.

2.7 Ground Conditions

2.7.1 Geology and Hydrogeology

According to British Geological Survey (BGS) 1:50,000 scale mapping (British Geological Survey, 2026), the Site is underlain by bedrock deposits of the Triassic Gunthorpe Member (Mudstone) being part of the Sidmouth Mudstone Formation, which are overlain by superficial deposits of Glaciofluvial sands and gravels.

The Sidmouth Mudstone Formation is classified as a "Secondary B" aquifer which is predominantly lower permeability strata which may in part have the ability to store and yield limited amounts of groundwater by virtue of localised features such as fissures, thin permeable horizons and weathering (Environment Agency, 2025).

The Site is not situated in a Source Protection Zone for groundwater (Natural England, 2025).

2.7.2 Natural Soils

The natural soil type at the Site has been identified using the Soilscapes interactive soil type mapping (Cranfield Soil and Agrifood Institute, 2025). The majority of the soils are classified as 'Loamy soils with naturally high groundwater' with roughly 10% of the Site, towards the south, having a natural soil type of 'Slightly acid loamy and clayey soils with impeded drainage'. An archaeological report complete by TVAS (TVAS North Midlands, 2025) also describes the soils within the eastern portion of the site as 'sandy-clay'.

2.7.3 Contamination and Environmental Risk

The easter field and the southern sections of the central field consist of greenfield land. Ther are no proposed works within the western field. The remaining area of the Site has been infilled with inert material and as such no contamination is expected.

3 Proposed Development

3.1 Description

The Site comprises of access road; the Western field; Central field and Eastern field. The total Application Site Boundary equates to 12.1 Ha. The development layout plan is shown in Appendix C.

The access roads to the new proposed area are a reconfiguration of existing access roads and hardstanding areas, allowing safer and more efficient access and egress to the new development area and existing areas. This portion of the Application Site Boundary equates to an area of 0.43 Ha.

The Western field covers an area of circa. 1.7 Ha and will remain as a greenfield area but will include biodiversity enhancements. This will include enhancements to ditches, grassland and hedgerows. No changes to the topography of the land are proposed and the drainage from this area will remain independent to the proposed new building and hardstanding area.

The Central field will comprise of storage areas for the plastic pipe facility along with a through road from the plastic pipe facility to the exit access road. No changes to land gradients are proposed, although some small landforming will be required on the southern boundary.

The Eastern field is the proposed location for the plastic pipe facility. This will be the main building and will include a new access road and plastic pipe storage areas. Regrading of the Eastern field will be required to facilitate the development. This is proposed to be a "neutral" cut and fill regrading and will not include importing fill material.

The Central and Eastern fields will be positively drained, covering an area of ~9.97 ha, which will be attenuated on-site with a restricted outflow to the local drainage channel at the Qbar greenfield runoff rate.

3.2 Construction Status

The Site is currently undeveloped. The Site will be developed through a series of phases, starting with the construction of temporary access tracks, the attenuation basins and soil stripping. Next the drainage features will be constructed as well as the permanent access tracks and buildings foundations. The final step will be the completion of the hardstanding and the construction of the factory building.

3.3 Drainage Systems

The drainage layout plan for the development is presented in Appendix C and summarised in the sub-sections below.

3.4 Surface Water

No changes are proposed to the Western Field drainage, and this will be independent of the Central field and Eastern field drainage system. No runoff from the Central field will enter into the Western field. The Central and Eastern fields will be positively drained, covering an area of ~9.97 ha.

The Central field drainage system will comprise a boundary swale system. The swale system will increase in size along the boundary commensurate with the estimated runoff rates. The swale depths will start at 0.3 m, progressively increasing to a depth of 1 m. To maximise rainfall storage and hold back flows, the swales will have flow restrictors in the form of weirs at key locations and two new attenuation basins are proposed in the southern portion of the Central field.

The second (final) Central field attenuation basin will require some minor land forming on the southern boundary to form the southern rim of the basin to a level of 122.91m AOD, a rise ranging from 0.3 to 1.0 m. The outflow from the final attenuation basin will be to a traditional piped drainage system that will feed into the Eastern field drainage. The sizing of the piped drainage provides the necessary restriction to maximise storage in the basin. Pipe drainage sizes are provided in modelling results provided in Appendix C.

The Eastern field drainage will consist of a concrete capture channel to the northeast and northwest of the new building to prevent the ingress of runoff. The concrete channel will feed into a piped drainage system that discharges to a series of cascading attenuation basins.

The cascading basins will be interconnected via pipes and will run adjacent to the southwestern field boundary, feeding into a final attenuation basin in the southern section of the Eastern field area. The basins have been sized and designed to have a minimum 4 m standoff from the existing local drainage channel that runs along the boundary.

It is proposed that the new drainage is completely independent of the local drainage channel other than where the Site drainage discharges to it in the southern corner of the Site. The outfall to the watercourse will be via a shallow headwall oriented at an angle to allow flow into the watercourse in line with the flow direction. The watercourse is relatively shallow at the discharge location being ~1 m from bed to top of bank level, with the lowest slope elevation of ~112.0m AOD. The outfall from the final basin will be restricted to 21.1 l/s (Qbar) via a 0.077 m orifice plate.

To facilitate access from the Eastern field to the Central field, a new access road will need to be incorporated that crosses the local drainage channel. It is proposed that the local drainage channel is culverted, and this will be commensurate with the dimensions and capacity of the channel. In relation to expected flows the watercourse receives, this will provide an oversized culvert. The access road will also encompass the drainage pipe run from the Central field to the Eastern field.

Runoff from hardstanding areas in the Eastern field that is not captured by the new building drainage will be captured by a new swale on the eastern boundary, sized accordingly to cumulative runoff area or direct to the cascading and final basin system.

To provide the required storage capacity for attenuation of storm events, landforming will be required for the final attenuation basin. The base of the basin has been set at circa. 111.4m AOD, approximately 0.4m above the bed of the adjacent watercourse. The northern rim of the basin will be formed from natural ground cover, whereas the southern rim will require raising to 114.70m AOD, a rise of up to 2.7m. This will provide ~7,500 m^3 of storage (excluding 300 m freeboard storage: total of ~8,750 m^3 when including freeboard), of which ~6,650 m^3 will be above ground storage behind an artificial bank.

The majority of storm events will not require this volume; however, because the final basin provides a restricted outflow and a drain down point for the whole drainage system, the 7 day duration event becomes the critical storm for volume within the final basin. Whereas for short duration events such as the 15 minute and 30 minute events, the drainage attenuation system has been designed to spread the storage requirement and restrict flows via compartmentalisation across the site.

In line with CIRIA SuDS Manual (C753) (Woods Ballard, et al., 2015), all swales and basins will have 1 : 3 slopes and all basins will provide a 300 mm freeboard. Swales and basins will be seeded and grassed, providing a pollution treatment chain for on-site runoff.

4 Silt Pollution Risk Assessment

An assessment of the potential risk of silt pollution on and off-site has been made based on the Source-Pathway-Receptor (SPR) model; a conceptual risk assessment framework used to evaluate environmental pollution and hazards.

4.1 Risk Methodology

A risk rating is provided as guidance to the level of risk associated with silt pollution to the surrounding environment from the identified sources of pollution occurring from the development.

The risk rating assesses a number of risk factors in line with the SPR model. It assesses the sensitivity of any identified receptor and combines that with hazard consequence and probability to classify the risk rating as summarised in **Table 1.**

Based on the identified risk rating, plans will be developed and implemented to treat, control and minimise risk.

Table 1 Silt Pollution Risk Rating Methodology

Risk Rating	Description
High	Positive identification of a sensitive receptor and / or the likelihood of a potential risk to the surrounding environment
Medium	Potential identification of a sensitive receptor or the likelihood of a potential risk to the surrounding environment.
Low	Absence of any identified sensitive receptor or that a potential risk to the surrounding environment is unlikely.

4.2 Sources

The following sources, pathways and sensitive receptors on-site and off-site have been identified. Consideration of these along with additional factors can be used to determine a potential pollution risk rating.

The principal sources of potential silt pollution to the surface water receptors will be from the on-site earthworks, and infrastructure activities.

Where clay soils are exposed at the surface, it would be expected that infiltration will be limited, and silty water will likely flow across the surface, thus limiting the use of soakaways. Run-off directions will also be influenced by earthworks as development progresses and will drain locally to any drainage channels and gullies on-site.

4.3 Pathways

Plausible pathways for silt pollution to impact the identified receptors include direct construction surface run-off, and run-off via the surface water drainage network (gullies and sewer network).

4.4 Receptors

4.4.1 On-Site

- Gullies and on site surface water sewers/pipework
- The proposed Attenuation Basins and Swales
- Local drainage channel along southwestern boundary of the Eastern Field

4.4.2 Off-Site

- Thurlaston Brook
- Surrounding agricultural land

Table 2 Silt Pollution Risk Assessment

Risk Factor	Identified?	Description	Risk Rating
Sensitive Receptors			
Sensitive land uses within close proximity (e.g. residential, school, nurseries, care homes)	**No**	There are no sensitive land uses within close proximity of the Site.	
Are highways present adjacent to the Site?	**No**	The A447 is located 150m to the west of the Site, all runoff will end up within the series of swales that run along the boundary of the Site	
Is the site located within 100 m of a watercourse?	**Yes**	Thurlaston Brook is located approximately 60m east of the eastern boundary of the Site. There is also a local drainage channel that runs alog the western boundary of the central field.	
Discharge from Site flows directly into a watercourse?	**Yes**	Discharge from the Site is to a local drainage channel which then discharges into Thurlaston Brook	
Designated or protected sites (e.g. SSSI etc) at or downgradient of the Site?	**No**	There are no designations or protected areas at or downgradient of the Site	
Groundwater Source Protection Zone (SPZ) or Drinking Water Safeguard Zone (DWSZ)	**No**	Site does not lie within or near to an SPZ or DWSZ (Natural England, 2026).	
Does the Site lie on a Principal Aquifer?	**No**	Site lies on a Secondary B aquifer (Natural England, 2026).	
Ground Conditions			
Soils investigation identifies clay / silt (impermeable materials)	**Yes**	Soils towards the south of the site are identified as 'clayey'	
Site exposed, or at high altitude, or steep gradient.	**Yes**	The Site slopes to the southeast towards Thurlaston Brook with elevations ranging from 130 mAOD in the far northern corner to 112 mAOD at the southern boundary.	
Soils investigation identifies on-site contamination that may pose as risk to controlled waters	**No**	The Site is made up of land that is greenfield or that has been infilled with inert materials.	
Groundwater level detected at installed drainage pipework depths	**Yes**	The majority of the natural soils are classified as 'Loamy soils with naturally high groundwater'	
Flood Risk			
The Site is at Medium or High of flooding from rivers and sea, or from surface water flooding	**No**	The Site is at Low Risk of flooding from rivers and the sea and Low Risk from surface water flooding.	
The Site has been subject to flooding historically	**No**	The Historic Flood Map and Recorded Flood Outline datasets do not hold any historic records of flooding at the Site.	
Development Constraints			
Does the development require a programme of earthworks to change / modify site levels	**Yes**	Earthworks will involve grading of site levels to prepare a suitable development platform across the site.	
Are above-ground SuDS based storage features i.e. attenuation/infiltration basins proposed as part of the development?	**Yes**	Three Attenuation Basins will be constructed along the southern boundary of the Site with a series of swales between them. The final southern Attenuation Basin will discharge to a local drainage channel before entering Thurlaston Brook.	
Potential Pollution Risk Rating:			
It is considered that Site is classed as being at **MEDIUM RISK** prior to the installation of temporary silt protection measures, given the following risk factors: • Thurlaston Brook is located downslope of the Site and Attenuation Basin and is exposed to potential ingress of silty runoff from the working area. • A local drainage channel is located along the southwestern boundary of the Site and is exposed to potential ingress of silty runoff from the working area. • Presence of cohesive impermeable (clayey) soils underlying the site. Where these soils are exposed at the surface it would be expected that infiltration will be limited, and water will pool or flow across the surface. Such soils would have a higher potential for the mobilisation of clayey silt if disturbed when wet and will be vulnerable to disturbance when trafficked; • Groundwater levels at the site are expected t at shallow depths, especially in the south of the Site.			

5 Surface Water Management During Construction

5.1 Introduction

The information presented in this section sets out how pollution during construction shall be prevented and/or mitigated at the Site.

Surface water run-off from surface construction activities has the potential to become contaminated. The main contaminants arising from construction activities include:

- *Suspended solids* – arising from ground disturbance and excavation;
- *Hydrocarbons* – accidental spillage from construction plant and storage depots; and
- *Concrete /cementitious products* – arising from construction materials.

These pollutants pose a temporary risk to surface water quality for the duration of the project, if not properly contained and managed.

Surface water runoff will generally follow the site topography and ponding may occur within parts of the Site. Surface water runoff direction will also be influenced by general earthworks, roadways and features such as stockpiles or bunds as the development progresses and will gravitate locally to the gullies or swales of the proposed drainage system.

5.2 Roles and Responsibilities

The key roles and associated responsibilities regarding this CSWMP are set out below. The Construction Design and Management (CDM) Regulations 2015 also identify the legal duties, responsibilities and obligations of all the major roles within the construction team.

5.2.1 Applicant

The Applicant (FP McCann) will be responsible for the following:

- Ensuring that the CSWMP is implemented effectively;
- Giving necessary direction to contractors (for example, setting contractual obligations); and
- Reviewing, revising and refining the CSWMP (where necessary) in conjunction with the Principal Contractor.

5.2.2 Principal Contractor

The Principal Contractor will be appointed by the Applicant and has the overall responsibility for:

- Ensuring all procedures in this CSWMP are followed;
- Ensuring all contractors are suitably qualified and experienced in implementing the measures within this CSWMP. These measures will be contained within the terms of contracts to ensure understanding and accountability;
- Ensuring that all legal and contractual requirements relating to this CSWMP are met by ensuring adequate plans/procedures, licences and certificates are in place, and that they can be achieved;

- Establish procedures for the regular review and recording of the quality of the works as part of its Quality Management System; and
- Maintain records relevant to this CSWMP.

5.2.3 Contractors/Subcontractors

Contractors and sub-contractors are required to understand their responsibilities and implement the measures within this CSWMP.

5.2.4 Site Inductions

The Applicant will ensure that the Principal Contractor and Subcontractors are made aware of the CSWMP and their responsibilities. On-site inductions will be provided to ensure that construction team, including sub-contractors' personnel, are made aware of the function and importance of silt management measures. Additionally, it is recommended that signage and / or information is provided at the Site to ensure that the silt management measures are not disturbed without authorisation.

Any inductions related to the CSWMP will be additional to the mandatory formal site induction requirements on site Health and Safety.

5.3 Construction Legislation and Guidance

Construction works shall be undertaken in accordance with the following environmental legislation and guidance as set out below.

5.3.1 Legislation

- Water Framework Directive (WFD) England and Wales Regulations 2017;
- Land Drainage Act 1991;
- Environmental Permitting (England and Wales) Regulations 2016;
- National Planning Policy Framework (NPPF) 2021;
- Construction Design and Management (CDM) Regulations 2015; and
- COSHH Regulations 2002.

5.3.2 Guidance

- CIRIA SuDS Manual (C753);
- Environmental Good Practice – Site Guide (C650);
- Building Regulations Part H 2010;
- BS 8582:2013 Code of Practice for surface water management for development sites;
- Environmental Handbook for Building and Civil Engineering Projects (C512, C528 and C529) (CIRIA, 2000);
- Control of water pollution from construction sites. Guidance for consultants and contractors (C532) (CIRIA, 2001);
- Control of water pollution from linear construction projects. Technical guidance (C648) (CIRIA, 2006) and site guide (C649) (CIRIA, 2006b);

- Groundwater control: design and practice (second edition) (C750) (CIRIA, 2016); and
- Environmental good practice onsite guide (fourth edition) (C741) (CIRIA, 2015)

5.4 General Silt Control Measures

5.4.1 Awareness

The following measures are to be implemented to increase awareness and ensure surface water management activities are detailed in site documentation.

1. All subcontractors undertaking groundworks to consider silt minimisation and management within their Risk Assessment and Method Statement (RAMS) for the works.
2. Detailed site-based awareness training (toolbox talk) on surface water and silt management issues and control to be provided for all groundwork staff.
3. A section relating to silt minimisation and protection to be included within site induction folder.
4. Weekly site surface water checks to be undertaken throughout works, with support obtained from the appointed environmental consultant, if or when required.

5.4.2 Site Preparation Works

5. Placement of silt fencing adjacent to local drainage channels and on downgradient boundary of the Site until swales and attenuation basins are in situ.
6. Control of site surface soil strip: wholesale stripping of surface vegetation and associated topsoil.
7. Prioritisation should be given to stoning spine roads and haul routes. Upstanding spine roads and haul routes will provide temporary runoff control and storage and minimise trafficking over exposed soils. Leaving stoned roads unsurfaced will encourage infiltration into the stone reducing runoff velocities.
8. Consideration should be given to the location of stockpiled materials (topsoil / subsoil). It is recommended the stockpiles are located as far as reasonably practicable from any surface water receptors, gullies or swales. The placement of silt fencing or silt wattles at the base of stockpiles should be considered to control silt laden surface water run-off.
9. Consideration as to the placement of material storage areas, and any hardstanding or stoning up of storage areas to prevent tracking on unsurfaced ground to access materials.
10. General good housekeeping of the Site.

5.4.3 Throughout Construction Works

11. Prompt construction of storm water attenuation features (swales and basins) will enable their use in the control of surface water run-off. This will greatly increase the temporary run-off storage capacity. This should enable more efficient and reliable silt management. Silt protection methods should be employed at each headwall (or manhole inlet/outlet) prior to water entering and discharging.
12. Adoption of a strip and build approach minimising the amount of topsoil and vegetation removed and the area of exposed soils.

13. Retention of a strip of topsoil and vegetation between work areas and site boundaries. To include a step up from stripped area to cause any runoff to pool, if practical.
14. Tiering of works areas, where practical, to produce flat to low gradient areas to encourage soil infiltration, retention of rainfall, ponding and reduce runoff velocities.
15. Use of bog matting or wooden sleepers on temporary access routes through the site.
16. Phasing of the works to ensure surface water drainage works are prioritised to be undertaken as soon as possible.
17. Earthworks to be temporarily suspended during particularly wet or extreme weather conditions.
18. Avoiding excessive tracking, excavations, soil placements or washing out next to any drains/gullies.
19. Storage of materials in locations that have stoned or surfaced access. Provision of a temporary stoned or tarmac surface to storage, compound and car park areas.
20. Leaving road areas upstanding to provide runoff traps controlling silt mobilisation and runoff velocities.
21. Leaving topsoil and vegetation in place in areas not imminently due for development.
22. Silt mats, silt wattles or silt fences on boundaries of unworked areas to minimise surface water runoff and silt generation at source, particularly as the Site is steeply sloping.
23. Any grips dug to drain surface water from work areas will have silt mitigation installed so that the water cannot drain freely. Sandbags, straw bales, silt mats and silt wattles will be used (as appropriate) to slow and pool water and provide silt containment.
24. Positioning of stockpiled areas within designated areas away from receptors and with silt containment measures in place i.e. toe erosion control, geotextile membranes, silt netting or fencing (as appropriate).
25. Ensure stockpiles, soil bunds or material from excavations do not extend onto roadway or located in areas where soils could be mobilised into the gully system.
26. Observations will be made during work stages to assess the main overland flow pathways across the site and strategically position runoff and silt control measures appropriately to slow and pool water and provide silt containment.
27. Surface water will be managed such that any lean flows from non-active areas is contained within non-active areas or diverted away from work areas and excavations.

5.4.4 Re-instatement of Completed Areas

28. The placement of topsoil and planting / seeding at the earliest opportunity to stabilise soils and control construction surface run-off from completed areas and areas which are not proposed for construction within the current growing season, if reasonably practicable.
29. Landscaping of completed areas shall be undertaken as soon as practicable following their installation.
30. All reasonable and practicable measures must be taken to minimise the duration that soils are exposed by staging earthworks and stabilising the surface.
31. Buffer zones to be established to restrict plant and vehicular movements to protect areas from unnecessary disturbance. A physical barrier such as marker tape or light fencing to be erected around the buffer zone to define 'no-go' areas that area not to be disturbed.

5.4.5 Plant Machinery

32. Avoid tracking or washing out next to any gully or surface water drainage channel.
33. Avoid tracking in the vicinity of any standing water that may be present.
34. Use designated machine crossing points on surfaced roads.
35. As much as possible, minimising the movement of plant or other traffic in unsurfaced areas and use of physical barriers to restrict off-road access, where necessary.

5.4.6 Hydrocarbons

36. Measures are to be put in place to prevent pollution from construction plant, vehicles and machinery including refuelling and lubricating in designated areas, over an impermeable surface, with appropriate cut-off drainage located away from watercourses; plant to be maintained in a good condition, all refuelling shall be supervised and carried out in a designated area. In the event of plant breakdown, drip trays would be used during any emergency maintenance, and spill kits would be available on-site.
37. Areas with a greater risk of spillage (for example, vehicle maintenance and storage areas for hazardous materials) will be carefully sited (for example, away from drains or areas where surface waters may pond) and on an impermeable surface.
38. Fuels and potentially hazardous construction materials would be stored in bunds that have areas with external cut-off drainage; fuel would be stored in double skinned tanks with 110% capacity.
39. Construction plant will be checked regularly for oil and fuel leaks.
40. Waste fuels and other fluid contaminants will be collected in leak-proof containers prior to removal from the construction area to an approved recycling processing facility.
41. Oil absorbent booms shall be made available at the site compound and works areas and will be deployed as soon as possible in the event of a significant spillage.
42. Measures implemented to control spillage or pollution risks for site runoff will be regularly inspected to ensure they are working effectively.
43. Spill kits to be made readily available and easily accessed.

5.4.7 Cement and Concrete

44. Ensure concrete wash out only takes place at designated concrete washout areas.
45. Ensure pumping or similar processes of concrete is avoided over or adjacent to open water or gullies where possible and such works will be closely observed to ensure the swift shut off any pumps if a spillage occurs.

5.4.8 Temporary Dewatering of Excavations

46. Should dewatering of excavations be required, the following options may be considered: Over-pumping into the construction surface water drainage system i.e. any on-site temporary attenuation basin or construction surface water drainage network (when constructed).
47. Adequate protection measures must be implemented comprising as a minimum the use of filter bags on any pump outlet and passing water through a settlement tank/basin or lamella clarifier to prevent discharge of silt into

the constructed construction surface water drainage system and subsequently off-site. The implemented measures should be frequently monitored and maintained to prevent discharge of silt into the drainage system.

48. Any temporary construction surface water discharge undertaken during the construction phase should comply with any discharge permit (gained from the Environment Agency EA) or discharge consent (gained from the Lead Local Flood Authority (LLFA)). It is recommended that liaison is undertaken with the EA to ascertain the EA regional approach on this matter.
49. The site may be able to temporarily discharge uncontaminated water (like clean rainwater or infiltrated groundwater) from excavations into surface watercourses under Regulatory Position Statement 261 (RPS 261) without needing an environmental permit, provided all specific criteria are strictly met. Any unconsented discharge or discharge not meeting the requirements of the EA RPS may be liable to enforcement action. Discharge permitting for the Site should be discussed in-conjunction with Envireau before any discharges take place.
50. Following commencement of pumping the RPS 261 is applicable for a period of 3 months and careful treatment of the water MUST occur to ensure the requirements of the RPS are met. Records should be maintained to demonstrate compliance. Non-compliance and/or discharge of silt water is likely to result in enforcement action.

5.4.9 Road and Drainage Maintenance

51. Minimise the movement of plant on and off roads to prevent the tracking of excess soil onto surfaced roads (i.e. planning of the working day and work areas, utilising designated machine and dumper road crossing points).
52. Regular scraping of roads to remove significant silt build-up.
53. The placement of gully protection (Muck stopper/Gulli Block) in all gullies during construction and for these to be inspected and replaced / cleaned on a regular basis.
54. Provision of a road sweeper on site and on the adjacent road network during periods of inclement weather (frequency to be continually assessed by site management), but particularly during bulk soil movements.

5.5 Site-Specific Silt Control Measures

The site-specific measures to protect the surface water drainage system and prevent silt pollution off-site are shown on the CSWMP presented in **Figure 2.** A summary of the specific control measures to be employed are summarised in **Table 3.** These should be read in-conjunction with the General Silt Control Measures listed above in Section 5.4.

Example silt control products and installation guides are provided in **Appendix E** for reference. Photographic examples of best practice silt management have been provided in **Appendix F** for reference.

Table 3 Site-Specific Silt Control Measures

Measure	Action	Description
1	Install silt fencing along eastern and southwestern boundary of the eastern section prior to earthworks.	Silt fencing is to be installed prior to earthworks beginning and will remain in place until interception swales and attenuation basins are in place. Silt fencing on the southwestern boundary will be placed between and adjacent to the proposed basins and the local watercourse.
2	Install Hessian Bag Silt Entrapment Leaky Dams around the inlet and outlets of attenuation basins. Alternatively, a silt fence with a straw bale for support could be used instead.	Hessian bags filled with 4-6 mm pea gravel are to be installed around the inlet and outlet of the attenuation basins to filter runoff water and contain silt behind the leaky dam structure. Rehabilitation of the attenuation basins will be necessary at the end of construction. Build-up of silt behind the leaky dams or silt fencing structures should be inspected and removed at regular intervals.
3	The banks of attenuation basin should be grass seeded. The bed of the basin should also be grass seeded or alternatively a gravel bed, silt mats or flocc mats could be used instead as the bed of the basin	The basin banks to be seeded with grass as soon possible to increase the strength of the banks during the course of the remaining construction build. Grass also helps to trap silt within the basin. The bed of the basins could be covered with a gravel bed, silt mats or flocc mats as an alternative to grass seeding.
4	Demarcation of Manholes and drainage networks by spray painting to denote the receiving system	Surface water manholes to be painted Blue to identify the surface water system. Foul manholes to be painted Red to identify the sewerage system (if present). Clear demarcation of the foul and surface water systems will ensure protection during construction works to mitigate the potential for polluted waters to enter the drainage. Clean and easy onsite identification is a critical aid to site operatives.
5	Management of stockpiles	Careful management of stockpile locations and provision of toe erosion control measures such as geotextile membranes at base or silt wattles, where practical to do so. This will limit the potential for run-off of surface waters with suspended solids that has the potential to enter the surface water system. Ensure the toe or the base are as a minimum 5 m from existing properties, carriageways, drainage systems and receiving surface waters.
6	Provision of a road sweeper on site and adjacent road network	Frequency and duration of sweeper visits to be continually assessed by site management and increased during times of more frequent vehicle movements (e.g. muck shifts) and periods of inclement weather. For heavily accumulated silts in trafficked hardstanding areas (access road, etc,), use bucket scrape to remove silts prior to road sweeping.
7	Install silt wattles or silt fencing along upgradient edge of attenuation basin	Silt wattles or silt fencing acts to limit the potential for off-site migration of suspended soils in the event of extreme run-off conditions into the attenuation basin. This is important as the remaining construction / ground works areas are immediately upgradient of the pond.
8	Consideration of the use of flocculent gel packs in drainage system.	Clayey silts are expected at the site that may be difficult to settle out of suspension once mobilised. If this is the case, then consider using flocculent gel packs in the drainage system to coalesce clay particles into larger more settleable particles, and consider placing flocc mats in attenuation basins.

Signage to be located across site and at/or neat gully locations



Construction Traffic Access

On site gullies are to be used for surface water runoff around the building. Gully bags to be installed. To be monitored and cleaned once a week

Proposed External Storage Area

Pipe Factory

Proposed External Storage Area

Silt fencing to be installed along the boundary prior to the construction of the swales and attenuation basins.

Erosion control feature to be installed along the northern rim of the final basin e.g. matting to prevent erosion of the banks before vegetation has grow.

The banks of attenuaton pond should be grass seeded. the bed of the basin should also be grass seeded or alternatively a gravel bed

Periodic daily sampling to be taken during heavy/surface water discharge, with samples to be retained on site and records kept

Drawing Notes:

This drawing should be read in-conjunction with the Construction Surface Water Management Plan Report.
This drawing is not meant to be an accurate base plan but rather is used to present the general relative locations on, and surrounding the Site. Features annotated on the site plans are not drawn to scale but are centred over the approximate location. Such features should should not be used for setting out and should be considered indicative only.

Monitoring Rationale:

The primary monitoring locations should be inspected on a weekly frequiency (and if necessary, daily during heavy rainfall).
The secondary monitoring locations should be inspected on a weekly frequency (and if necessary, daily during periods of heavy rainfall or if issues are identified at the primary monitoring locations).

Additional Items:
Excavations:
Monitor Excavations to ascertain whether surface water has begun to flood the excavation/ these are already flooded and at risk of over-topping, and therfore whether there is any requirement for the placement of bunds, or silt-fencing up-gradeint of the excavation to controll runoff entry.

Stockpiles:
Monitor each stockpile to ensure no surface water runoff is occuring from the stockpile. Assess the requirement for placement of silt fencing along the foot of the stockpile to prevent runoff.

Contingency:
On site storage/ availability of silt fencing and silt matting to enable deployment at short notice if required (i.e. during inclement weather or storm event) and to facilitate on-going maintenance of potnetial installations.

Notes:

GENERAL

1. DO NOT SCALE.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.

3. UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT AUTHORITIES IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ISSUED ARE PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR START SITE WORK PRIOR TO APPROVAL HAS BEEN GIVEN, IT IS ENTIRELY AT OWN RISK.

4. ALL DIMENSIONS SHOWN ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

DRAINAGE

- 2017 Drainage Area
- 2022 Drainage Area
- Western Boundary Swale
- Upper Basins
- Surface Water Concrete Concrete Swale
- Eastern Boundary Swale
- Lower Cascading Basins
- Final Basin
- Local Drainage Channel

Internal Access Routing

Surface Runoff Overland Flow Direction

Temporary "Pea Gravel Hesian Bag" or "Straw bale and Silt Fence" Leaky Dam
Leaky dam to retain flows, encourage infiltration and allow settlement prior to discharge.

Temporary Silt Wattle
Potential areas to implement runoff and silt control measures to slow runoff and trap silts dependent on practicality of installation e.g. whether area is active, etc..

REV:	DESCRIPTION:	BY:	DATE:
A	FINAL	MT	14/10/2026

STATUS:

CLIENT: FP MCCANN

ARCHITECT: Envireau

SITE: CADEBY PIPE FACTORY

TITLE: CSWMP

SCALE AT A0:	DATE:	DRAWN:	CHECKED:
750	26/08/2026	MT	LC

PROJECT NO:	DRAWING NO:	REVISION:
3491675	CSWMP_002	A

6 Monitoring

The following monitoring procedures shall be carried out by the site construction team as described in the following sections below to enable continuous review of the measures listed above.

Appendix G provides proformas for monitoring records and also provides a visual aid to indicate what various concentrations of suspended solids (silts, etc.) look like in water, ranging from 0 to 3,300 mg/l.

The concentration of suspended solids that is acceptable to discharge to a watercourse is generally dependent on the nature of the receiving watercourse and whether there are sensitive receptors downstream. In England, discharges to watercourse under a long-term environmental permit are typically set at a suspended solids discharge limit of 50 mg/l.

6.1 Monitoring Points

The monitoring points are marked on the CSWMP on **Figure 2.**

6.1.1 Primary

The primary monitoring locations should be inspected on a weekly frequency (and if necessary, daily during periods of rainfall).

The primary monitoring points are:

1. Monitor the quality of the water at the outfall of the final attenuation basin and silt levels

6.1.2 Secondary

The secondary monitoring locations should be inspected on a weekly frequency (and if necessary, daily during periods of rainfall or if issues are identified at the primary monitoring locations).

The secondary monitoring points are:

1. Monitor the condition of all roads, particularly those used to access the active construction / groundworks areas. Roads should be regularly scraped and swept to minimise the potential for silt to enter the drainage system. The inspection of gullies should be included within this monitoring task to ensure they are adequately protected, free draining and not clogged with mud / debris resulting in silt entering the drainage system.
2. Monitor the condition of the swales and attenuation basins to check for silt accumulation or blockage.

6.2 Visual Inspection

Weekly inspections (and if necessary, daily during periods of rainfall or if issues are identified) should include, but not be limited to:

- Condition/quality of the surface water discharge point at the attenuation basin;
- Condition/quality of the discharge water into the attenuation basin;

- Hessian bag leaky dams or silt fencing around all inlets and outlet of the attenuation basin;
- All drainage gullies and surface water chambers to monitor the discharge entering the constructed surface water system using the gulley inspection form (see **Appendix G**);
- Maintenance, cleaning and replacement of gulley protection and all silt entrapment materials (e.g. silt fencing, silt matting or wattles) as required; and
- Maintenance, cleaning and silt removal for swales and attenuation basins, if required.
- Maintain a photographic log and written record of monitoring using the site inspection form (see **Appendix G)** on a weekly basis (as a minimum), which will assist in documenting changes on site and identifying any changes needed to the protection systems as the development construction progresses.

6.3 Records

Monitoring records are to be reviewed by site management and updated when required to reflect changes to site conditions and operations.

7 Emergency Procedure

7.1 Emergency Response Plan

The Principal Contractor will ensure the creation of an Emergency Response Plan to manage leakages or spillages containing contaminating and potentially hazardous substances and measures will be put in place to prevent pollution from construction plant, vehicles and machinery.

The following measures should be implemented by the Principal Contractor:

- Ensure concrete wash out only takes place at designated concrete washout areas;
- Measures implemented to control spillage or pollution risks for site runoff will be regularly inspected to ensure they are working effectively;
- Ensure maintenance vehicles are equipped with a spill kit in case of emergency and have spill kits stored in in appropriate and secure location;
- Make oil absorbent booms available at the site compound and work areas to ensure they can be deployed in the event of significant spillage; and
- Emergency response plans will be developed, and spill kits made available on-site.

All environmental incidents shall be reported to the Project Manager in the first instance. Where defined with the severity of the incident, categorised within four levels [No impact / Minor Impact / Significant Impact / Major Impact] to the environment. The Project Manager, dependent on category, will raise and report to relevant personnel internally and client side.

7.2 Extreme Weather

7.2.1 Forecasting

The Principal Contractor or alternative delegate must review a reliable 7-day predicted forecast at the start of each week. The meteorological office provide a useful short and long-term forecast based on a network of weather stations. This can be found at https://www.metoffice.gov.uk.

A copy of weekly forecast should be displayed in the site office. Where heavy rain or persistent rain is forecast, consideration must be given to the available capacity in the SUDS, to prevent overflowing. If extended periods of rain have already occurred, capacity in the SUDS may present a concern and a decision should be made if emergency measures will be required.

7.2.2 Action Plan

The actions and responsibilities in the event of a weather warning are described in **Table 4.** The Principal Contractor shall sign up to the Met Office weather warning system: https://www.metoffice.gov.uk/public/weather/warnings.

Table 4 Extreme Weather Action Plan

Alert Level	Definition	Action	Responsibility
Yellow: Be Aware	Yellow warnings can be issued for a range of weather situations. Many are issued when it is likely that the weather will cause some low-level impacts, including some disruption to travel in a few places. Other yellow warnings are issued when the weather could bring much more severe impacts to many people but the certainty of those impacts occurring is much lower. It is important to read the content of yellow warnings to determine which weather situation is being covered by the yellow warning.	Notify all site personnel of forecasted weather situations and assess and accommodate wherever possible, any requests for variation to normal working arrangements	Principal Contractor
Amber: Be Prepared	There is an increased likelihood of impacts from severe weather, which could potentially disrupt your works plans. This means there is the possibility of travel delays, road and rail closures, power cuts and the potential risk to life and property.	Notify all site personnel of forecasted weather situations and assess and accommodate wherever possible, any requests for variation to normal working arrangements Consideration to be given to making site safe for runoff control and suspending site operations until the risk has passed.	Principal Contractor
Red: Take Action	Dangerous weather is expected and, if you haven't already done so, you should take action now to keep yourself and your works force safe from the impact of the severe weather. It is very likely that there will be a risk to life, with substantial disruption to travel, energy supplies and possibly widespread. You should avoid travelling, where possible, and follow the advice of the emergency services and local authorities.	Notify all site personnel, preferably the day before, of forecasted weather situations. Consideration to be given to closing down site operations and making site safe for runoff control until the risk as passed.	Principal Contractor

References

British Geological Survey. (2025). *GeoIndex (Onshore)*. Retrieved from https://www.bgs.ac.uk/map-viewers/geoindex-onshore/

Cranfield Soil and Agrifood Institute. (2025). *Soilscapes*. Retrieved from http://www.landis.org.uk/soilscapes/

Natural England. (2026). *MAGiC Map Application*. Retrieved from https://magic.defra.gov.uk/magicmap.aspx

Appendices

© Envireau Ltd. 2026 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP

Appendix A Service Constraints and Limitations

© Envireau Ltd. 2025 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP

Appendix A - Services and Limitations

1. It is the understanding of Envireau that this report is to be used for the purpose described in the introduction of this report. That purpose was a significant factor in determining the level and scope of services. Should the purpose for which this report is used, or the proposed use of the site change, this report may longer be valid.

2. Reliance has been placed on observations of existing physical conditions at the Site gained by visual inspection together with publicly available data and information provided by Gleeson Homes. Gleeson Homes typically provide topographic survey, GI reports, drainage plans and building phase plans. The information is not necessarily exhaustive and further information relevant to the site may be available, for example, through the planning portal. When using the information provided by Gleeson Homes, it has been assumed to be correct. No attempt has been made to verify the information.

3. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, in use by machinery or plant, or the location of the area has not been made known or accessible.

4. This report centres on surface water management during construction, with a focus on silt pollution control. The management process relies on source control, entrainment or entrapment measures. In some instances, this may not be sufficient and there may be a need for end of line mechanical treatment system (e.g. lamella clarifiers and / or controlled chemical dosing) or passive treatment, holding water in lagoons or basins. This report does not provide a design for a treatment system (either passive or mechanical) to meet a particular controlled discharge condition i.e. limits for suspended solids, nor does it guarantee that a particular discharge condition can be met for moderate to extreme rainfall events. This would require detailed analysis of hydrological data to determine site specific flow rates, volumes and pollution loadings produced for said rainfall events and design a treatment system accordingly which is beyond the scope of this report.

5. This report has been prepared in line with current UK policy and legislative requirements for land, surface water and groundwater contamination which are enforced by the Local Planning Authority and the Environment Agency. Liabilities associated with contamination are complex and requires advice from legal professionals.

6. Envireau may place a measure of dependence upon oral communication with Gleeson Homes or site personnel; which is not easily verifiable through visual inspection or supported by written documentation. Envireau shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by Gleeson Homes or site personnel at the time of writing this report.

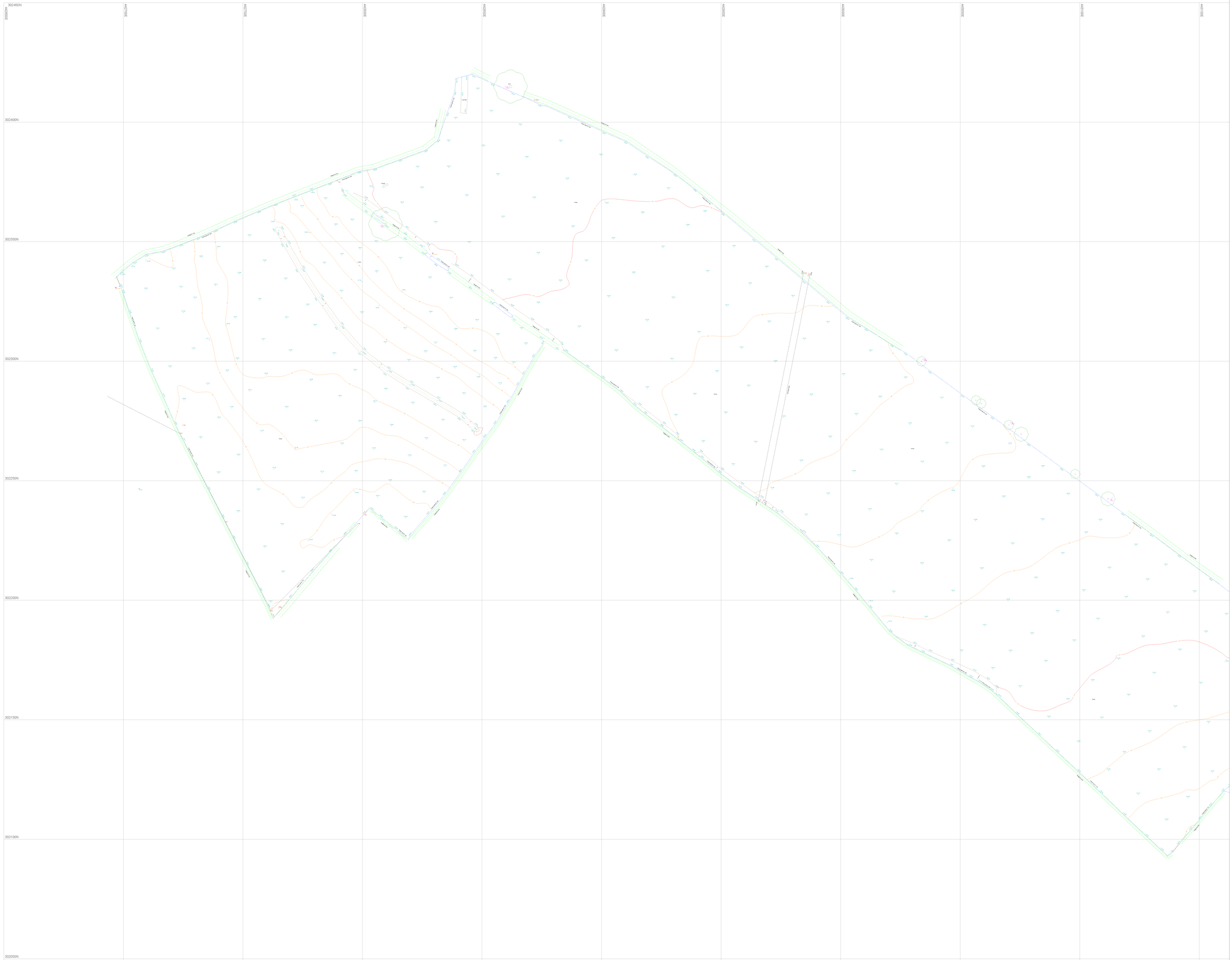
7. High-level site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

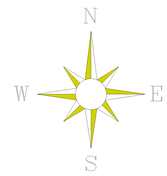
8. Envireau cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by Envireau in this connection without explicit written agreement from Envireau.

9. Over time, changes in site conditions, technology, economic circumstances, the availability of new information, revised practices, or amendments to legislation may affect the reliability of the findings and conclusions presented in this report and may necessitate its review, reinterpretation, or revision, in whole or in part. On this basis, this report should be considered as a "live document" that needs to be continually reviewed and updated as the development progresses or other changes occur on site. Envireau can only update this report through Gleeson Homes request to do and with support from further site inspections and review of relevant data.

Appendix B Site Topographical Survey

© Envireau Ltd. 2025 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP





Key:

FL:	Floor level	SHL:	Sill height level
CL:	Ceiling level	HHL:	Head height level
SuspCL:	Suspended ceiling level	SPR:	Spring Point
US:	Underside level	Arch:	Arch level
DP:	Down pipe	P.Arch:	Pointed Arch level
WP:	Waste pipe		

Door / sliding door

Inspection cover

Building line

Beam

Window

Dimension

Av	Air valve	G	Girth circumference	Sv	Stop valve
Bg	Back gully	Gy	Gully	TCB	Telephone cast box
BH	Borehole	HL	Height	TTL	Tree top level
BM	Benchmark	IC	Inspection cover	THL	Threshold level
BoS	Bollard	IFL	Internal floor level	TCB	Telephone cast box
Bx	Box stop	IL	Invert level	TL	Traffic light
BT	British Telecom	Lb	Letter box	THL	Threshold level
Bg	Back Gully	Lp	Lamp Post	Tp	Telegraph post
CL	Cover Level	MG	Mudgrills	Ts	Traffic signal
CBX	Control box	MH	Manhole	TT	Tactile paving
CPS	Concrete paving slab	Mkr	Marker post	TwL	Top of wall level
CTV	Cable TV cover	NVP	No visible pipes	UTL	Unable to lift
Elc	Electric cover	PInv	Pipe invert	WL	Water level
Ep	Electricity post	Pb	Post box	Wm	Water meter
Er	Earth rod	Re	Rodding eye	Wo	Wash out
Fh	Fire hydrant	Sp	Sign post		
Fs	Flagstaff	St	Stop tap		

Road
Drop Kerb
Verge/Tarmac
Verge Concrete
Verge Grass
Verge
Tops
Bottoms

Ordnance Survey information is provided for a guide only.
OS BUILDING OUTLINE
OS DETAIL

Station	Easting (m)	Northing (m)	Level (m)
M1	443309.507	302265.834	125.610
M2	443208.152	302169.765	124.358
M3	442828.595	302343.679	129.862
M4	442698.329	302331.244	127.596

REV	DATE	DESCRIPTION OF WORK	SURVEYOR	CHECKED BY

MAPMATIC
MEASURED SURVEYS
SETTING OUT • UTILITY SURVEYS • CCTV SURVEYS • CAMERA SURVEYS • ELEVATION ASSESSMENT
AERIAL SURVEYS • EARTHWORK CALCULATIONS • MEASURED BUILDING SURVEYS • TOPOGRAPHICAL SURVEYS
Mapmatic, Unit 14, Prime Parkway, Derby, DE1 3QB
Tel: 01332 650 580 www.mapmatic.com Email: info@mapmatic.com

CLIENT

FP McCann

PROJECT

Brascote Lane, Cadeby, Leicestershire, CV13 0BB

TITLE

Topographical Survey

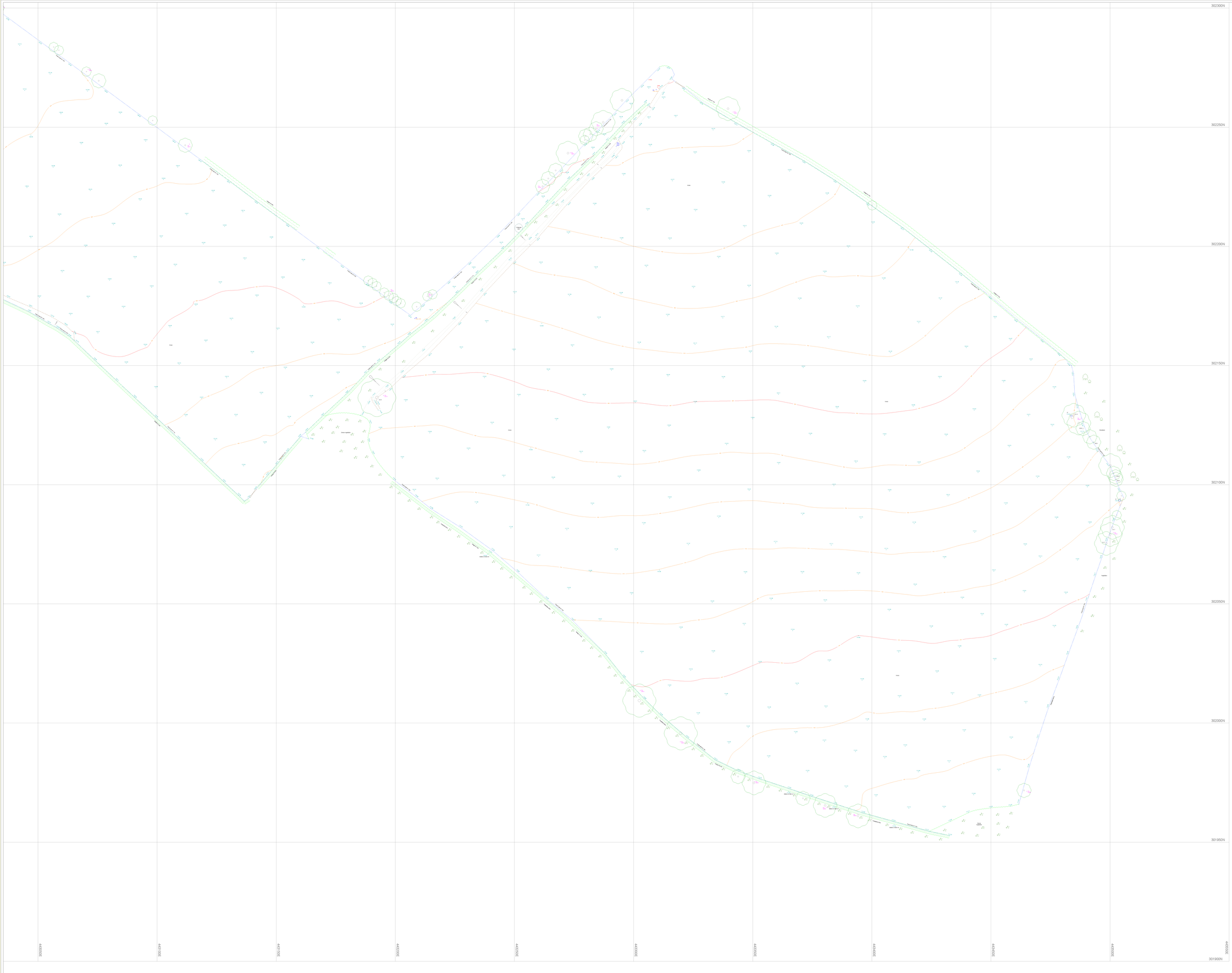
Scale	1: 500@A0	Date	05.11.2024
Drawn	JS	Checked	RP
Level datum	GNSS	Grid orientation	GNSS
Job number	7302	Revision	0
Drawing no.	0001	Sheet	1 of 2

Notes:

All critical measurements should be checked on site prior to design. No liability will be taken for this plan if passed onto 3rd parties. Trees and other survey data may be omitted due to dense vegetation. Some services may have been omitted due to parked vehicles and vegetation. Please note the drainage information has been collected from surface inspection only and no underground verification has been carried out.
This survey has been orientated to Grid Bearings from observations carried out via a Global Navigation Satellite System (GNSS) and the OS Active Network (OS NET). A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN15 & OSGM15 transformation models. The survey has been correlated to this point and a further one or more OSGB36 points established on site. A scale factor of 1.000 has been applied to the survey and has been applied to the survey therefore the coordinates shown are arbitrary and not true OS coordinates.
Please refer to the survey station table to enable establishment of the on-site grid.

RICS ICES

©Copyright Mapmatic 2024


302300N
302250N
302200N
302150N
302100N
302050N
302000N
301950N
301900N
443905E
443955E
444005E
444055E
444105E
444155E
444205E
444255E
444305E
444355E
444405E
444455E
444505E
444555E
Brascote Lane
Brascote Lane
Brascote Lane

Appendix C Development Layout Plan

FP McCann

Proposed Pipe Factory

Proposed Site Layout Plan

Site Entrance

Parking Provision

Brascote Lane

Retained Hedgerows & Hedgerow Trees

Realigned Ditch Corridor with Marshland

Existing FP McCann

Other Neutral Grassland

Proposed Pipe Factory

Proposed External Storage Area

New Native Scrub

Establishment of a Secondary Hedgerow together with the "Gapping Up" of Existing

Biodiversity Enhancement Area
Enhanced Ditch, Marsh, Grassland, and enhanced Hedgerow

Retained Hedgerows & Hedgerow Trees

Surface Water Management - *Swale & Ponds*

Retained Internal Vegetation Structure

Proposed External Storage Area

Surface Water Management - *Swale & Ponds*

Retained Hedgerows & Hedgerow Trees

A447

A

A'

B

B'

C

C'

130.0

126.0

128.0

124.0

118.0

114.7

LEGEND

- Application Site Boundary
- Other Land Under the Control of the Applicant
- 117.0 Contours & Spot Heights
- Internal Access Routing

Proposed Biodiversity Enhancement Area

- Proposed Other Neutral Grassland
- Proposed Native Scrub
- Proposed Realigned Ditch Corridor with Peripheral Marshy Vegetation
- Proposed Secondary Native Hedgrow Planting together with the "Gapping Up" of Existing
- Cross Section Locations

KEDD Limited

PROJECT:
FP McCann: Proposed Pipe Factory

TITLE:
Proposed Site Layout Plan

REF NO:
KD.FPPF.1.D.003

DATE:
March 2025

SCALE:
1:3,000 @ A3

STATUS:
FINAL

N

This drawing may not be used without the consent of Kedd Limited
Regus Edmund House, 12-22 Newhall Street, Birmingham B3 3AS
© Crown copyright and database rights [2024] Ordnance Survey AC0000808122

Appendix D Drainage Layout Plan

© Envireau Ltd. 2025 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP

S-1
CL:130.000m
IL:129.750m

S0
CL:129.900m
IL:129.650m

S1
CL:129.891m
IL:129.641m

S2
CL:129.148m
IL:128.648m

S3
CL:127.888m
IL:127.388m

S4
CL:127.204m
IL:126.454m

S5
CL:126.705m
IL:125.955m

S6
CL:126.079m
IL:125.079m

S7
CL:125.935m
IL:124.935m

S8
CL:125.828m
IL:124.245m

S12
CL:125.500m
IL:124.205m

S13
CL:124.944m
IL:123.944m

S14
CL:123.993m
IL:122.993m

S15
CL:123.071m
IL:121.534m

S18
CL:123.071m
IL:121.496m

I0
CL:123.488m
IL:121.147m

I1
CL:123.837m
IL:120.645m

F6
CL:123.580m
IL:122.080m

F7
CL:123.092m
IL:121.670m

F8
CL:121.913m
IL:120.500m

F9
CL:120.489m
IL:119.000m

F10
CL:120.000m
IL:118.000m

F11
CL:118.717m
IL:116.440m

F4
CL:120.000m
IL:117.100m

F5
CL:117.750m
IL:115.433m

F9
CL:123.364m
IL:121.847m

F1
CL:122.812m
IL:121.459m

F2
CL:121.700m
IL:119.975m

F3
CL:120.140m
IL:118.400m

C0
CL:118.000m
IL:116.400m

C1
CL:117.800m
IL:115.433m

C2
CL:117.000m
IL:115.400m

C3
CL:116.750m
IL:114.419m

C4
CL:116.000m
IL:114.400m

C5
CL:115.544m
IL:113.418m

C6
CL:115.000m
IL:113.400m

C7
CL:114.700m
IL:112.423m

C8
CL:114.700m
IL:112.400m

C9
CL:114.650m
IL:111.484m

C10
CL:114.650m
IL:111.400m

C11
CL:112.000m
IL:111.350m

ES9
CL:119.122m
IL:118.872m

ES8
CL:118.923m
IL:118.673m

ES7
CL:118.398m
IL:118.148m

ES6
CL:118.143m
IL:117.893m

ES5
CL:116.873m
IL:116.623m

ES4
CL:116.252m
IL:115.752m

ES3
CL:115.660m
IL:115.160m

ES2
CL:115.104m
IL:114.354m

ES1
CL:114.650m
IL:113.543m

ES0
CL:114.650m
IL:111.484m

WESTERN FIELD

CENTRAL FIELD

EASTERN FIELD

FLOW RESTRICTION WEIR
DESIGN WIDTH 0.428 M
DESIGN FLOW 25 L/S

FLOW RESTRICTION WEIR
DESIGN WIDTH 0.685 M
DESIGN FLOW 40 L/S

FLOW CONTROL WEIR
DESIGN WIDTH 0.428 M
DESIGN FLOW 25 L/S

Upper Basin
1 in 3 side slope
Volume 542 m3

Upper Basin Headwalls
FP McCann Pre Cast
Concrete Headwall

Box Culvert
FP McCann Pre Cast
Concrete Box Culert
1500mm x 1500mm

Upper Basin
1 in 3 side slope
Volume 723 m3

FLOW CONTROL CHAMBER (ORIFICE)
DESIGN WIDTH 0.394 M
DESIGN FLOW 385 L/S

FLOW CONTROL WEIR
DESIGN WIDTH 0.448 M
DESIGN FLOW 1675 L/S

Lower Cascading Basin
1 in 3 side slope
Volume 680 m3

Lower Cascading Basin
1 in 3 side slope
Volume 803 m3

Lower Cascading Basin
1 in 3 side slope
Volume 444 m3

Lower Cascading Basin
1 in 3 side slope
Volume 370 m3

Lower Cascading Basin
1 in 3 side slope
Volume 1168 m3

Grated Manhole

Shallow Concrete Pad Channel

Final Basin Headwalls
FP McCann Pre Cast
Concrete Headwall

FLOW CONTROL CHAMBER (ORIFICE)
DESIGN WIDTH 0.454 M
DESIGN FLOW 575 L/S

FLOW CONTROL CHAMBER (ORIFICE)
DESIGN WIDTH 0.436 M
DESIGN FLOWV600 L/S

Erosion control feature to be installed
along the northern rim of the final basin
e.g. matting to prevent erosion of the banks
before vegetation has grow.

FLOW CONTROL CHAMBER (ORIFICE)
DESIGN WIDTH 0.077 M
DESIGN FLOW 21.1 L/S

Final Basin
1 in 3 side slope
Volume 8741 m3

Final Basin Headwalls
FP McCann Pre Cast
Concrete Headwall

Final Basin Headwalls
FP McCann Pre Cast
Concrete Headwall

Drain

Hopper
Conveyor

Tank

Pond

Highfields

Orchard Farm

Notes:

Local Drainage Channel

Building Downpipe

Surface Runoff Overland Flow Direction

REV:	DESCRIPTION:	BY:	DATE:

STATUS:

CLIENT:

ARCHITECT

Envireau

SITE:

TITLE:

SCALE AT A0:	DATE:	DRAWN:	CHECKED:
PROJECT NO:	DRAWING NO:		REVISION:

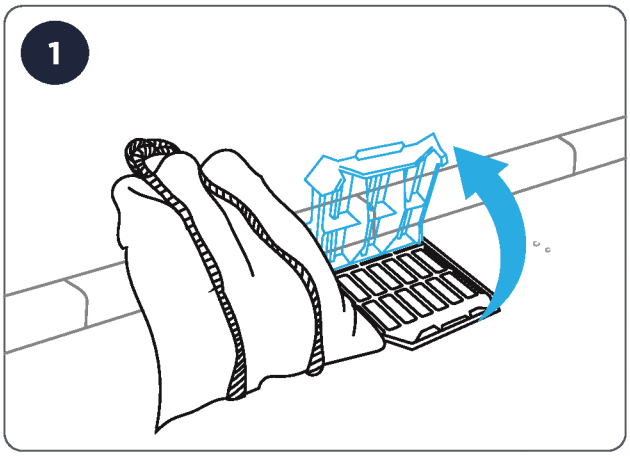
Appendix E Installation Guides, Example Manufacturers and Product Sheets

© Envireau Ltd. 2025 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP

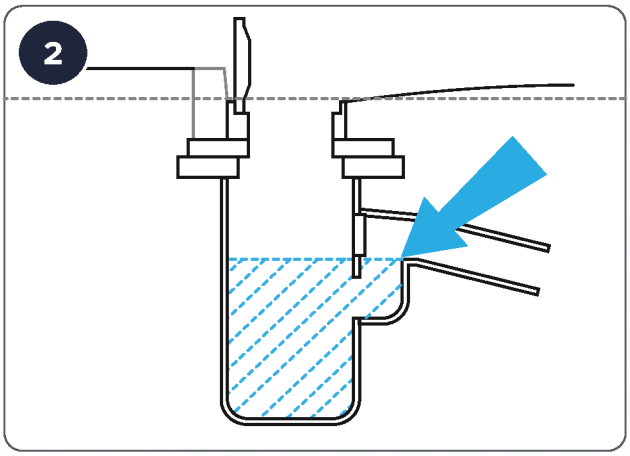
Product:	Application	Manufacturer and product
Gulley Protection	Prevent silt and construction debris entering the drainage system and blocking gully pots. Proprietary products often yield superior results to straw and terram and require less maintenance.	• Forest Group – Gully Guard • Hy-Tex – Ultra drain guards • Drainfast - MuckStopper
Silt Fencing	Attenuate water on site to promote settlement of silt within overland run-off.	• Frog Environmental – Silt Fence • Hy-Tex – Terrastop Silt Fence • Siltbuster – Silt Fence
Silt Matting	Capture settled silt as it naturally falls from suspension within watercourses, swales, attenuation basins to prevent its resuspension.	• Frog Environmental – Silt Mat • Hy-Tex – SediMat
Flocculant Treated Silt Matting	Capture settled silt within watercourses, swales, attenuation basins to prevent its resuspension. The addition of flocculant treatment encourages silt to settle out of suspension more readily. The Environment Agency must be consulted prior to utilisation of flocculants, and an environmental permit gained where required.	• Frog Environmental – Floc Mat
Silt Wattle	Used as check dams within watercourses / swales providing filtration and also slowing the flow of water to promote settlement of silt. Typically used in conjunction with silt matting (or flocculant coated silt matting) to capture sediment that was caused to settle. Can also be used to separate silty and clear water (i.e. within attenuation basins, or watercourses), on slopes to reduce erosion from overland run-off or to divert silty water to collection areas (i.e. on roads to divert silty run-off away from gullies).	• Frog Environmental – Silt Wattle • Hy-Tex – Ultra Erosion Guard (suitable for use as a check dam to control erosion only, due to its different construction to the Frog Environmental Silt Wattle).
Filter socks	Fitted to hose end during dewatering of excavations to collect sediment. Capable of dealing with smaller volumes and lower flow rates.	• Hy-Tex – Pro-Tex Pipe Socks • Murlac – Silt Sock • Dirtbags UK – Utility Bag
Filter bags	Fitted to hose end during dewatering of excavations to collect sediment. Capable of dealing with larger volumes and larger flow rate, typically up to a 6" pump. Note – * denotes those bags which are sized to be used within a roll on roll off skip for ease of disposal of capture silt.	• Hy-Tex – Ultra Dewatering Bag • Siltbuster – Siltstoppa Dewatering Bag* • Murlac – Silt Bag • Dirtbags UK – Dirtbag / Titan Dirtbag*
Settlement Tanks	Settlement and capture of suspended solids during dewatering / over pumping works of a larger volume than suitable for a dewatering bag, or during extended periods of dewatering / over pumping. The unit required is dependent on the grain size of suspended particles, how quickly these settle from suspension, and the required flow rate. Liaison with the supplier is best undertaken to ensure a suitable product is selected. Can be used in conjunction with flocculants and coagulants to promote settlement, however the Environment Agency must be consulted prior to their utilisation, and an environmental permit gained where required.	• Siltbuster – wide range of settlement units available • Andrew Sykes Group – settlement tanks / Silt Away. • Dirtbags UK – Dirtbox

Forest Group UK
Gully Guard

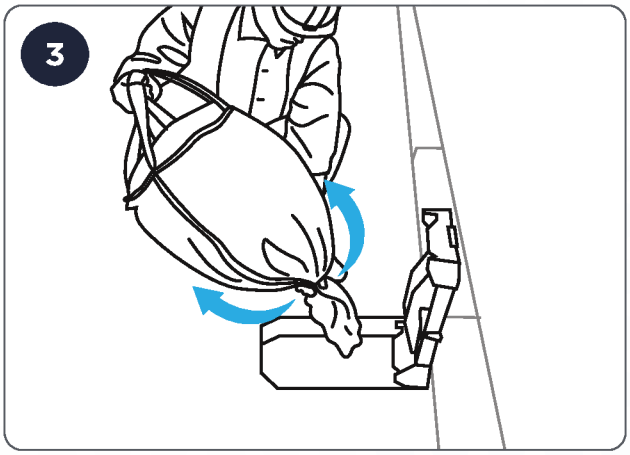
Installation Guide



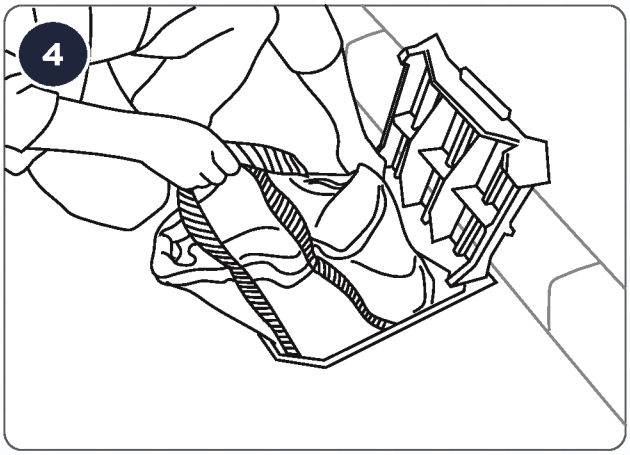
Lever open gully grid and fill gully pot with water.



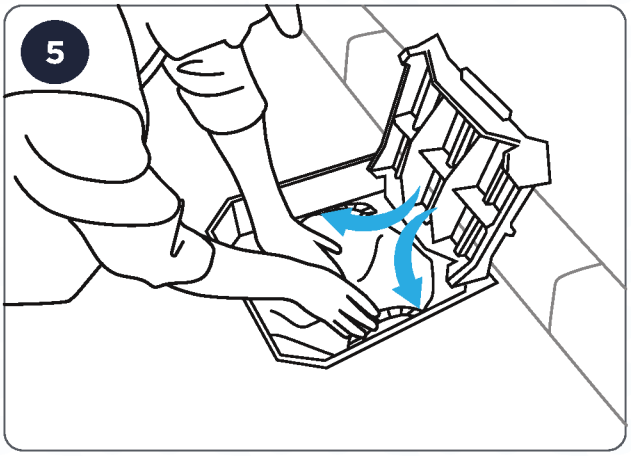
Ensure gully pot is charged with water to outlet level.



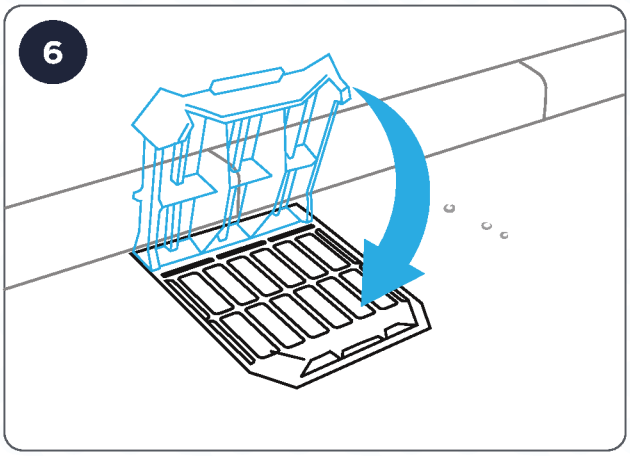
Hold the bottom of the Gully Guard and work the beads to the top of the bag.



Lower the Gully Guard into the pot. Allow the beads to fall freely into the void within the pot.



Tuck the Gully Guard holding handles inside of the gully.



Close the Gully Grid.

Forest Group UK

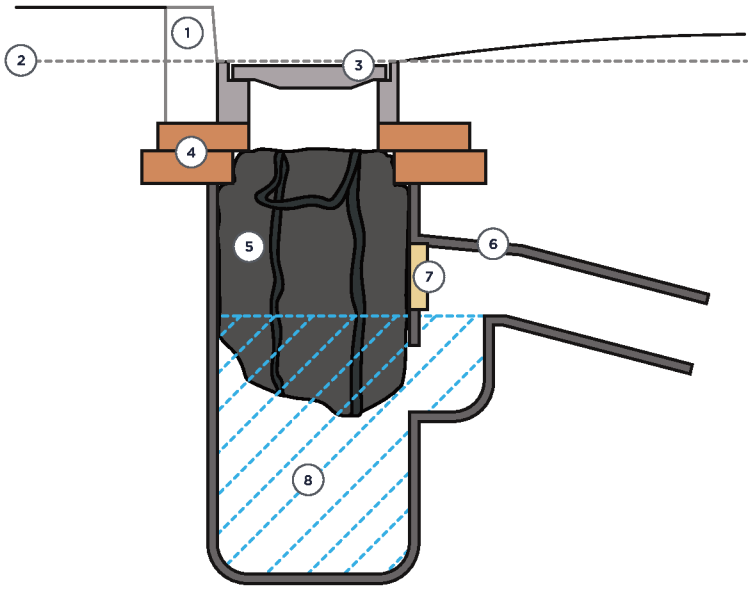
Forest Drainage Products ltd. 05/2021-NH Patent no. 2472690

Scan to watch our installation video

Gully Guard Installation Guide

Forest Group UK
Gully Guard
Patent no. 2472690

Installation Diagram



1. Kerb Stone
2. Ground level
3. Gully Grating & Frame
4. Brickwork
5. Gully Guard
6. Gully Wall
7. Stopper
8. Water

Gully Guard Maintenance

The Company (Forest Drainage Products) would recommend that an inspection procedure be put in place for the product by the organisation on a 3-4 months basis depending on site conditions.

Maintenance would simply involve the removal of the Product and power hose off in a bund to contain and manage silt and any contaminants prior to reinsertion back into the gully pot.

Without prior knowledge of the type and concentration of the contaminants that each Gully Guard has been subjected to, the Company cannot advise on appropriate disposal. The Company advises that an environmental risk assessment is conducted on an individual case-by-case basis to fully evaluate the nature of contaminants. In order to determine the appropriate method of disposal the Company would recommend that you follow your organisation's environmental waste disposal policy

Forest Drainage Products Limited (the "Company")

T: 01531 828960 **E:** info@forestgroupuk.co.uk

Cleaner Waterways

A high performance, versatile solution part of our water course protection systems.



In 2016, almost four million pounds* in fines were paid by companies in the UK for polluting rivers and smaller watercourses.

Gully Guard™ is the market leader in Gully Pot drainage protection. This system is an environmentally friendly, inexpensive, and reusable engineering solution that assists in the prevention of surface flooding and watercourse contamination.



Gully Guard™ is quick and easy to install into gully pots and other water transport systems. It works by trapping the debris and contaminants from surface water run off, such as construction, operational and processing waste, silt, hydrocarbons and heavy metals – reducing clogged drains (which is the main cause for ground flooding and damage).

The filtered surface water is able to effectively drain away into watercourses leaving the debris and contaminants in the Gully Guard™ and not the environment.

* The fines excluding court costs amounted to £3,748,984 and did not include companies that were in the process of being brought to court or, were under investigation by the governing agencies.

Market Applications

Infrastructure Planning

Construction

Remedial Solution

Food & Drink Processing

Agriculture

Industrial Plants

Gully Guard™

UK Market Leader

Patented Gully Innovation

Supports EU Directive

Environment Agency Recognised

Favoured by Industry

Damage control for cleaner watercourses

Saves time and fines

Features

Easy to install & reusable

98% filtration of silt, debris & toxins

Supports Gully Pot water flow

Aids prevention of surface flooding

Significantly less time on maintenance and cost

Just hose down and reinstate

Kind to nature – no chemicals

So simple, **it works**

Our customers find Gully Guard™ so quick and easy to install and require less inspection and cleaning times – compared to historic methods of filtering waste from gullies, which is prone to frequent clogging.

Gully Guard™ is ideal for all drainage and water transport systems, and are available for standard gully pots and to our customer's specification. Market industries include; Construction, Transport, Agriculture, Food and Drink Processing and Operational Factory waste.

With Gully Guard™ our customers reported no Gully pot clogging issues!

And the cleaning process is simple - just hose down and reinstate!



Water sits on the surface if drains are blocked.



Gully Guard™ traps debris for easy collection and removal.



Prevents pollutants entering a watercourse e.g., silt, heavy metals, hydrocarbons and suspended solids.

Gully Guard™ will save you time and fines.

Flooding Risks of Watercourses with Contamination

Gully Pots are prone to the build up of sediment and can become blocked and inactive through operational and processing waste and, building developments that generate building silt and debris. This leads to flash flooding and build-up of standing water on sites when it is unable to drain away.

This urban storm water is known to comprise toxins of hydrocarbons, heavy metals, nutrients and de-icing agents all of which can potentially cause contamination of the existing water course. Companies who do not take adequate precautions to prevent severe contamination of the watercourses, face prosecution and large fines by environmental authorities and governing bodies across England, Ireland, Scotland and Wales.

European Water Framework

Under the **"European Water Framework Directive"** we are now obliged to implement measures to protect watercourses from pollution. In the UK, the Environment Agency, DEFRA and other governing bodies can now enforce financial penalties if companies do not take adequate precautions to prevent watercourse contamination.

Over 2000 Gully Guards are sold every month!

When should I use Gully Guard™?

Infrastructure Planning

- Ideal for agricultural sites, food and drink processing and industrial plants
- Transport and utilities maintenance
- Supports health and safety requirements
- Quick to install and easy to maintain
- Reusable - reduces gully maintenance costs
- Prevents build-up of toxins and debris in the gully
- No restriction to water flow into water transport drainage systems
- Standard gully pot and bespoke sizes available



Food processing



Infrastructure maintenance



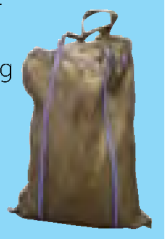
Agriculture management



Phosphate pollution - surge in algae over production

Construction

- Reduces labour and mechanical costs involved in emptying the gullies
- Protects gullies during site construction
- Prevents gullies from being blocked by silt and debris
- Visible silt and debris management system



Remedial Solutions

- Aids in containment of contaminated silt and suspended solids
- Assists in protecting the water course from pollutants found in run-off storm water. E.g. hydrocarbons, heavy metals
- Environmentally friendly

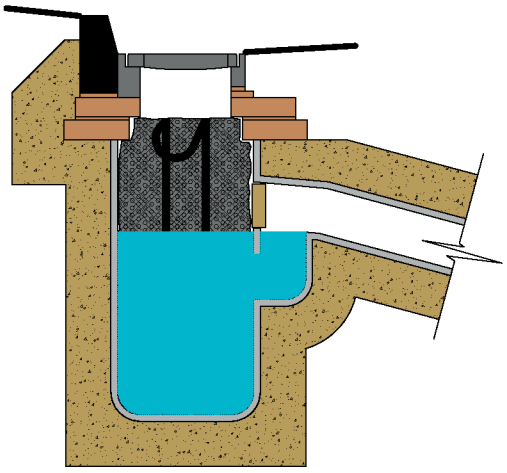
Gully Guard™ Installation **Takes minutes!**

Our customers reported no Gully pot clogging issues! And the cleaning process is simple - just hose down and reinstate!

1. Lever open gully grid. Gully Guard™ can fit a range of gully pot sizes.
2. Hold handles at top of the Gully Guard, work beads to top and insert base into gully pot.
3. Lower the Gully Guard into the pot. The beads will fall freely into the size void within the pot.
4. Tuck the holding handles to the side of the Gully Guard™.
5. Close and secure gully grid.

How much does Gully Guard™ filter out?

- 97.91% is trapped in the Gully Guard
- 1.92% is trapped in the Gully Pot base
- 0.17% passes through the Gully pot



Gully Grating and Frame
Kerb Stone
Brickwork
Gully Wall
Concrete Surround
Stopper
Water
Gully Guard
Gully Guard Straps











Speak to our friendly sales team to find out more:
Tel - **01531 828 960** | Email: **info@forestgroupuk.co.uk**

Independent Performance Testing

The Department of Civil and Structural Engineering at the University of Sheffield carried out a programme of tests to quantify the effect of Gully Guard™.

The University Of Sheffield.

Significant Results

Sheffield University summarised that an installed Gully Guard™ will capture the majority of the sediment and associated pollutants entering a gully pot. This makes it easier to service and maintain whilst significantly reducing the amount of contaminated sediment passing through the gully pot into the drainage system, and therefore entering the water course. Visit our website for the full report.



"We have no hesitation in recommending Gully Guard™"

Taylor Wimpey.

Taylor Wimpey take their health, safety and environmental responsibilities very seriously, and to see why they now use Gully Guard™ on all their developments, visit our website – **www.forestgroupuk.co.uk**

Taylor Wimpey



Valued customers include:

kwbellgroup

BLOOR HOMES

Story

PERSIMMON

miller homes

3 Steps

Assess, Inspect & Maintenance

1. We advise that an environmental risk assessment is conducted on an individual case-by-case basis to fully evaluate the nature of site debris and contaminants. In order to determine the appropriate method of disposal we would recommend that you follow your organisation's environmental waste disposal policy.
2. Forest Drainage Products recommends an inspection procedure be put in place for Gully Guard™ product on a 3–4 months basis depending on site conditions from the assessment above.
3. Maintenance simply involves the removal of the Gully Guard™ and power wash off in a bund to contain and manage silt and any contaminants prior to reinsertion back into the gully pot.

Gully Guard™ is part of Forest Drainage Products Ltd - a division of:

fg The Forest Group
High performance, versatile solutions

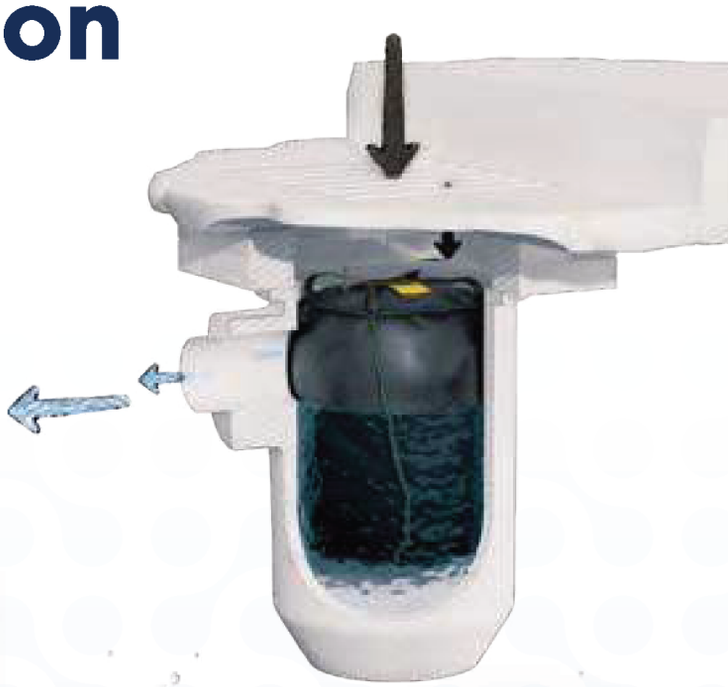
Stardens Works, Tewkesbury Road, Newent, Gloucestershire, GL18 1LG
Tel: 01531 828 960 | Fax: 01531 828 968 | Email: info@forestgroupuk.co.uk | www.forestgroupuk.co.uk

April 2018

The Clear Choice in Gully Protection

Forest Group UK
Gully Guard

Our product is proven to remove **98% of suspended solids** and debris from entering into the existing watercourse, **capturing 97% of surface water contaminants such as; PAH's, heavy metals, de-icing agents, nitrates and phosphates.** This is achieved whilst **maintaining flows in excess of a 500 year return storm event** and all independently tested and confirmed by the university of Sheffield.



Removes 98% of Silt / Suspended Solids

Captures 97% of water-soluble chemicals & metals

Huge savings on installation time & costs vs other products



Lightweight, quick & easy to install

Made from 100% Recycled Materials

Independently tested by The University of Sheffield

Made in The United Kingdom

Proven by independent laboratory testing

Simple, Durable & 100% Reusable

Forest Group UK
Forest Drainage Products ltd.

T: 01531 828960 **E:** info@forestgroupuk.co.uk

For more advice visit www.forestgroupuk.co.uk

Huge savings on installation time & costs vs other products

The Gully Guard from Forest Group UK offers unmatched ease of installation, making it the clear choice over other gully based silt blockers.



Tool-Free Installation in Seconds: Gully Guard requires no tools to install. Simply drop it into place, and it's done. The quick, hassle-free installation process means significant savings in time and labour costs compared to other options that require assembly or specialist equipment.

No Rebuild Required: Unlike products that demand concrete bedding and removal, Gully Guard fits straight into your existing setup. No modifications, no extra spend—just immediate protection without the headache of construction.

Immediate Cost Savings: With no complicated installation, zero added materials, low cost per unit, totally reusable with no cost to replace parts to enable reuse.

The Gully Guard offers instant cost savings that keep adding up. It's the smarter, simpler choice that's easy on your budget now and over time.

Gully Guard vs Other Silt Blockers	Gully Guard	Other Silt Blockers
Made from 100% recycled materials	✓	✓
Backed by independent laboratory testing	✓	✗
Time to install	30 Seconds	Hours
material Cost to install	£0	£120+
Can be used on existing gully	✓	✗
Universally fits any gully size 350 to 450 ø - unit available for 300ø	✓	✗
100% Reusable	Fully reusable	Partly reusable
Removes water-soluble chemicals & metals Such as PAH's, Nitrates & Phosphates	✓	✗
Product life expectancy	100 Years	30 Years
Product cost	<£50 each	£100+
Tested to storm events in excess of	500 Years	1 Year

Forest Group UK
Forest Drainage Products ltd.

T: 01531 828960 **E:** info@forestgroupuk.co.uk

For more advice visit www.forestgroupuk.co.uk

Hy-Tex **Ultra Drain Guard** for Drainage Gully Sediment Control







Ultra Drain Guards are designed to remove oil and sediment pollution from surface water running into gully drains from surrounding construction sites, farms, industrial estates, or other areas prone to storm water pollution or cleaning operations.

Ultra Drain Guards are made from a high permeability non-woven polypropylene geotextile that trap solids and oils but allow water to drain through and also incorporate bypass ports to further maintain flow into the drain.

They are designed to be easily placed directly into the drain gully pot to filter out materials as they flow into the drain without compromising drainage, and the Oil and Sediment model absorbs up to 3.29 litres of hydrocarbons as well as up to 18 kg of sediment, sand or debris.

Installation:

1. Remove catch basin grating
2. Clean dirt and debris from grating ledge
3. Insert Drain Guard.
4. Reinstall grate. To insure maximum effectiveness, Drain Guard skirt should be secured (pinched) between grating and ledge.
5. Cut the excess fabric off with a blade or knife if desired.

Maintenance and disposal:

6. The Ultra-Drain Guard filters are designed to be used for 3 to 6 months under normal conditions.
7. Where heavy contamination is present the unit will have a reduced life expectancy. When the unit has collected about 6 inches of sediment it is recommended that it be replaced. The unit should also be replaced if free oil can be seen floating and is not being absorbed. The Ultra-Drain Guards should be inspected on a regular basis.
8. Dispose of unit in accordance with applicable environmental laws and regulations. The user is solely responsible for compliance with maintenance and disposal laws and regulations. The manufacturer or seller assumes no responsibility for proper or improper maintenance or disposal.

Model	Code	Oil Capture	Sediment Capture	Collection Area	Flow Rate	Size
Oil & Sediment	9217	3.29 l (.87 gal)	18 kg (40 lbs)	25.4 x 45.7cm (10" x 18")	1893 l/min (500 gpm)	121.9 x 91.4 x 45.7cm (48" x 36" x 18")





All of this was removed from 50 Ultra Drain Guards after just two weeks in storm drains

Property	ASTM Test	Value
Material		Non-woven polypropylene geotextile
Grab Tensile Strength	D 4632	979 N (220 lb)
Elongation	D 4632	50%
Trapezoid Tear	D 4533	423 N (95 lb)
Puncture Resistance	D 4833	600 N (135 lbs)
Mullen Burst	D 3786	2,896 kpa (420 psi)
Permittivity	D 4491	1.4 sec^{-1}
Pore Size	D 4751	180 micron (80 US sieve no)
UV Stability	D 4355	70% strength retained after 500hr
Weight	D 5261	272 g/m^2 (8 oz/yd^2)
Flow Rate - Fabric	D 4491	3,660 $l/min/m^2$ (90 $gal/min/ft^2$)
Flow Rate - Bypass Ports	D 4491	2,914 l/min

All data stated and the recommendations made herein are offered free of charge and are accurate to the best of our knowledge. Hy-Tex (UK) Ltd assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. Hy-Tex disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, material, or information furnished herewith. Final determination of the use of any information or material, or how it is useful, and whether the use infringes any patents is the sole responsibility of the user.

©2013 Hy-Tex (UK) Ltd G_DEWATER_01. Terms & Conditions apply.

Aldington Mill, Mill Lane,
Aldington, ASHFORD, Kent TN25 7AJ
sales@hy-tex.co.uk www.hy-tex.co.uk

Tel: 01233 720097
Fax: 01233 720098

Hy-Tex (UK) Limited
Committed to Quality, Value & Service

frog environmental

product information sheet

Silt Fence

temporary silt control barrier



frog environmental supply Silt Fence and quarter cut 1.2 metre posts, ideal for providing support

Silt Fence is inexpensive to buy and install, but it must be correctly positioned and maintained for it to be an effective pollution control measure.

Each line of Silt Fence should be inspected on a regular basis, especially after rainfall.

If stakes are broken or gaps appear between the fence and the ground, then the fence should be re-trenched. Accumulated silt must be removed regularly from Silt Fence, typically when it reaches a third of the way up the fence.

Multiple smaller runs of silt fence are usually more effective at controlling pollution than longer lines.

Applications

- Silt Fence is deployed on construction sites to help prevent silt pollution in water bodies or from impacting public highways.
- Silt Fence provides a 'ponding' function; it allows silt laden water to collect behind it and for silt to drop out of suspension while the water slowly drains away or evaporates.
- Silt Fence is usually deployed in conjunction with other silt pollution control measures, especially on sites with clayey soils.

frog environmental Silt Fence is made from high specification geo-textile material and has medium porosity, making it suitable for use on most construction sites.

Poorly installed Silt Fence can cause erosion underneath or around the edges of fencing. This can lead to an increased silt pollution risk.

Dimensions: 100 metres x 0.9 metres (single roll)

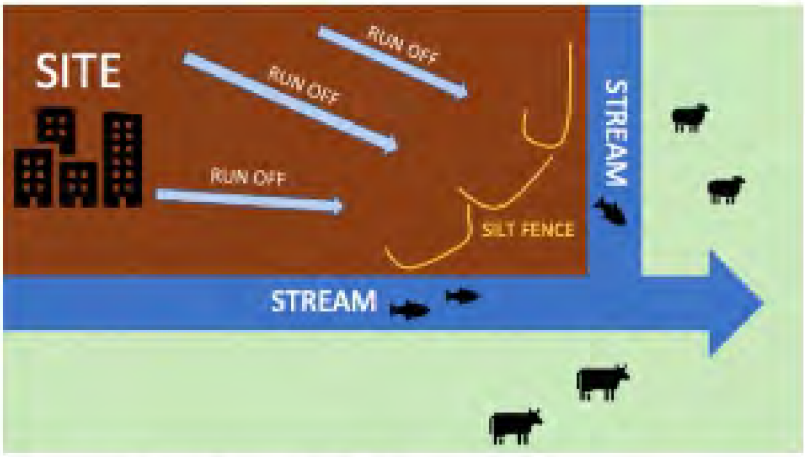
Dry Weight p/m: 110 g/m2 (9.9 kg single roll)

Permeability: 7 (l/m2 /sec)

Material used: tear resistant polypropylene geotextile, PFSC timber stakes (cable ties or staples/ nails to fix)

Function: creates a temporary fence to provide a pooling function that allows silt to drop from suspension

Disposal: all materials fully reusable or recyclable



Shorter J shaped runs of silt fence typically provide more effective pollution control than longer runs



Silt Fence can be used as a temporary measure to prevent muddy water escaping from construction sites

10 TIPS for successful Silt Fence deployments:

- Fence posts should be spaced a maximum of 1.5m apart
- Silt Fence should be trenched a minimum of 20cm into the ground and compacted
- Shorter 'J shaped' installations of Silt Fence act like mini-retention areas and are typically more effective than longer runs (as shown in the diagram above)
- Longer runs of silt fence will concentrate water in the lowest point, where the fence can become weakened and water can undercut or overflow the fence avoid these where possible
- Water flowing around the edges of silt fence can cause erosion and add to the pollution loading from site
- The lower part of the end of each run of silt fence should ideally be above the top of the middle section of the run
- Removal of accumulated silt and regular inspection are key maintenance activity for silt fence. A named individual should be responsible for this action on site
- Silt fences are not designed to handle continuous high volume flows and will not be an effective stand-alone control in these circumstances
- Factors such as soil type, slope angle and slope length are key factors in determining how much silt fence is needed on site
- If ground conditions are clayey Silt Fence alone is unlikely to be an effective pollution control

for technical support and sales of Silt Fence contact frog environmental
0345 057 4040
info@frogenvironmental.co.uk
www.frogenvironmental.co.uk
@frogenv

Wales: Llanwrda, Dyfed SA19 8NA
Midlands: The Byre, Blakenhall Park, Barton Under Needwood, Staffordshire, DE13 8AJ







Terrastop™ Silt Fences

Hy-Tex Terrastop™ Silt Fences are specialised silt fence fabric used as an entrenched interceptor fence to control pollution caused by silt laden construction site stormwater run-off.

The Problem

Many construction, forestry and farming activities result in disturbed or bare ground that is vulnerable to weather erosion. The silt laden run-off, plus site debris and other pollutants, often contaminates surrounding land, rivers, streams, lakes and drains - resulting in significant environmental diffuse pollution and potentially costly fines.

However, due to the on-going nature of such work, it is generally not possible to protect exposed surfaces until the project is complete. So stormwater from such sites represents a major non-point source of diffuse water pollution in the UK.

The Solution

Terrastop™ Premium is a special, high quality, permeable, technical filter fabric for stormwater surface runoff pollution management. Terrastop™ can be installed as an entrenched vertical entrapment fence, and is designed to intercept and detain stormwater run-off, trapping harmful silt through settlement and filtration before it leaves the site.

Hy-Tex Terrastop™ Premium, and HighFlow silt fences, offer a proven, practical, economic and effective method to reduce stormwater run-off pollution from such locations. While Terrastop™ Basic offers a budget option for low risk, small scale projects, with less stringent environmental requirements such as domestic use.

The benefits of the silt fence are increasingly becoming recognised in Britain: The Environment Agency/SEPA Pollution Prevention Guidelines (PPG5) now recommend the use of silt fences to reduce silt transport from exposed ground and stock piles; and research at The James Hutton Institute, using Terrastop silt fencing, demonstrated that even after post-harvest contour grubbing of potato fields an estimated 80 tonnes of soil containing 60-70 kg phosphate-P contaminants was trapped from a 17ha field [Dr Andy Vinten].

Silt fences have also been used extensively in other countries for many years, and their proven performance (Intercepting up to 86% of suspended solids [Horner et al. 1990]) has made them a standard Best Management Practice on a diverse range construction projects, while in-depth research and practical experience has identified the most important characteristics for effective results.

Kirsty Liddon's Edinburgh University Dissertation "Prevention of Diffuse Pollution from Active Forestry Harvesting Sites:" concluded "the Hy-Tex [Terrastop Premium] material appears to be the most suitable material for use as sediment retention as it has the most consistent performance between differing soil types retaining the highest volumes of sediment for both gley and peat solutions."

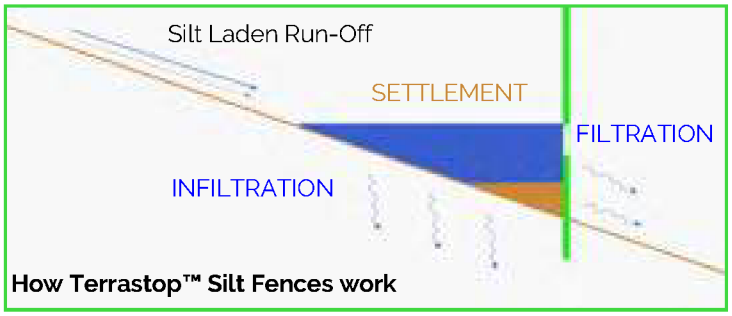
Application Categories: Sediment Pollution Control

Hy-Tex (UK) Limited
Aldington Mill, Mill Lane,
Aldington, Ashford, Kent
TN25 7AJ

01233 720097
sales@hy-tex.co.uk
www.hy-tex.co.uk
01233 720098

FSC · Constructionline Part of Capita plc · British Association Landscape Industries · ncqa ISO 9001 Registered Quality Management · UKAS Management Systems

© Copyright 2023. All rights reserved. Company No 02597134



How Terrastop™ Silt Fences work

Terrastop™ Premium (GR180)

CE

1137-CPR-0613/29

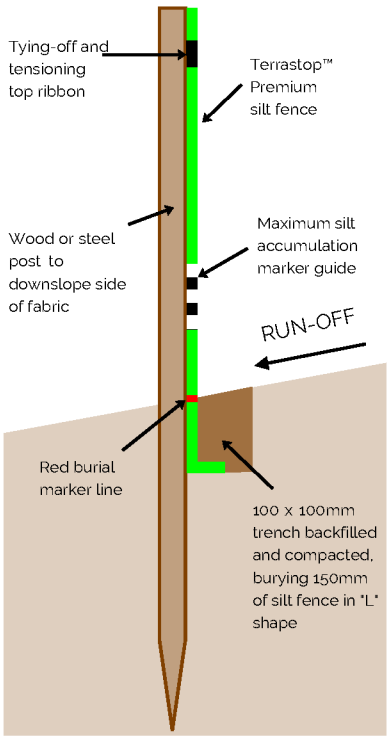
Features/Benefits:

- Burial depth and max silt height marker lines
- Top tying-off + tensioning ribbon
- Fibrous weft yarn provides excellent filtration (Premium)
- Proven performance
- Traps harmful silt via settlement and filtration
- Purpose designed for application
- High tensile strength
- UV Stabilised
- Non fraying reinforced edges
- High quality weave
- Exceptional balance of permeability vs filtration


Terrastop™ Premium


Terrastop™ HighFlow


Terrastop™ Basic



Feature	Terrastop™ Premium (Terrasilt GR180)	Terrastop™ HighFlow	Terrastop™ Basic (Terrasilt GR90)
Tensile Strength	22kN/m	32kN/m	21kN/m
Puncture Resistance (CBR)	3,500N	3,700N	1,600N
Permeability (ISO 11058)	21 l/m².s (45 l/m².s to AS 3706.9)	190 l/m².s	21 l/m².s
Opening Size (ISO 11058)	180µm	320µm	310µm
Weight	200g/m²	145g/m²	88g/m²
Material	1000µ thick, green/black, 400kLy UV stabilised, polypropylene, tear resistant non-fraying edges.	500µ thick, green/black, 450kLy UV stabilised, polyethylene, tear resistant non-fraying edges.	500µ thick, green/black, 400kLy UV stabilised, polypropylene, tear resistant non-fraying edges.
Roll Size	0.75 x 100m	1.00 x 100m	0.75 x 100m
Other Key Features:	Fibrous weft yarn, burial depth and max silt height marker lines, top tying-off + tensioning ribbon.		Burial depth and max silt height marker lines,

Application Categories: Sediment Pollution Control

Hy-Tex (UK) Limited
Aldington Mill, Mill Lane,
Aldington, Ashford, Kent
TN25 7AJ

01233 720097
sales@hy-tex.co.uk
www.hy-tex.co.uk
01233 720098

FSC | Constructionline Part of Capita plc | British Association Landscape Industries | ncqa ISO 9001 Registered Quality Management | UKAS Management Systems

© Copyright 2023. All rights reserved. Company No 02597134

Terrastop™ Silt Fence Installation Guidelines

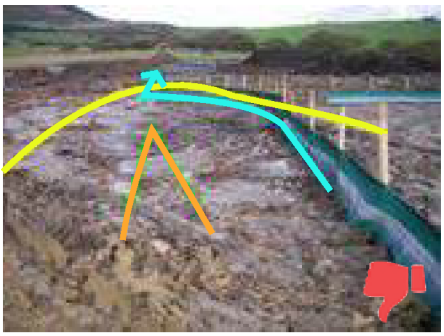
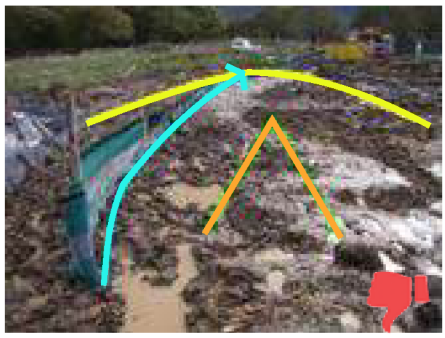
Position Fence





- Fence is centred and at right angles to flow

Orange lines highlight the slope direction


- Runoff follows the fence line making erosion worse

Yellow lines depicts the correct positioning

Blue lines is the water runoff direction

Join Fences



Fold edges on one another several times & then fixed.



Gaps allow sediment to pass through.

Trench In



Bottom buried up to red line & backfill firmly compacted.



Not buried deep enough & ground poorly compacted.

Application Categories: Sediment Pollution Control

Hy-Tex (UK) Limited
Aldington Mill, Mill Lane,
Aldington, Ashford, Kent
TN25 7AJ

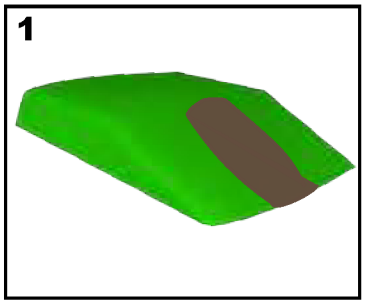
01233 720097
sales@hy-tex.co.uk
www.hy-tex.co.uk
01233 720098

FSC | Constructionline Part of Capita plc | British Association Landscape Industries | ncqa ISO 9001 Registered Quality Management | UKAS Management Systems

© Copyright 2023. All rights reserved. Company No 02597134

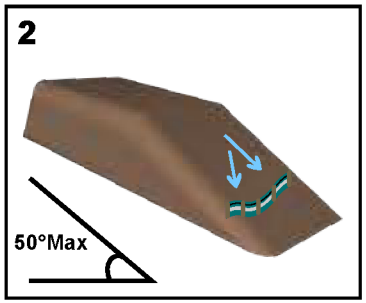
Terrastop™ Silt Fence Installation Guidelines

1



- Find where erosion may occur.
- Look for areas where soil has been disturbed or vegetation removed.

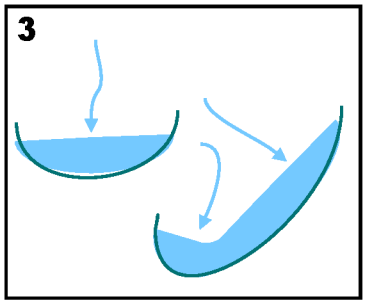
2



- Maximum 50° slope angle
- Not suitable for channels or ditches

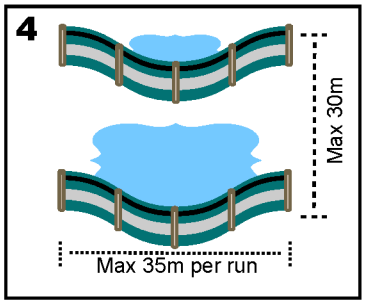
Use Ultra Erosion Guards for steeper slopes and channels.

3



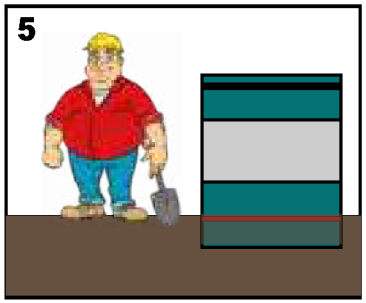
- Check where water is running
- Position fence central and at right angles to flow
- Curve fence ends up slope to form 'smiles' or 'J' shapes so water ponds behind fence

4



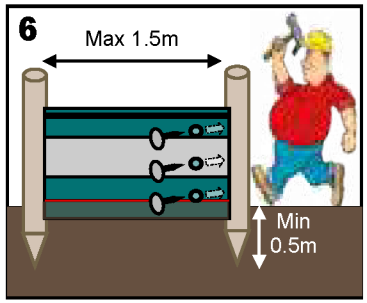
- Maximum 35m fence runs
- Maximum 30m between fence rows
- Add extra fences above and to the side for larger areas

5



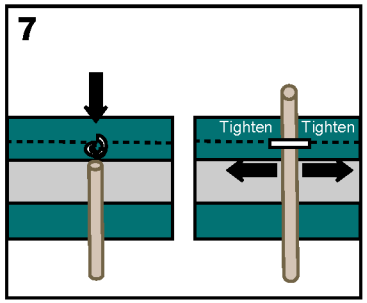
- Dig 100mm trench or use a trenching machine.
- Bury fence up to the red line.
- Make sure backfill is on upslope side of fence.
- Firmly compact.

6



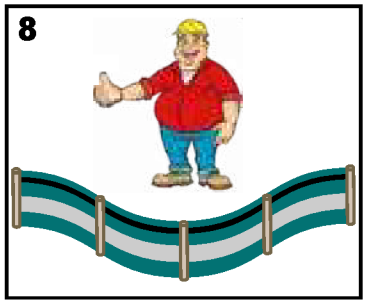
- Position posts on downslope side of fence
- Max 1.50m post spacing
- Min 0.50m in ground.
- Secure with 3 nails and washers per post or use cable ties
- Post size minimum 1.20m long and 50mm diameter

7



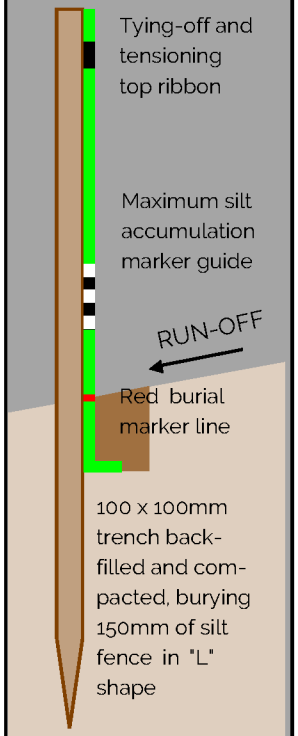
- Tension top edge by looping ribbon band over post.
- Add additional bracing posts for poor ground conditions

8



- Regularly check site
- Reassess for new areas of erosion and add extra fences as needed
- Repair any damage.
- Remove trapped silt when reaches top of white band or install additional fences.

Terrastop™ Silt Fence Installation Guidelines



Application Categories: Sediment Pollution Control

Hy-Tex (UK) Limited
Aldington Mill, Mill Lane,
Aldington, Ashford, Kent TN25 7AJ

01233 720097
sales@hy-tex.co.uk
www.hy-tex.co.uk
01233 720098

FSC www.fsc.org FSC® C109654 The mark of responsible forestry

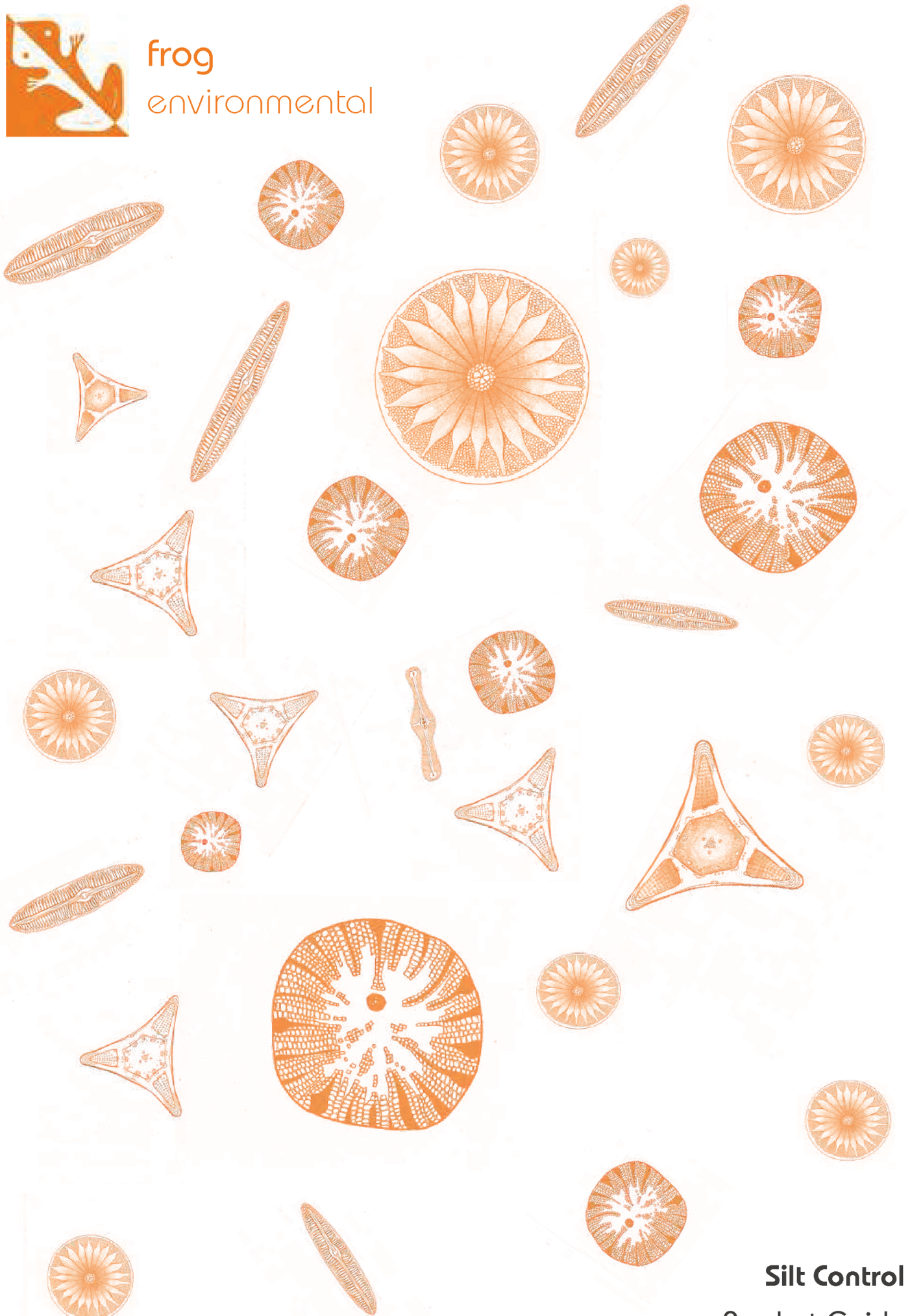
Constructionline Part of Capita plc

nqa ISO 9001 QUALITY MANAGEMENT | UKAS MANAGEMENT SYSTEMS 015

British Association Landscape Industries

© Copyright 2023. All right reserved. Company No 02597134

frog
environmental



Silt Control

Product Guide

frog environmental are specialists when it comes to sediment control and water quality. We are professional environmentalists, here to help you protect and conserve the environment.



SiltMat

- Captures sediment and prevents resuspension in high flows
- Proven in the field to reduce downstream sediment pollution
- Each 2 x 1 metre mat can capture over 40 kg of silt
- Easily deployed on site, in ditches, channels and watercourses



Floc Mat™

- Treats and polishes muddy water from construction sites
- Active ingredient binds sediment and enables separation of silt from water
- Versatile product with a wide range of sediment control applications
- Deployed on land and in drainage channels to clean muddy water before it is discharged



Silt Wattle

- Reduces flow rate and aids natural sediment collection
- Filters water and traps sediment, reducing downstream levels of TSS
- Durable solution that can be left on site over a period of months
- Deployed on slopes, in ditches and channels and used as a boundary protection



Treated Geo-Jute™

- Polishes water in discharge channels from lagoons and settlement ponds
- Rolled product, easy to handle and deploy
- Active ingredient binds and traps sediment, preventing downstream pollution
- Biodegradable and disposable to bankside (with correct permit)

We provide simple, effective and good value sediment management interventions that are easy to use and designed to reduce pollution from construction activities.



Water Lynx Blocks

- Environmentally friendly flocculant blocks safe to use in site drainage
- Different blends to suit site-specific water and soil chemistry
- Binds fine clays and silt making it easier to capture and remove
- Deployed in ditches upstream of settlement ponds



Pipe Reactor™

- Pumped system using Water Lynx to separate water from sediment
- Highly portable, used for dewatering muddy excavations on construction sites
- Fits to standard 2, 3 or 4 inch pump
- Deployed with silt capture products to capture flocculated particles



Silt Capture Channel

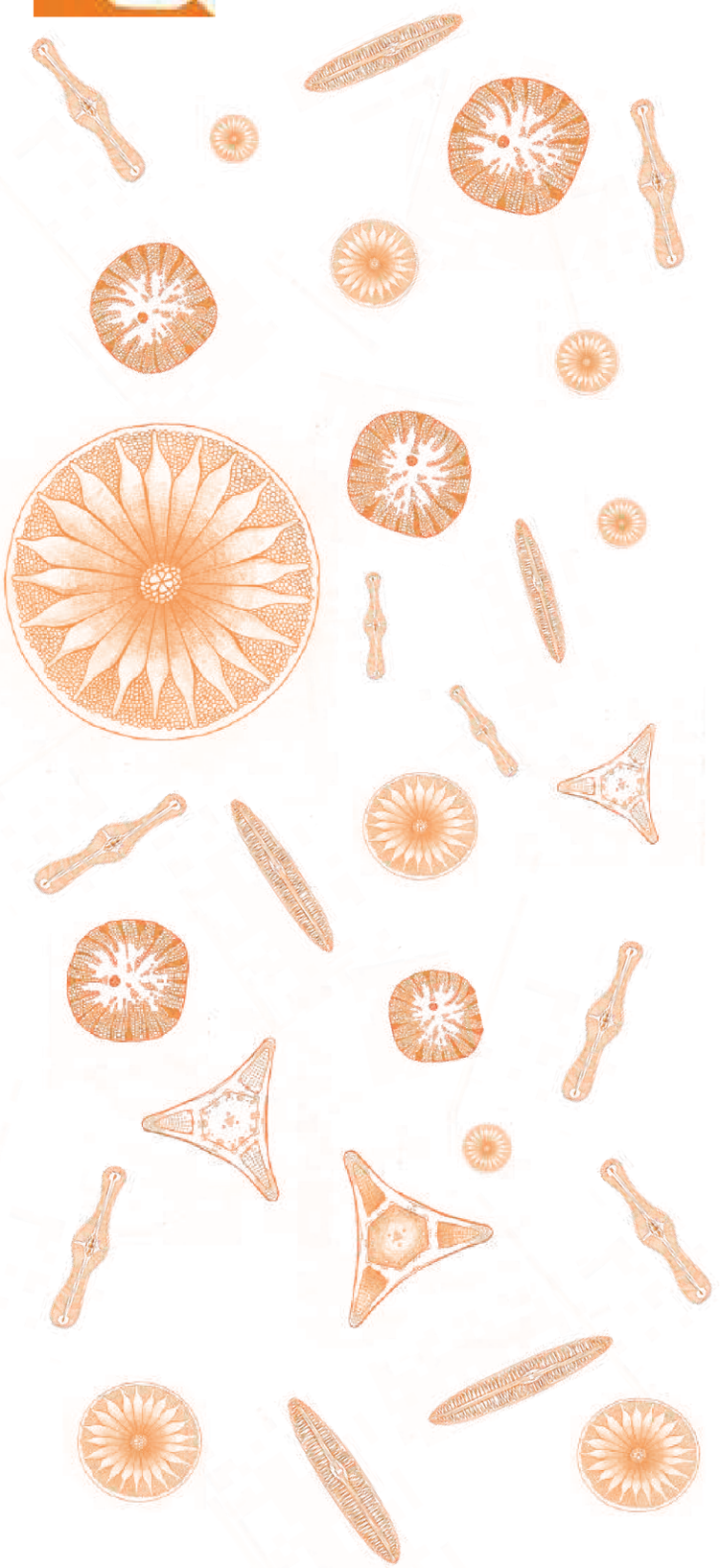
- Uses Floc Mat, SiltMat, Silt Wattles and Treated Geo-Jute to create bespoke silt treatment
- Captures and binds silt, cleaning muddy construction site water
- Easily monitored with consumable products replaced quickly & simply
- No ground disturbance or excavations required



Silt Net

- Improves performance of settlement ponds and lagoons
- Semi-permeable barrier treated with active ingredient to help bind sediment
- Highly durable solution using combination of biodegradable natural fibres
- Deployed across the width of treatment ponds to capture silt

frog environmental



Sediment is widely acknowledged as being the most common pollutant arising from construction activities.

frog environmental has developed a sediment control product range designed to reduce pollution, improve environmental compliance and support the good performance and reputation of our clients.

As well as researching and developing our own products, frog environmental act as the exclusive distributor for product designers and manufacturers who share our ethos of providing low carbon, simple and effective sediment control solutions.

Most of our solutions can be implemented with minimal guidance. These are typically available at short notice and provide a quick and effective approach to preventing sediment pollution.

Many projects require a site-specific approach to sediment management and water quality. frog environmental can provide technical support and an efficient sampling service to help provide the most effective solution for your site.

For advice on preventing sediment pollution, contact frog environmental

0345 057 4040
info@frogenvironmental.co.uk
www.frogenvironmental.co.uk
@frogenv

Wales: Banc y Berllan, Llansadwrn, Llanwrda, Dyfed SA19 8NA
Midlands: The Byre, Blakenhall Park, Barton Under Needwood, Staffordshire, DE13 8AJ

Printed on recycled paper

CLEARFLOW Enviro Systems Group Inc.

Keyline

Working in partnership

Artwork by Siobhan Fedden

frog environmental
silt control, water quality & bubble curtain specialists

product information sheet

Silt Wattle

silt control product



Silt Wattles are a versatile silt control device.

They are deployed on building sites to control movement of suspended silt and in ditches, channels and streams to slow the flow and naturally capture silt.

Silt Wattles are often deployed with frog environmental SiltMats™ and FlocMats™ as part of a silt pollution prevention strategy.

Applications

- Silt Wattles can be used to reduce silt release into watercourses from construction sites and deployed directly in channel to reduce movement of suspended silts.
- The tough exterior netting means they can be left for months on site with out degradation, whilst the biodegradable treated wood fibre continues to slow the flow and trap silt particles.
- Silt Wattles mould to the shape of the river bed or ground and can be joined end on end or pyramided to help clean dirty water.
- Wattles are highly versatile and can be weighted or staked in position depending on bed/ground conditions and flows.
- Silt Wattles can be joined end of end to create temp low flow channel and protect rivers from pollution arising from bank works.

Silt Wattles are a versatile product suitable for use in a wide range of silt control applications on construction sites and in river works

Technical information

Silt Wattle

Dry Weight p/m: 200mm – 10kg 300mm – 15kg 450mm – 20kg

Material used: Dried and treated wood chip (98%), polypropylene netting 2%

Function: Slow the flow of muddy water and prevent silt pollution on construction sites, in ditches and streams.

Can be used to segregate low flow channel to in bankside works.

Disposal: Netting is fully recyclable, contents fully biodegradable*.

Used in combination with: Silt Mat™, Silt Fence, Floc Mat™, Bubble Curtains using Bubble Tubing® technology

Placement of any materials in a river even on a temporary basis can increase flood risk. It is important to work with the regulator on managing flood risk when planning pollution mitigation. If in doubt contact us for advice and pollution control options. Ensure captured silts are non-hazardous prior to disposal or reuse on site under permit.









for technical support and sales of Silt Wattle contact frog environmental

0345 057 4040

info@frogenvironmental.co.uk

www.frogenvironmental.co.uk

frog environmental
silt control, water quality & bubble curtain specialists

product information sheet

SiltMat™

silt capture mat



Silt Mat is a fully biodegradable mat that captures and prevents sediment resuspension.

The mats can be placed in natural or artificial channels, ditches or directly on land to trap suspended sediments.

Silt Mat can be orientated sideways or lengthways and fits into all channel types.

Silt Mats are used to manage sediment release to watercourses from construction sites and for capturing silts suspended by in channel or works on river banks.

Applications

- Silt control from construction sites
- Silt control from river or bank works
- Deployed in rivers, streams and ditches
- Deployed in Silt Capture Channels
- Used in forestry and agricultural applications

Silt Mat is proven in the field to reduce downstream levels of suspended solids

Technical information

SiltMat™

Dimensions: 2 x 1 x 0.12 metres

Dry Weight: 12kg per mat

Material used: coir (80%) jute (20%)

Function: Captures and prevents resuspension of silt

Performance: A single mat captures up to 40kg of silt

Disposal: Fully biodegradable, with correct permissions mats can be seeded and left onsite.





four step guide to using SiltMats

Use our reference table (below) to judge optimal placement. As a rule of thumb, SiltMat is best placed in areas where stream energy is reduced and natural deposition takes place.

SiltMat is unfolded and orientated to cover the width of the channel. The edges of silt mat can be overlaid without gaps. Mats are staked in place or weighted with local material.

SiltMat will trap large amounts of sediment. Stakes or weights are removed and the mats rolled up ready for disposal.

With correct permission SiltMat can be seeded and left on site, creating an environmental enhancement and avoiding disposal costs.

Reference table showing the distance that different particle sizes travel at differing water velocities to help show why silt control products such as Silt Mats are so important for water quality and environmental protection when working in or near water.

Particle Size	Water Speed (m/s)				
	0.2	**0.4**	**0.6**	**0.8**	**1**
Fine Gravel	20 cm	40 cm	60 cm	80 cm	1 m
Sand	70 cm	1.4 m	2.1 m	2.8 m	3.5 m
Fine Sand	8 m	17 m	25 m	33 m	40 m
Silt	228 m	456 m	683 m	911 m	1139 m

for technical support and sales of Silt Mat contact frog environmental

0345 057 4040

info@frogenvironmental.co.uk

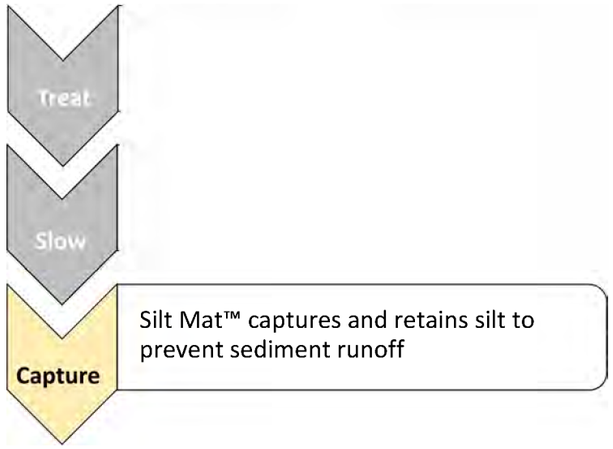
www.frogenvironmental.co.uk

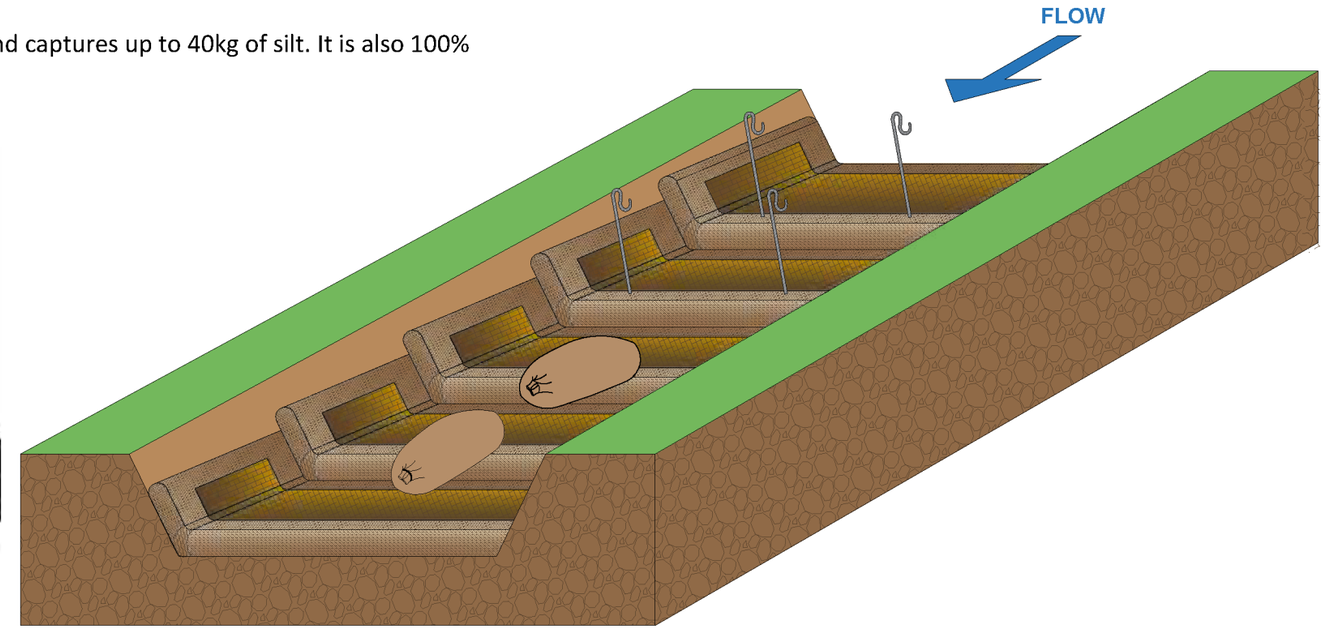
Silt Mat™ Deployment Guidance

Designed by Frog Environmental, Silt Mats™ are a simple, yet effective solution which can be laid in ditches to increase friction and trap silt particles. They also help stabilise the ditch and control erosion.

The mats can be installed either widthways or lengthways along the channel depending on ditch profile and lining.

Silt Mat has a dry weight of 12kg, measures 2m x 1m and captures up to 40kg of silt. It is also 100% biodegradable for easy disposal.









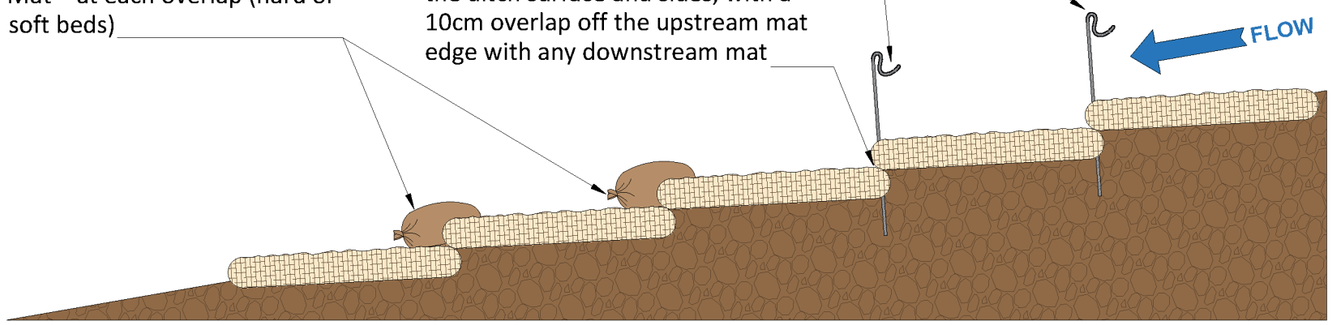
Ditches with greater than a 3' degree slope (5.2% gradient) typically require check dams to reduce the velocity of water

Metal stakes used to hold Silt Mat™ in position (soft beds only). Ensure site has permission to use stakes prior to staking.

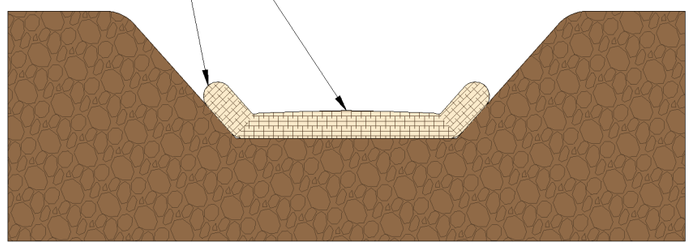
Ensure mats mould to the profile of the ditch and that their corners are elevated up the sides of the ditch to encourage water to flow on top of the mat rather than escaping underneath or at the sides

Sand bags used to weight Silt Mat™ at each overlap (hard or soft beds)

The mat needs to be in contact with the ditch surface and sides, with a 10cm overlap off the upstream mat edge with any downstream mat



2D Side Elevation



2D Cross Section

Drawing Ref: SM-PD-05v1	Frog Environmental
Revision: v1	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

frog environmental

product information sheet

Floc Mat™

water treatment mat



Floc Mat™ is a versatile silt control device

A mat created to treat and capture fine silts and suspended particles in construction site run off.

The main function of the mat is to flocculate very fine particles, making them easier to separate from water.

Floc Mats can be laid flat out in dispersion fields, used with Silt Wattles or silt fence and deployed in the frog environmental Silt Capture Channel as part of a versatile water treatment process to remove silt from construction site run off.

Applications

- In a Silt Capture Channel
- With Silt Wattles and SiltMats
- In site ditches and low flow channels
- In combination with silt fence
- On natural dispersion fields
- In combination with dewatering bags and silt socks

- **Floc Mat™ is a fully biodegradable water treatment and silt capture mat that treats muddy water and helps prevent silt pollution**
- **They are a cost effective way of treating water in ditches and channels, without the need for pumps – saving energy and CO_2**

Technical information

FlocMat™

Dimensions: 2x1 x 0.10m

Variants: FM1 (30g/m2), FM2 (100g/m2) FM0(untreated)

Active ingredient: Water Lynx™

Dry Weight: 12 kg per mat

Material used: coir fibres, coir netting, coir rope, anionic flocculant, water

Function: Water treatment – aids solid water separation. Can be used to segregate low flow channel to in bankside works.

Performance: Single mat captures up to 50kg of silt in live test

Disposal: Fully biodegradable, suitable for re-use on site (with correct permit).

Waste classification and disposal legislation must be followed at all times. Always liaise with the regulator before deploying a product containing flocculant. If in doubt contact frog environmental on 0345 0574040 for further information and advice.



Close up FlocMat showing accretion of silt



Deployed in Silt Capture Channels with Silt Wattles

100% sustainably sourced natural fibres are used to create Floc Mat, this ensures the mats are biodegradable and suitable for use as backfill material once used, reducing waste disposal costs. Floc Mat is available in treated and untreated forms.

The fibres of the treated version of Floc Mat are coated with Water Lynx™, a non-hazardous, non-toxic, synthetic anionic polymer which contains no coagulants, cations or metals such as Al and Fe that are ecotoxic.

When deployed in a Silt Capture Channel the Floc Mat provides a safe, low carbon and easy solution to support the removal of suspended solids and associated pollutants from construction site run off.



Deployed to treat muddy excavation water

for technical support and sales of Silt Wattle contact frog environmental

0345 057 4040

info@frogenvironmental.co.uk

www.frogenvironmental.co.uk

@frogenv

Wales: Llanwrda, Dyfed SA19 8NA

Midlands: The Byre, Blakenhall Park, Barton Under Needwood, Staffordshire, DE13 8AJ

Floc Mat® Deployment Guidance

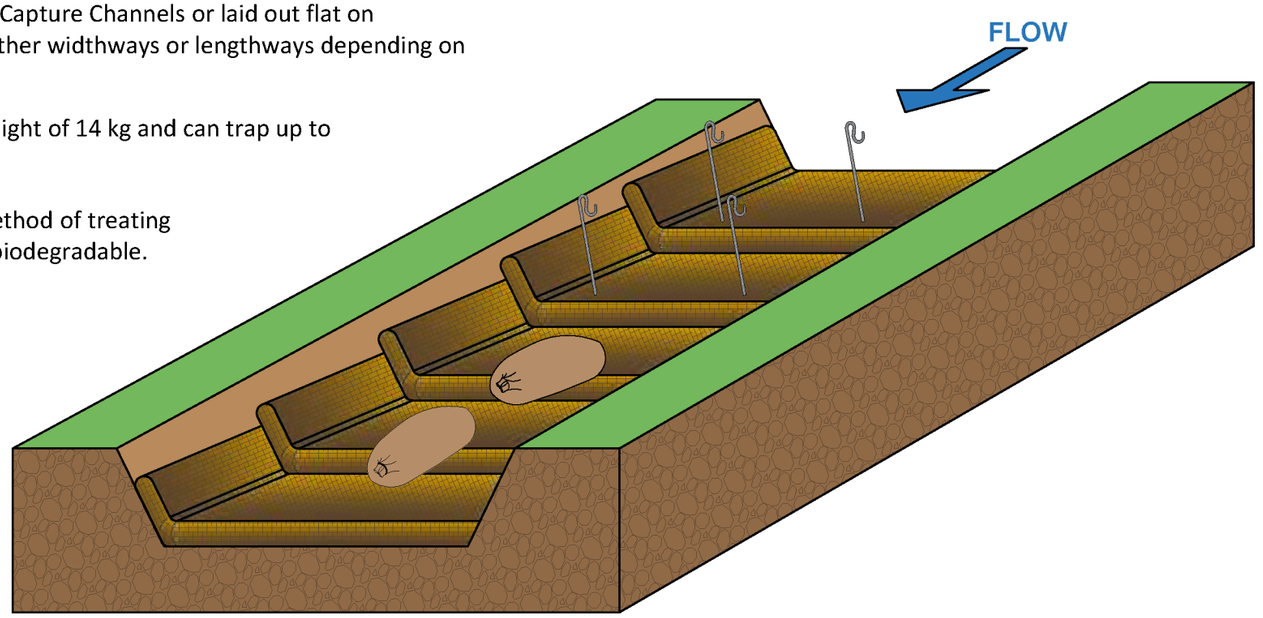
Designed by Frog Environmental, Floc Mat is an environmentally-friendly water treatment and silt capture mat that treats muddy water and prevents silt pollution.

The mat fibres are coated with Clearflow Gel Flocculant, an environmentally safe product that is highly effective at treating fine silt and clay particles on construction sites.

Floc Mats can be deployed in ditches and Silt Capture Channels or laid out flat on dispersion fields. The mats can be installed either widthways or lengthways depending on ditch profile and lining.

Each mat measures 2 x 1 metres, has a dry weight of 14 kg and can trap up to 50kg of silt.

Floc Mat is a low carbon and cost effective method of treating construction site run off. The product is fully biodegradable.







Treat

Floc Mat™ treats runoff by binding sediment, aiding deposition, and improving water clarity

Slow

Capture

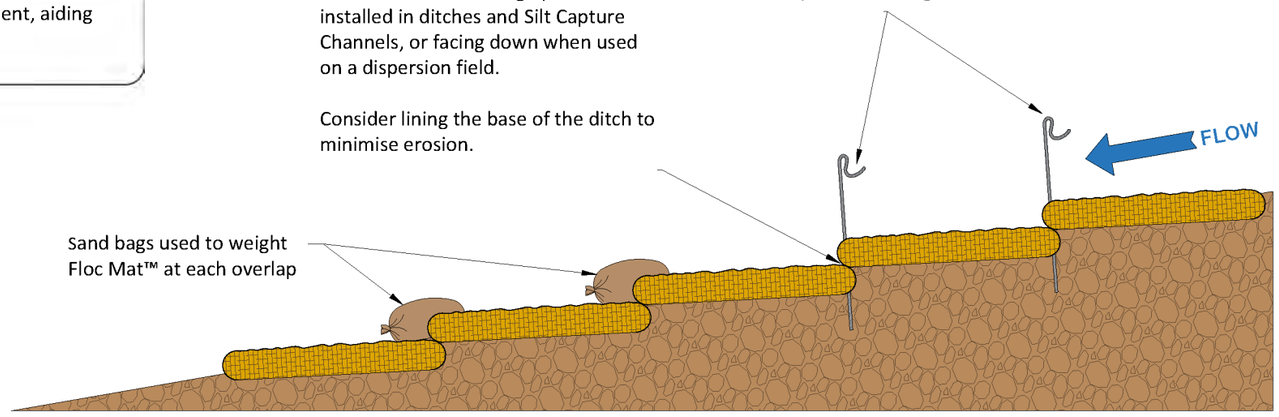
Ditches with greater than a 3 degree slope (5.2% gradient) typically require check dams to reduce the the velocity of water over Floc Mat™.

For effective deployment, the edges of Floc Mat™ should overlap by approximately 15cm. Ensure the sticky side of the mat is facing up when installed in ditches and Silt Capture Channels, or facing down when used on a dispersion field.

Consider lining the base of the ditch to minimise erosion.

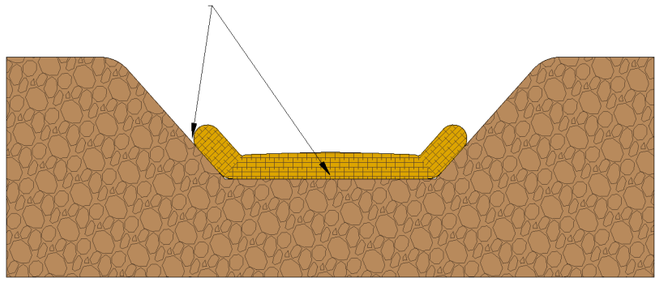
Metal stakes can be used to hold Floc Mat™ in position (soft beds only). Ensure site has permission to use stakes prior to staking.

Sand bags used to weight Floc Mat™ at each overlap



2D Side Elevation

Ensure Floc Mats™ are moulded to the profile of the ditch. This will allow water to flow on top of the mat rather than flowing underneath or around the sides.



2D Cross Section

The use of flocculants on construction sites requires permission from the environmental regulator. Proceeding with deployment of a flocculant without regulatory permission is not advised.

Drawing Ref: FM-PD-02v1	Frog Environmental
Revision: v1	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

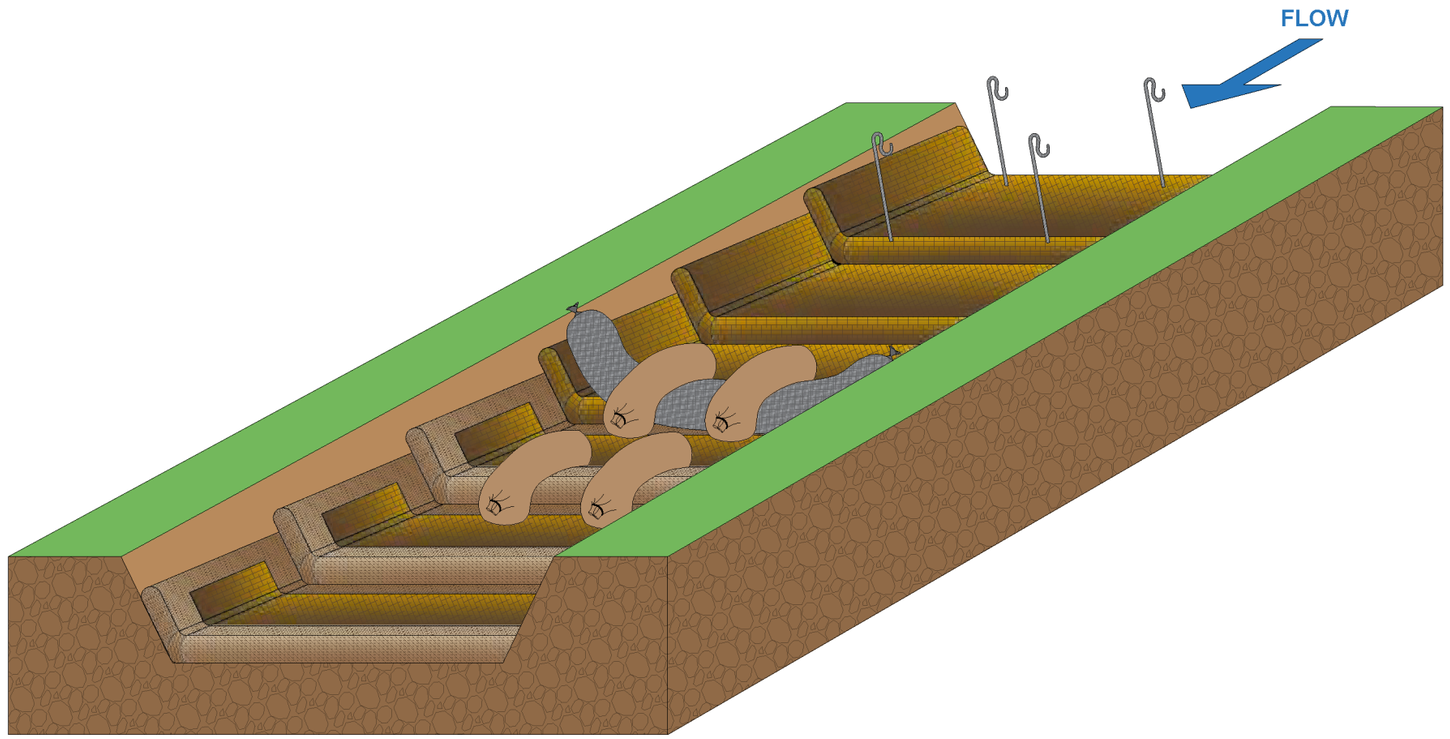
In-ditch Polishing Point

Frog Environmental's Floc Mat®, Silt Wattle and Silt Mat™ combine to make a Silt Treatment Point which manages fine mobilised silt particles, typically generated by clayey subsoils.

In-ditch Polishing Point works passively and does not require pumps to generate flow, making them a low carbon water treatment option.

The treatment points can be deployed in ditches, swales or areas where silty water is present. Multiple points can be used to provide a scalable approach for treating silty surface water.

Every site is different, for advice on optimal placement for treatment points, contact our technical team.



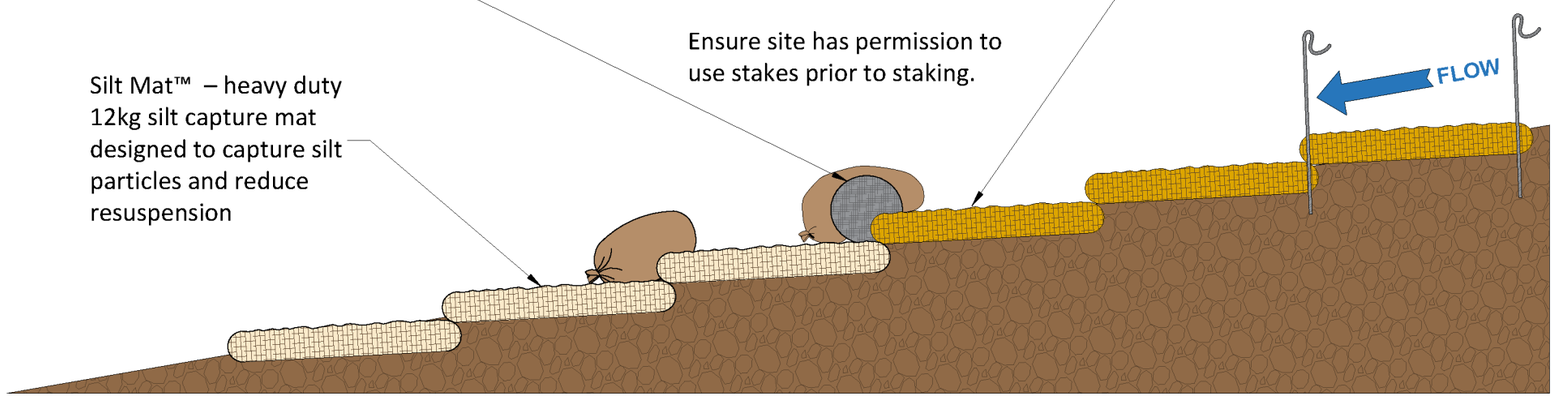
Silt Wattle - a permeable barrier that moulds to the shape of the ditch, slows the flow and improves treatment

Silt Mat™ – heavy duty 12kg silt capture mat designed to capture silt particles and reduce resuspension

Metal stakes can be used to hold the mats in position (soft beds only). Alternatively, use sandbags on hard beds. Use two sandbags on the leading edge of the mat.

Ensure site has permission to use stakes prior to staking.

Floc Mat™ - a heavy duty silt treatment mat containing anionic Gel Flocculant to bind particles



2D Side Elevation

Three of Frog Environmental's products perform different functions at the treatment point:

- **Treat** • Floc Mat™ treats fine particles
- **Slow** • Silt Wattle slows the flow
- **Capture** • Silt Mat™ captures silt and reduces resuspension

Key deployment tips

- Consider lining the base of the ditch to minimise erosion.
- The edges of the mats should overlap by approximately 10cm.
- Ensure mats mould to the profile of the ditch to allow water to flow on top of mat rather than underneath or around the sides.
- Ditches with greater than a 3 degree slope (5.2% gradient) typically require check dams to reduce the velocity of water.
- Maximum water depth flowing over mats should be no more than 20cm.

Drawing Ref: STP-TD-01v1	Frog Environmental
Revision: v1	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

Gel Flocculant Deployment Guidance

Gravity-fed treatment via manhole

Designed by Frog Environmental, using Clearflow Gel Flocculant, this system is used on construction sites to perform separation of fine silts and clayey soils from surface water run-off.

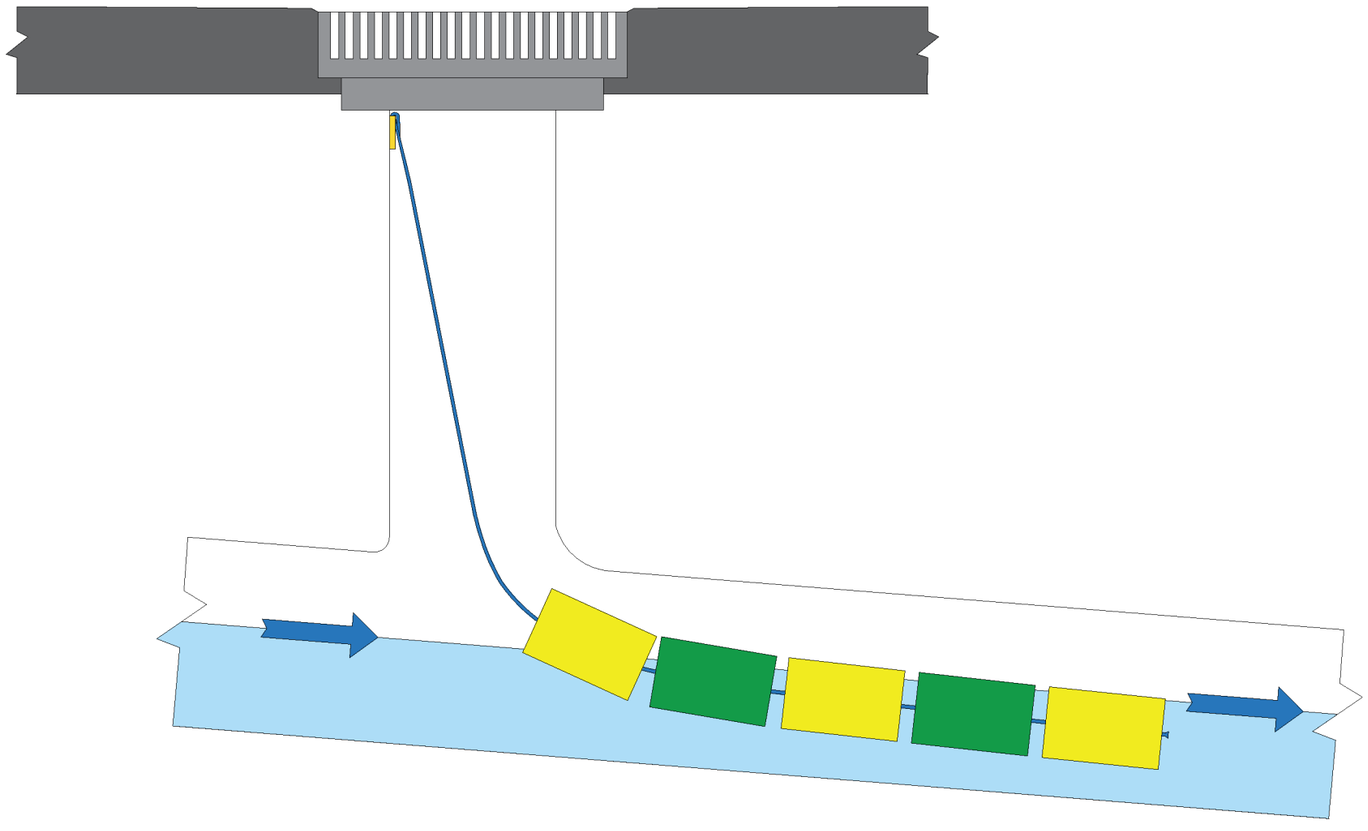
This deployment guide shows how Gel Flocculant can be installed as a low carbon water treatment solution in pipework, negating the need for pumps.

Gel Flocculant is left in situ 24/7, activating on contact with flowing water. This ensures a continuous cost-effective 'rain ready' approach to the management of water quality on site.

Depending on flow rates and silt loading, each block can last up to 120 days and treats water at 200 litres per minute.

Regulatory approval is required prior to the deployment of Gel Flocculant on a construction site. Contact our technical team for specification support, settlement tests and management calculations.

Prior to deployment, consult your Surface Management Plan to confirm your site-specific deployment locations.



2D Side Elevation



Treat — Gel Flocculant treats incoming runoff as it enters the drainage system

Slow — Attenuation features (eg pond, tank, swale) downstream of deployment locations slow the flow

Capture — Flocculated particles naturally settle out of suspension in the attenuation feature

Drawing Ref: GF-PD-14v1	Frog Environmental
Revision: v1	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

Gel Flocculant Deployment Guidance

Gravity-fed bunded attenuation structure

Designed by Frog Environmental, using Clearflow Gel Flocculant, this system is used on construction sites to perform the separation of fine silts and clayey soils from surface water run-off.

This deployment guide shows how Gel Flocculant can be installed as a low carbon water treatment solution in pipework, negating the need for pumps.

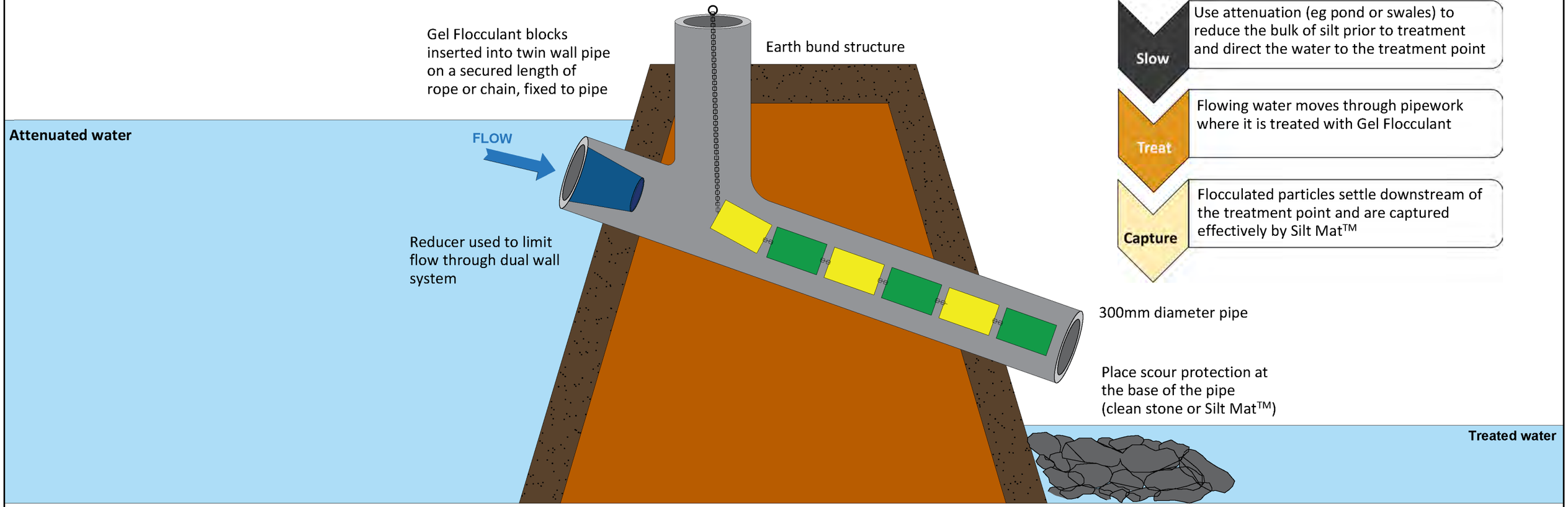
Gel Flocculant is left in situ 24/7, activating on contact with flowing water. This ensures a continuous cost-effective 'rain ready' approach to the management of water quality on site.

Depending on flow rates and silt loading, each block can last up to 120 days and treats water at 200 litres per minute.

Regulatory approval is required prior to the deployment of Gel Flocculant on a construction site. Contact our technical team for specification support, settlement tests and management calculations.







Slow — Use attenuation (eg pond or swales) to reduce the bulk of silt prior to treatment and direct the water to the treatment point

Treat — Flowing water moves through pipework where it is treated with Gel Flocculant

Capture — Flocculated particles settle downstream of the treatment point and are captured effectively by Silt Mat™

2D Side Elevation

Drawing Ref: GF-PD-10v1	Frog Environmental
Revision: v5	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

Gel Flocculant Deployment Guidance

Gravity-fed in-ditch treatment





Designed by Frog Environmental, using Clearflow Gel Flocculant, this system is used on construction sites to perform the separation of fine silts and clayey soils from surface water run-off.

This deployment guide shows how Gel Flocculant can be installed as a low carbon water treatment solution in pipework, negating the need for pumps. Gel Flocculant is left in situ 24/7, activating on contact with flowing water. This ensures a continuous cost-effective 'rain ready' approach to the management of water quality on site.

Depending on flow rates and silt loading, each block can last up to 120 days and treats water at 200 litres per minute.

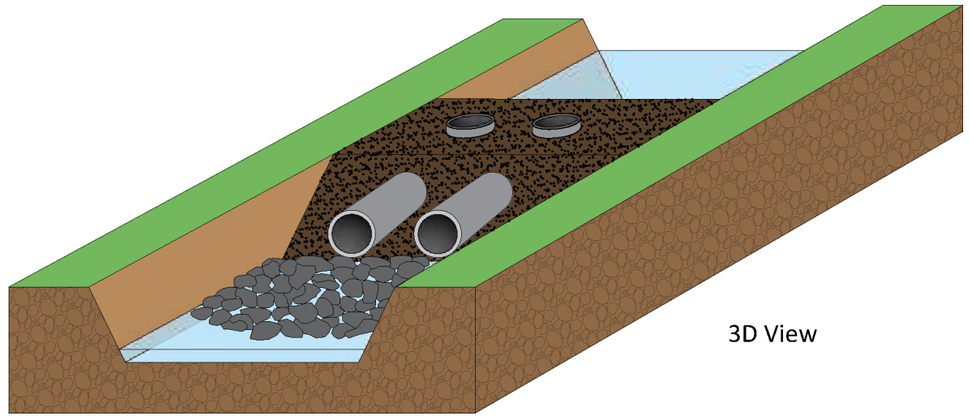
Regulatory approval is required prior to the deployment of Gel Flocculant on a construction site. Contact our technical team for specification support, settlement tests and management calculations.

Prior to deployment, consult your Surface Management Plan to confirm your site-specific deployment locations.

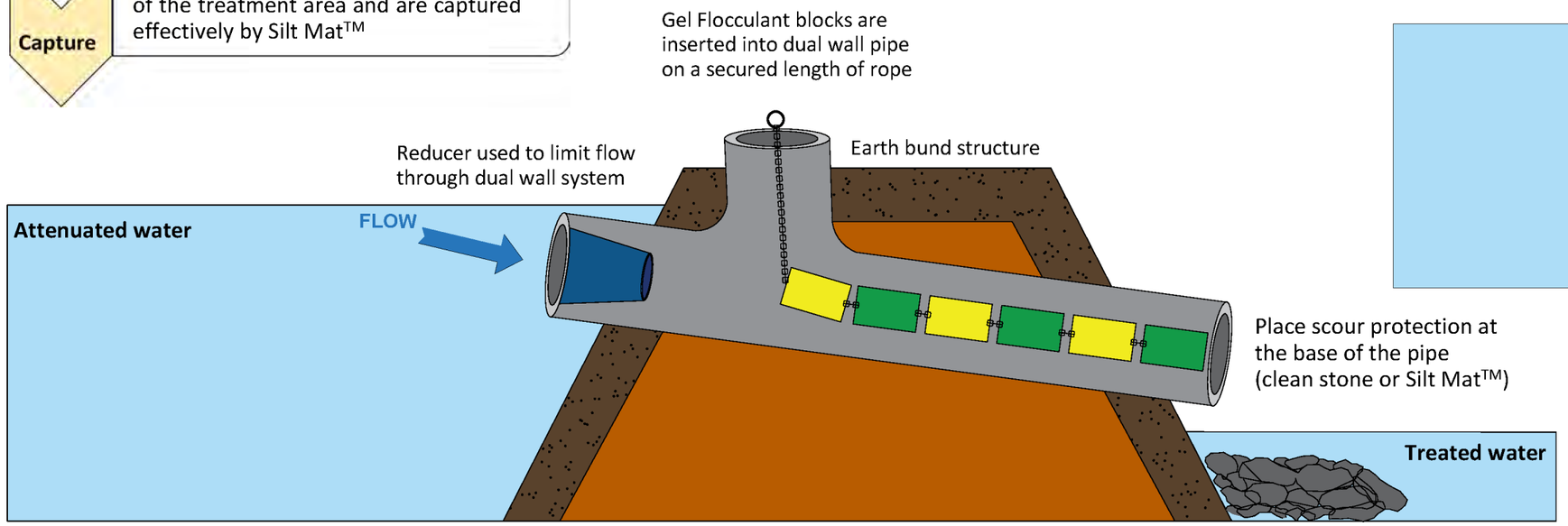
Slow — Use attenuation (eg pond or swales) to reduce the bulk of silt prior to treatment and direct the water to the treatment point

Treat — Flowing water moves through pipework where it is treated with Gel Flocculant

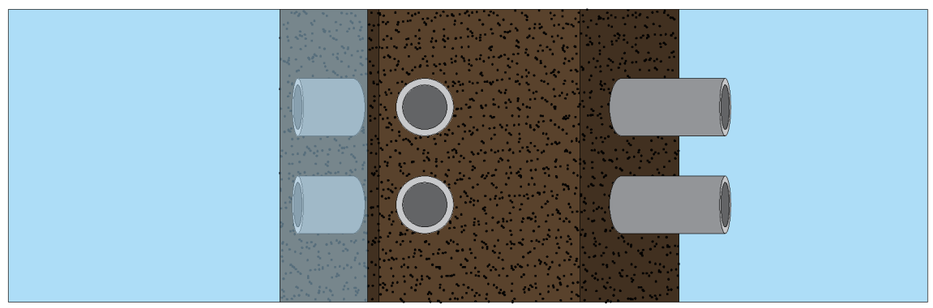
Capture — Flocculated particles settle downstream of the treatment area and are captured effectively by Silt Mat™



3D View



2D Side Elevation



Plan View

Drawing Ref: GF-PD-11v0	Frog Environmental
Revision: v5	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

Gel Flocculant Deployment Guidance

Gravity-fed in-ditch sandbag check dam





Designed by Frog Environmental, using Clearflow Gel Flocculant, this system is used on construction sites to perform separation of fine silts and clayey soils from surface water run-off.

This deployment guide shows how Gel Flocculant can be installed as a low carbon water treatment solution in pipework, negating the need for pumps.

Gel Flocculant is left in situ 24/7, activating on contact with flowing water. This ensures a continuous cost-effective 'rain ready' approach to the management of water quality on site.

Depending on flow rates and silt loading, each block can last up to 120 days and treats water at 200 litres per minute.

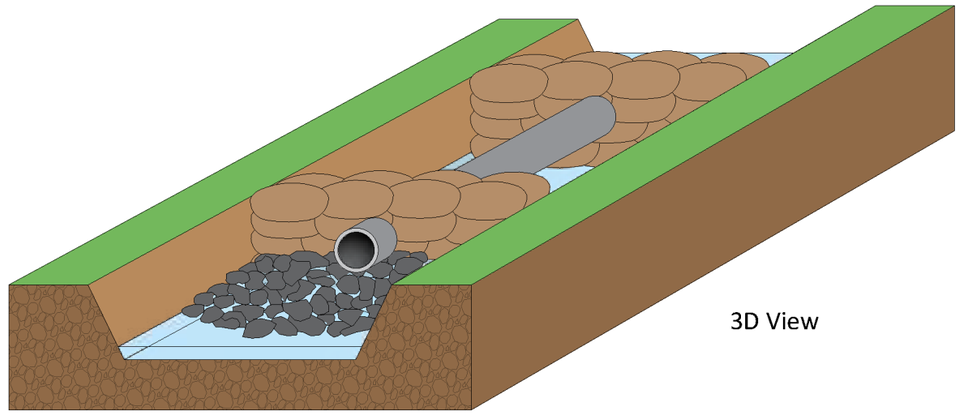
Regulatory approval is required prior to the deployment of Gel Flocculant on a construction site. Contact our technical team for specification support, settlement tests and management calculations.

Prior to deployment, consult your Surface Management Plan to confirm your site-specific deployment locations.

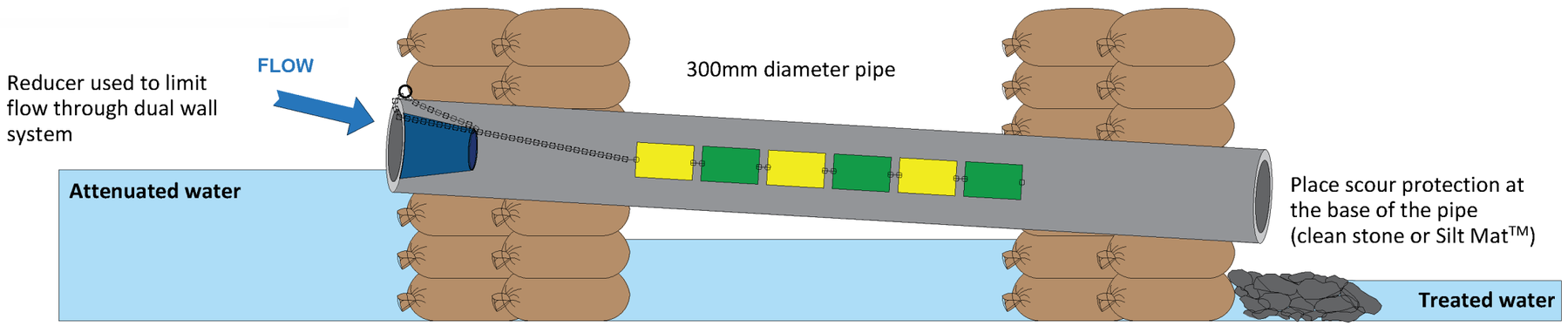
Slow — Use attenuation (eg pond or swales) to reduce the bulk of silt prior to treatment and direct the water to the treatment point

Treat — Flowing water moves through pipework where it is treated with Gel Flocculant

Capture — Flocculated particles are captured downstream of treatment. Silt Mat™ can be used for increased performance.



3D View



2D Side Elevation

Drawing Ref: GF-PD-12v1	Frog Environmental
Revision: v4	
Scale: Drawings not to scale	

Drawings are for guidance only, not for construction purposes. Ensure risk has been assessed prior to deployment of products supplied by Frog Environmental. Further advice available by contacting us at www.frogenvironmental.co.uk/contact-us

©Frog Environmental 2024. No reproduction or re-use without the express written permission of Frog Environmental. All rights reserved.

Hy-Tex **Pro-Tex Dewatering Socks** for Pumped Sediment Control

☑ **Ideal for small dewatering jobs.**

☑ **Traps sediment and oil.**







OIL DETECTION INDICATOR

A light blue paper oil detection strip is attached to each bag



If strip turns **DARK BLUE**
OIL PRESENT
Stop pumping
Contact your Environmental Manager

Pro-Tex Dewatering Socks control pollution caused when pumping dirty water from excavations, and offers an economical alternative to traditional dewatering bags or filtration products.

These easy to use and popular sediment filters bags are ideal for projects with small budgets and minor pollution problems to control of sediment and oil sheen from pumped water.

Designed to attach directly to the discharge pipe, they quickly filter water to help prevent unwanted sediment, silt, debris or pollutants leaving the site in run-off.

The socks have been designed to control pollution caused by pumping dirty water from excavations, trenches, lift shafts, bunds and the like, by filtering out sediment from contaminated water down to 90 micron, while the fabric the socks are constructed from has an inherent ability to absorbs hydrocarbons too.

Advantages

The main advantage of using an Oil & Sediment filter is that it removes hydrocarbons and sediment from pumping activities.

It provides an alternative solution that delivers a considerable cost saving and is user friendly. Furthermore it reduces site time over existing methods such as hiring a vacuum tanker. If you wish to carry out street works with a minimal disruption to the public, this is the ideal solution.

Other benefits include:

- Simple set-up with built in tie
- Hydrocarbon detection strip to identify oil pollution
- Lightweight and compact
- Very easy to empty



Product: Pro-Tex Dewatering Sediment Bag. Premium Pipe Sock.
Application: Oil and Sediment Filter
Effective Pore Size: 90 micron
Sediment Capacity: Approx 18kg
Permeability: 72 litres/m²/sec
Tensile Strength: 19 kN/m
CBR Puncture Strength: 2,900N
Material: UV stabilised. continuous filament, non-woven, needle punched polypropylene fabric.
Bag Size: Approx 1.00 x 0.30m lay flat
Additional Features: Tying cord and hydrocarbon detection strip

©2019 Hy-Tex (UK) Ltd U_PROTEX_SOCK_01. Terms & Conditions apply.

Aldington Mill, Mill Lane,
Aldington, ASHFORD, Kent TN25 7AJ
sales@hy-tex.co.uk www.hy-tex.co.uk

Tel: 01233 720097
Fax: 01233 720098

Hy-Tex (UK) Limited
Committed to Quality, Value & Service

Hy-Tex **Ultra Dewatering Bags** for Pumped Sediment Control







The Environment Agency

"Working at construction and demolition sites: PPG6 Pollution Prevention Guidelines"

"Poor management of silt and silty water is a major cause of serious pollution incidents from construction sites. Silt for these purposes is a fine inert sediment derived from soil and rocks.

Silt pollution can: damage and kill aquatic life by smothering and suffocating; reduce water quality; cause flooding by blocking culverts and channels..."

"You must not discharge any silty water to a drain or watercourse without prior treatment to settle or remove suspended solids. If you've identified that you will be generating silty water, identify suitable means to treat the water before discharge; examples include: lagoons, settlement tanks, silt traps grassy areas that slow water and allow solids to settle..."

"You must have prior permission from the local sewerage provider if you intend to discharge settled water to the foul sewer because this will be regarded as a trade effluent.

You must have prior permission from [the Environment Agency] if you need to discharge anything to a watercourse. In Scotland if you comply with certain conditions, a discharge will be covered by a General Binding Rule and you will not need to contact SEPA."

Hy-Tex Ultra Dewatering Bags provide an effective way to collect harmful sediments from dirty water pumped out of excavation works (such as foundations, pipe line construction, water, sewer and utility trenches, waterways and lakes) that would otherwise pollute the surrounding environment.

It is a legal requirement to prevent silty water from leaving site untreated, and a finable offence if you do not take appropriate pollution control measures. The Environment Agency Pollution Prevention Guidelines PPG6 (See side panel), in summary, require that the majority of suspended solids (gravel, sand, and silt) must be removed from site water before it is discharged into a drain, sewer or watercourse.

Traditionally settlement methods (such as straw bale structures or settlement ponds/tanks) are often ineffective, rely on slow water movement, long settlement times, expensive and time consuming tank maintenance and large works areas.

Ultra Dewatering Bags are an efficient, practical, quick, simple and cost effective alternative solution to manage this ongoing environmental problem of removing suspended solid pollutants from pumped water on construction sites.

Sediment-laden water is simply pumped into the high quality filter bags, which trap the solids inside and allow filtered water to flow freely out through the geotextile fabric to disperse into the surrounding ground or another collection point.

Ultra Dewatering Bags can also be used for gravity feed applications such as outfall pipes from site drainage or lagoons.

The silt filter bags provide a passive non-mechanical solution, without the use of excessive or specialist machinery (other than possible lifting equipment when full), and do not require a large work area.

The sediment bags are also light, compact and easy to store, with minimal cleaning up required - when full just dispose of the bag and replace with another bag.

The Ultra Dewatering Bags detain both oil and sediment, offering a combination of benefits not available in alternative products. They can also be used to contain contaminated sediment whilst treatments are applied (such as flocculants or absorbents).

The standard 1.80 x 1.80m Ultra Dewatering bags has the capacity to trap near 1 tonne of silt and cope with flow rates up to 2,730 l/min, while the larger 3.05 x 4.55m bags can trap over 4 tonnes of silt and cope with flow rates up to 6,818 l/min.

Property	ASTM Test	Value
Material		Non-woven polypropylene geotextile
Grab Tensile Strength	D 4632	912 N (205 lb)
Elongation	D 4632	50%
Trapezoid Tear	D 4533	378 N (85 lb)
Puncture Resistance	D 4833	578 N (130 lbs)
Mullen Burst	D 3786	2,758 kpa (400 psi)
Permittivity	D 4491	1.4 sec^{-1}
Pore Size	D 4751	180 micron (80 US sieve no)
UV Stability	D 4355	70% strength retained after 500hr
Weight	D 5261	272 g/m^2 (8 oz/yd^2)
Flow Rate	D 4491	3,660 $l/min/m^2$ (90 $gal/min/ft^2$)

©2013 Hy-Tex (UK) Ltd G_DEWATER_01. Terms & Conditions apply.

Aldington Mill, Mill Lane,
Aldington, ASHFORD, Kent TN25 7AJ
sales@hy-tex.co.uk www.hy-tex.co.uk

Tel: 01233 720097
Fax: 01233 720098

Hy-Tex (UK) Limited
Committed to Quality, Value & Service

Hy-Tex **Ultra Dewatering Bags** for Pumped Sediment Control





Usage Guidelines

Ideally position the Ultra Dewatering Bag on a slope, so incoming water flows downhill through the bag, and, as a precaution, install Terrastop Premium silt fence down slope of the bags to control any potential run-off pollution.

The bag is fitted with a collar which fits around delivery hoses or connectors. Strap the neck of the Ultra Dewatering Bag tightly to the discharge hose using the attached tying cord.

To increase filtration efficiency place the bag on an aggregate, or a layer of Hy-Pave tiles, to maximize water flow through the under surface of the bag.

Plan ahead for removal, if the filled bags are to be lifted for disposal then place suitable lifting straps under bag prior to pumping, alternatively you can roll the bags into a digger bucket.

Regularly check the bags. The Ultra Dewatering Bag is full when it no longer can efficiently filter sediment or pass water at a reasonable rate.

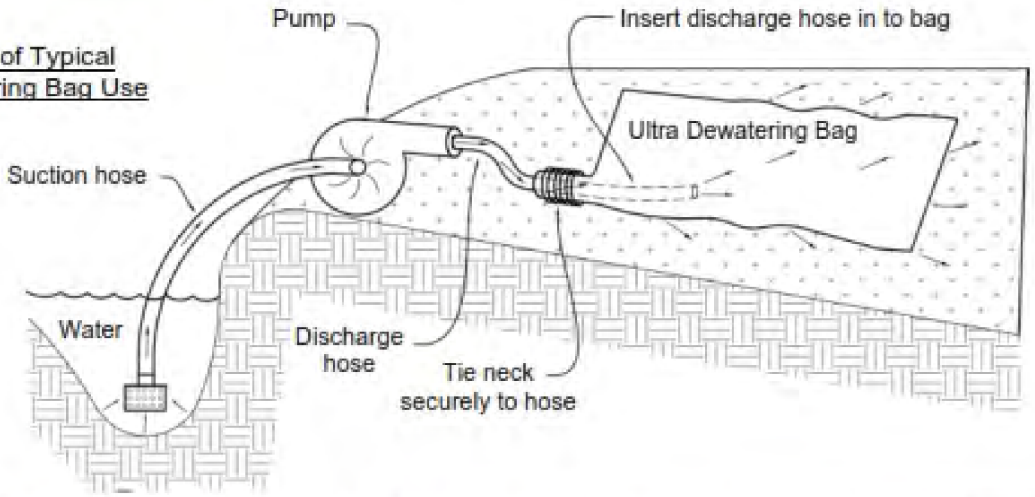
Flow rates will vary depending on the size of the Ultra Dewatering Bag, the type and amount of sediment discharged into the bag, the type of ground, rock or other substance under the bag and the degree of the slope on which the bag lies.

Under most circumstances Ultra Dewatering Bags will accommodate flow rates of up to 2,730 l/min for the 1.80 x 1.80m bags and 6,816 l/min for the 3.05 x 4.55m bags.

Use of excessive flow rates, or overfilling Ultra Dewatering Bags with sediment, may cause ruptures of the bags or failure of the hose attachment straps.

Dispose of the Ultra Dewatering Bag as directed by the site engineer. Normally allow the bags to dry in place then either cut open, spread and landscape on site or remove and dispose of the filled bags (Heavy lifting machinery may be required).

Illustration of Typical Ultra Dewatering Bag Use



Size	Code	Surface Area	Max Flow Rate	Max Pump Size	Sediment Capacity	Oil Capacity
1.80 x 1.80 m (6 x 6 ft)	9724	6.68 m² (72 ft²)	2,730 l/min (500 gal/min)	10 cm (4 inch)	0.51 m³ / 980 kg (18 ft³ / 2,160 lbs)	14 l (3.7 gal)
3.05 x 4.55 m (10 x 15 ft)	9725	27.87 m² (300 ft²)	6,818 l/min (1,500 gal/min)	15 cm (6 inch)	4.20 m³ / 4,082 kg (150 ft³ / 9,000 lbs)	57 l (15.1 gal)

Notes:

Flow/Dewatering rates will vary according to soil type (Sand typically dewaters at the fastest rate, while clay dewaters at the slowest). Clay may also blind over the fabric in some instances, significantly reducing flow.

Max flow rate is a cautious figure based on a significantly de-rating of the clean fabric flow rate of approx 3,660 l/min/m² (90 gal/min/ft²) to allow for pump pressure build up due to silt accumulation.

Sediment capacity is calculated using wet sand weight of approx 1,920kg/m³ (120 lbs/ft³) and a bag fill height of approx 150mm

Oil capacity is estimated at low flow conditions with approx 2.09 l/m² (0.5 gal/yd²) absorption capacity

All data stated and the recommendations made herein are offered free of charge and are accurate to the best of our knowledge. Hy-Tex (UK) Ltd assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. Hy-Tex disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, material, or information furnished herewith. Final determination of the use of any information or material, or how it is useful, and whether the use infringes any patents is the sole responsibility of the user.

©2013 Hy-Tex (UK) Ltd G_DEWATER_01 Terms & Conditions apply

Aldington Mill, Mill Lane,
Aldington, ASHFORD, Kent TN25 7AJ
sales@hy-tex.co.uk www.hy-tex.co.uk

Tel: 01233 720097
Fax: 01233 720098

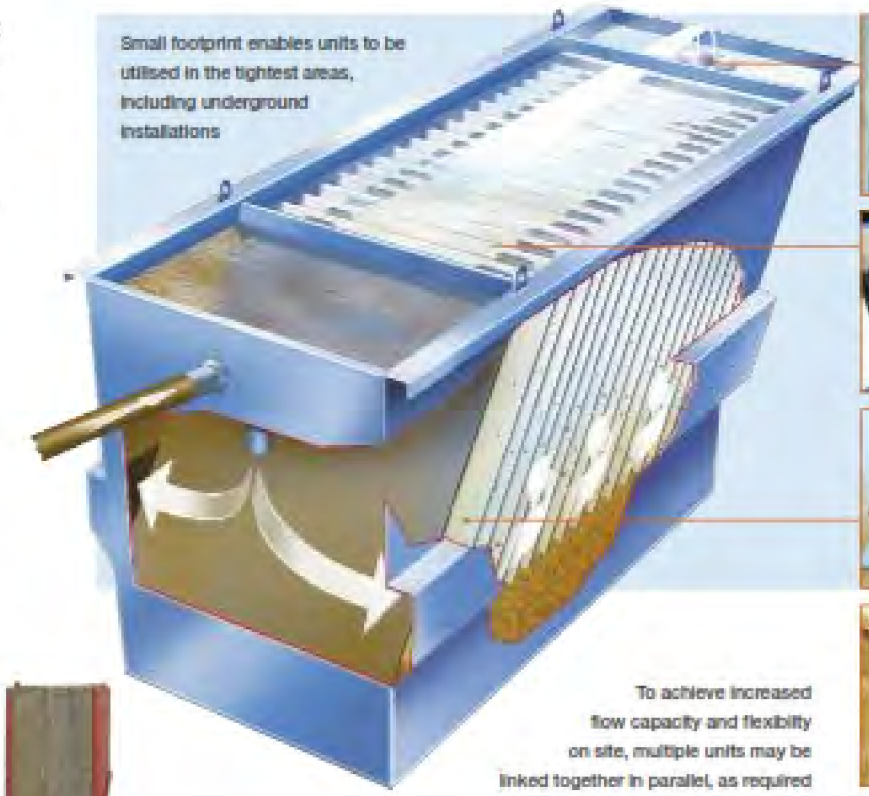
Hy-Tex (UK) Limited
Committed to Quality, Value & Service

Gravity Settlement ▸ Siltbuster Settlement Units & Water Clarifiers

Siltbuster is the UK's leading provider of mobile settlement units and Lamella Clarifiers. Each unit in the extensive range is specifically designed to remove suspended solids and settleable matter from silt and solids laden surface run-off and groundwater.

Effective gravity based solid/liquid separation requires the largest possible settlement area and optimum hydraulic flow. Siltbuster Clarifiers utilise lamella plate technology to maintain ideal settlement conditions within each unit, thereby, ensuring maximum particle settlement and minimum unit footprint.





Small footprint enables units to be utilised in the tightest areas, including underground installations

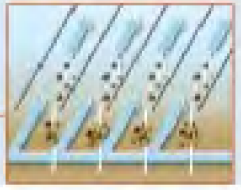
To achieve increased flow capacity and flexibity on site, multiple units may be linked together in parallel, as required



Innovative outlet design maintains flow even when the unit is not exactly level



Plate technology and configuration hugely increases settlement area. Plates are designed for easy handling



Flow distribution has been designed to meet the rigours of the modern construction site



Emptying can be achieved by a range of methods, e.g. via drain ports & valves, vacuum tanker or by manual or mechanical means

Siltbuster mobile clarifiers are robust; skid-mounted; compact and lightweight, making them simple to transport, install and operate. They are ideal for sites with limited access, restricted spaces and temporary projects.
Hopper bottomed units can be fitted (on request) with an automatic sludge removal system making their operation virtually maintenance-free.

Typical applications

Construction

- Pumping & de-watering
- Groundwater treatment
- Site run-off treatment
- Drilling, piling & coffer dams
- In-river & near-river works
- De-silting & dredging
- Roads, pipelines & other linear projects
- Plant, vehicle & wheel washing
- Site water management

Silt Management

www.siltbuster.com

The Siltbuster Mobile Range

Siltbuster offers a range of various sized units to provide customers with flexibility and the opportunity to hire or purchase a tailored, yet off the shelf, solution.

The Mobile Range, Size Comparison

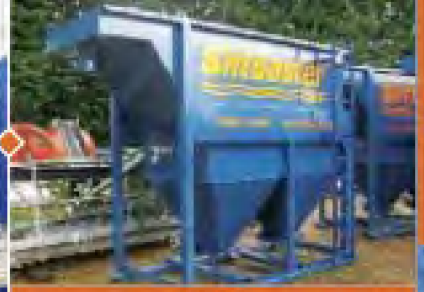












FB50	HB10	HB20	HB40R	HB50
Flat-bottomed, skid-mounted unit. The Construction Industry's favourite	Hopper-bottomed, skid-mounted unit	Enlarged version of HB10. Increased flow rate and sludge storage. Batch or continuous sludge draw-off	Hopper-bottomed, skid-mounted unit	Performance of the FB50 but with twin hoppers for larger capacity, primary thickening applications and batch or continuous sludge draw-off
Height: 1.9m	Height: 2.1m	Height: 2.6m	Height: 3.1m	Height: 3.1m
Length: 3.7m	Length: 1.9m	Length: 2.5m	Length: 3m	Length: 3.7m
Width: 1.45m	Width: 0.9m	Width: 1.2m	Width: 2.2m	Width: 1.7m
Effective Settlement Area: 50m²	Effective Settlement Area: 10m²	Effective Settlement Area: 20m²	Effective Settlement Area: 40m²	Effective Settlement Area: 50m²
Dry Weight: 1,960kg	Dry Weight: 510kg	Dry Weight: 1,120kg	Dry Weight: 2,480kg	Dry Weight: 2,370kg
Inlet: 4" bauer	Inlet: 2" bauer	Inlet: 3" bauer	Inlet: 4" bauer	Inlet: 4" bauer
Outlet: 6" bauer	Outlet: 3" bauer	Outlet: 4" bauer	Outlet: 6" bauer	Outlet: 6" bauer
Typical Operating Capacity: 1-50m³/hr	Typical Operating Capacity: 1-10m³/hr	Typical Operating Capacity: 1-20m³/hr	Typical Operating Capacity: 1-40m³/hr	Typical Operating Capacity: 1-50m³/hr

The benefits

- Readily transportable, fast and simple to setup, easy to operate.
- Small footprint units with large settlement area
- Unique design enables rapid particle settlement and water clarification
- Up to 20 times more efficient than conventional settlement tanks and lagoons of the same plan area
- Choice of unit sizes and capabilities to suit most applications
- Units can be used individually or linked to accommodate a wide range of flows, pump sizes and particle charcteristics



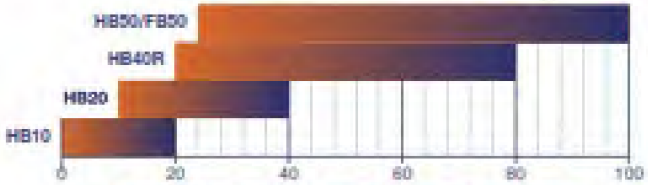
Options & Process Add-ons

Total Water Treatment Solutions

Siltbuster Clarifiers can be configured as single or multiple units for basic gravity separation and discharge-to-sewer applications. They can also be supplied as part of a complete, tailored, packaged treatment solution – including ancilliary equipment, such as:

- Lids, covers, walkways & access platforms
- Flow splitter valves, flow meters & flanged ports
- Automatic, flow proportional, single or multi-stage chemical pre-treatment
- Fully containerised dosing systems
- Flash mixers
- Pipe flocculators or mixing/aging tanks
- Automatic desludging systems
- Sludge pumps & sludge storage tanks
- De-watering systems

Siltbuster Mobile Clarifier Operating Range



Flow Rate (m³/hr) depending on solids settling rates

Appendix F Good Practice Silt Control Examples

© Envireau Ltd. 2025 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP

	**During earthworks, maintain a buffer strip to the boundary with a cut/step down in level, if practical. Where not practical, provide a cut/step down in level at the boundary.** *Image courtesy of RSK Geosciences*
	**Where cut/step down is not achievable, place permeable silt fencing. If heavy runoff expected, castellate silt line and provide secondary line**
	**Early incorporation of roadway sub-base material after soil strip to create surface runoff traps/pockets for bare soil locations and avoid/minimise trafficking over bare soils.**



Maintain raised roadway between road/kerbline and house build on downgradient side of build to create surface runoff traps/pockets.

When infilled to road level, place of silt wattles along kerbline to trap potential silt runoff where practical or where site areas are temporarily inactive



Installation of matting in areas where heavy trafficking is necessary over exposed soils.



Placement of silt wattles at strategic/heavy flow through locations or boundaries of working areas where exposed soils are present.

Image courtesy of FROG Environmental



Placement of stone on plots to create clean forklift access.

Placement of stone or hardstanding in locations where heavy forklift activity is required or storage of materials e.g. storage areas, hoppers, silos.

	**Temporary stoned access roads and levelled stoned areas around building base.** **Encourages entrapment, entrainment and infiltration for rainfall and minimises the potential to generate overland surface water flows.**
	**Gully bags installed and regularly emptied/maintained.**
	**Check dams and gravel beds on open channels and discharge outfalls to trap silts.** **Alternatively use silt matting on channel bed and silt wattles for check dams.**
	**Silts nets used for channels or where flow accumulations occur on site with high potential for soil erosion.** **Can also be used for lining sides walls of attenuation basins to prevent scour or erosions.** *Image courtesy of Frog Environmental*

	**Silt capture filtration channels for areas of overland flow / surface runoff accumulations.** **Can also be used as a gravel bed in attention basins to prevent scour and trap silts. Alternatively silt matting can be used for the base of attenuation basins.**
	**Silts nets at attenuation basin outfalls and promotion of vegetation within attenuation basins to trap mobilised fine silts and clays.** **Alternatively pea gravel filled hessian bags can form a filter dam at the outlet to hold water in attenuation basin to promote settlement whilst allowing water to pass out by filtration through pea gravel bags** Note, attenuation basins may need to be used as settlement lagoons and rehabilitated at the end of the final building phase.
	**Use of silt fencing and straw bales at attenuation basin inlet to traps silts on concrete splay for easy removal.** **Course stone laid at inlet to dissipate flow and prevent scour.** *Image courtesy of RSK Geosciences*

	**Use of attenuation basin as silt settlement/balancing lagoon. 1 tonne pea gravel bags (yellow bags in photo) used as flow reducers and filtration dividers in the basin.** If site is clayey, use of flocculants gel bags likely to be required and may need to consider hold and pump system (on a float) to ensure adequate settlement time in lagoon. Alternatively, hold and pump out through a lamella clarifying tank.
	**Use of kerbing on periphery of house build to create pockets / traps for rainfall and reducing / minimising runoff velocities and volumes.** **Alternatively maintain depressions around build before topsoil fills or silt wattles between plots where overland runoff pathways could be generated.**
	**Maintaining a clean site access road.**

	**Use of speed bumps at site entrance to direct silty runoff to gravel traps or boundary silt fencing.**
	**Gel flocculant bags may be required on the drainage system, particularly where fine silts and clays are present on site, that once mobilised, stay buoyant in water and are difficult to settle out.** *Image courtesy of Frog Environmental*

Appendix G Inspection and Monitoring Proformas

© Envireau Ltd. 2025 \ 3491675 Heatons Cadeby Pipe Factory Discharge of Conditions \ RPT Cadeby Pipe Factory CSWMP



<1 NTU	20 NTU	75 NTU	250 NTU	450 NTU	750 NTU
0 mg/L	40 mg/L	100 mg/L	420 mg/L	1250 mg/L	3300 mg/L

GULLY BAG INSPECTION CHECKLIST

SITE: .....

Date	Gully Number/ID	Fit for Purpose (Yes / No)	(If No: action required, clean and replace?)	Comment	Signature

WEEKLY SITE INSPECTION CHECKLIST

SITE: .....

Name of person undertaking inspection: .....

Date: .....

Current weather conditions:.....

Description	Comment	Action(s)	Person Responsible
What is the current condition of the gullies and gully protection measures (gully bags)? *Note any gullies requiring maintenance/cleaning and any other remedial works (damaged grates, traps etc)*			
What is the current condition of the manhole chambers? *Note maintenance/cleaning and any other remedial works* *Note any chambers requiring maintenance/cleaning/remedial work to replace damaged covers*			
What is the condition of the Silt Fencing along the boundaries? *Note maintenance and any remedial works needed*			
What is the condition of silt control measures at attenuation basin(s) (if applicable) *Note maintenance and any remedial works needed*			

Description	Comment	Action(s)	Person Responsible
What is the condition boundary bund (if applicable) *Note maintenance and any remedial works needed*			
Are site roads clean and relatively free of mud? Is the frequency of scraping and sweeping adequate? *Consider whether additional cleaning should be scheduled*			
Are there currently unsurfaced areas being trafficked which may be causing silt to enter the site drainage? *Note if additional measures are required to reduce the runoff from unsurfaced areas*			
Are control measures in place to prevent silt runoff from unsurfaced areas and topsoil stockpiles? *Note if the control are measures are adequate or not*			
Is there any dewatering of excavations taking place on site? *Note what activities are taking place, the location, any control measures in place and the ultimate fate of the water discharged*			

Primary Monitoring Points

Point ID	Description	Comment	Action(s)	Person Responsible
1	Monitor the quality of the surface water runoff at monitoring point(s)			
2	Monitor the quality of the surface water runoff discharged from the site.			

Secondary Monitoring Points

Point ID	Description	Comment	Action(s)	Person Responsible
3	Monitor the condition of all roads, particularly those leading to the site compound, vehicle parking and those used to access the active construction / groundworks areas. Roads should be regularly scraped and swept to minimise the potential for silt to enter the drainage system.			

ACTIONS SUMMARY

Action	Date	Action assigned to	Action close out (sign and date)

Bristol Office

The Old School
Stillhouse Ln
Bristol
BS3 4EB

Derby Office

3 Royal Scot Rd
Derby
DE24 8AJ

Richmond Office

Aske Stables
North Yorkshire
DL10 5HG

Shrewsbury Office

Windsor House
Windsor Pl
Shrewsbury
SY1 2BY

Stirling Office

Unit 13, Beta Centre
Stirling University
Innovation Park
Stirling
FK9 4NK

01332 871 882
info@envireauwater.co.uk

envireau.co.uk