

General version industry

Environmental management toolkit



Management toolkit for operators holding a permit for the discharge of up to 20 cubic metres per day of secondary treated sewage effluent to surface waters



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This is an example Environmental Management System. You don't have to use this but it's designed to help you meet the requirements of permit condition 1 relating to management. It will need to be modified to suit your site as some parts won't be relevant to your operation and you may need to make some additions.

If the treatment plant is shared with others (for example multiple houses) you are all jointly responsible for the proper operation of the plant, but you only need one management system.

Your EMS needs to be proportionate - a householder with a small plant serving his house may not need specific training but must be aware of his/her responsibilities and the requirements of the permit; an owner and/or staff of a sewage treatment plant serving a hotel, pub or campsite may wish to have their staff adequately trained and competent to undertake maintenance.

A copy of the EMS and the permit should be kept where it is easily accessible to site staff; ideally this will be on site.

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- 7. Accident management plan, including;**
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 - C – Preventing accidents and what to do if they happen.
- 8. Further help**

1. Type of treatment plant

This form is to be used to record information about the type of treatment you are using for your sewage.

Type of treatment plant For example package treatment works, septic tank	
Make	
Model	
Installation Date	
Who installed it?	
Capacity	

2. Monitoring and maintenance checklist

You should understand whether the system is operating normally or not and what routine checks to make, for example is the power on, is the motor running? You should know how to restart the system if there is a power or other failure. Further checks should be made on the quality of the final effluent from the system; is the effluent clear, is there debris visible downstream? The supplier of the system or maintenance contractor should be able to advise on checks specific to the plant in question. These checks should normally be made and recorded on a weekly basis as a minimum. You should record the findings of these checks even if nothing was wrong.

You should have a service and maintenance contract in place with a contractor that is trained and competent to maintain and service your particular treatment plant. If you have a contract in place a copy of it must be kept with this document. Service frequency should be in accordance with the manufacturer’s instructions. Sewage treatment plants require periodic de-sludging and you should have a contract in place to undertake this when required.

These are guidelines only.

Item	How often (tick the appropriate box)					
	Day	Week	Month	6 Months	Year	5 Years
If you have a manufacturer’s maintenance plan complete line 1 and add to the blank lines below any actions which you are required to carry out in that plan and specify how frequently you will carry them out.						
1) Ensure that a maintenance plan as required by the manufacturer’s instructions is followed and that any required works are carried out by an appropriately qualified person						
2)						
If you do not have a manufacturer’s maintenance plan in place, the following is suggested as a minimum. You should add extra actions that you feel are appropriate for your site.						
1) Check the discharge point for any adverse visible effect* on the receiving water, the bed of the watercourse, or any plants or animals within the watercourse. If you observe any adverse visible effect you must contact an appropriately qualified contractor to investigate and correct the fault.		✓				
2) Check to see if the treatment plant appears to be operating effectively, for example no unusual noises, odours and so on. If it is not operating correctly you must contact an appropriately qualified contractor to investigate and remediate the cause.		✓				
3) Ensure that the sample point is accessible at all times. If its not accessible ensure access is reinstated.			✓			
4) De-sludging should take place at least every six months or as specified by the manufacturer				✓		
5) Servicing of the plant should take place at least every six months or as specified by the manufacturer				✓		
6)						

* Adverse visible effect means dead or distressed fish, other animals or plants in the vicinity of the discharge point, noticeable deposit of solid material; growth of sewage fungus (a grey growth covering rocks or other objects in the receiving water body); or noticeable discolouration of the water flow by the discharge.

3. Monitoring and maintenance record

You need to keep a record of the checks you have completed that are set out in your checklist along with any additional checks you have made. This could be recorded in a diary or alternatively you could adapt the form below to create a record sheet. Make sure you have an adequate supply available to continue recording actions from your checklist.

If you have a maintenance contract with a contractor, keep a record of any work carried out on your treatment plant by them. If invoices state the work carried out these will be sufficient.

If you do the checks you should enter:

- The check or maintenance job done (*for example Checked treatment plant*);
- Who did it;
- The result (*for example when abnormal noise heard, called in specialist to investigate*).

Action	Date and Time	Carried out by	Result
For example, sample point access checked	06/04/2010 09.30	Mr A N Other	Manhole covering sample chamber covered in soil restricting access. Obstruction cleared.
For example, operation of sewage treatment plant checked	06/04/2010 09.40	Mr A. N. Other	Plant operating satisfactorily.
For example, operation of sewage treatment plant checked	08/04/2010 12.00	Mrs A Person	Seized discs – effluent at a trickle. Engineer called at 12.15. Attended site and freed discs at 16.00. Plant now operating satisfactorily 16.05.

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4.1 Training requirements checklist

You need to understand what your treatment plant is designed to do, what its limitations are and the restrictions on its use (for example chemicals which may prevent it from working properly). Anyone that inspects, maintains or repairs the system must be adequately trained and competent to do so.

If you are a group of domestic residential properties with a permit to discharge to a watercourse then you should designate one person from the group to have the knowledge outlined in the table and write their name in the table. If you have a contract with a manufacturer or service company to maintain your treatment plant then you need to record this. We would not expect you to undertake formal training but you should be aware of your responsibilities and how to do the necessary checks (see example 1 in the table below).

If you run a larger establishment then you and/or your staff will need to demonstrate you are trained to an adequate level in the necessary skills (see example 2 in the table below) although you may also employ a contractor to undertake many tasks.

JOB	TRAINING REQUIRED (tick boxes to show who needs which training. Fill in training record when training is completed.)														
	Environmental awareness				Maintenance/operations					Accidents and emergency					
	Aware of local sensitive sites for example nature conservation area	Read and understood what is required to comply with the permit.	Understands how the environment may be harmed by the system.			Understand purpose / operation of treatment plant and normal/abnormal operation	Compatibility of chemicals for example cleaning products with the treatment plant.	Frequency of required maintenance operations	Frequency of de-sludging		Fire procedure	Spill response procedure	Flood procedure (where applicable)	Failure of services (for example power cut), how to restart the plant	
Example 1															
Mr A N Other - occupier	√	√	√			√*	√	√*	√*		√	√	√	√	
Example 2															
Site Manager	√						√				√	√	√	√	
Site Supervisor	√	√	√			√	√	√	√		√	√	√	√	
Site operator			√			√	√	√	√		√	√	√	√	

* Your contract with the manufacturer or maintenance contractor should cover these aspects.

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4.2 Training / awareness record

Awareness record

If you are responsible for a small treatment plant, for example from a household then record that you have understood your responsibilities and are aware of things you need to do. Some examples are shown below.

Name	Address		
Action	Date due	Date done	Comments
For example, read and understood responsibilities required by the permit	30/04/10	20/04/10	
For example, aware of purpose of sewage treatment plant and restrictions on its use	30/04/10	20/04/10	Read and understood British Water guide to users of sewage treatment systems
For example, checked for local sensitive sites	30/04/10	28/04/10	There is a Site of Special Scientific Interest but it is 5 miles away and upstream of us so not relevant.
For example, aware of types of chemicals which may cause the treatment plant to malfunction.	30/04/10	15/04/10	Contacted company who installed treatment plant for information sheet on chemicals which are not compatible with the treatment plant

Training record

If you are responsible for a larger establishment, then record any training you, or (if relevant) your staff, receive relating to the operation of your treatment plant. One example is shown below.

Employee Name A Person	Job Title Maintenance Supervisor					
Training Required	Date due	Date done	Passed as competent? yes/no	Reviewers Signature	Date for Refresher	Comments
for example trained by manufacturer in operation of treatment plant	30/04/10	20/04/10	yes	<i>A N Other</i>	30/04/13	

5. Accident and incident record

You should record any accidents, other incidents or near misses relating to the operation of your treatment plant, for example untreated sewage being released into a river or stream. The form could also be used to record health and safety incidents.

An example of an accident could be a contractor severing an electricity cable and cutting off the power supply or a spillage of bleach or other chemical that may stop the treatment plant working properly.

“Other incidents” covers impacts on the environment that are not accidents, such as failing to maintain the treatment plant adequately, leading to breakdown and untreated sewage being discharged into a river or stream, or vandals causing damage to the treatment plant.

If you are concerned that the final effluent is having a clearly noticeable, adverse impact on the environment you should also call your local Environment Agency office.

Date and time of the incident	
What happened, what was it about?	
Was anyone else aware of this – other witnesses? If so who?	
What caused it?	
What action did you take to fix the problem?	
What have you done to make sure that it does not happen again?	
Was there any significant pollution – for example: untreated sewage being discharged into a drain, river or stream? Yes / No If yes, what pollution occurred?	
If there was significant pollution then you must notify the Environment Agency on 0800 807060 as soon as possible. Have you done so?	Yes/No/not applicable At what time did you phone? EA Incident reference no.
You must also write or send an email to confirm this to the local office (see your accident management plan for the address). Have you done so?	Yes/No/not applicable
Please print your name, sign and date.	

6. Complaints record

Occasionally you may receive complaints about the treatment plant. They may or may not be justified but you should keep a record of any complaints received. This can be used as evidence that you've taken appropriate action to rectify any issues if the Environment Agency receives complaints about your site.

Who made the complaint?	Name:	
	Address	
	Phone No	
Date and time they made the complaint		
What happened, what was it about?		
Was anyone else aware of this – other neighbours or your staff? If so who?		
Assuming the complaint relates to your site, what was the problem, what went wrong? If you can't find the source of the problem you should contact a suitably qualified person to do so and record who this was, and what the problem was.		
What action did you take to fix the problem?		
What have you done to make sure that it does not happen again?		
Was there any significant pollution – for example: untreated sewage being discharged into a drain, river or stream? Yes / No If yes, what pollution occurred?		
If there was significant pollution then you must notify the Environment Agency on 0800 807060 as soon as possible . Have you done so?	Yes/No/not applicable At what time did you phone? EA Incident reference no.	
You must also write or send an email to confirm this to the local office (see your accident management plan for the address). Have you done so?	Yes/No/not applicable	
Please print your name, sign and date:		

7. Accident management plan

Larger establishments may want to produce a formal accident management plan such as the one shown below. For very small sites it may only be necessary to have details of key contacts to call in the event of an accident, incident or emergency.

Example:

Created by: _____ Date: _____

Accident management plan contents

A – Site plan

B – Key site and emergency contacts

C – Preventing accidents... and what to do if they happen.

A – Site plan

Insert site plan showing location of the following items:

- **Site entrances and exits** available to the emergency services and maintenance contractors
- **Buildings**; the buildings and other main constructions
- **Drainage**; including:
 - foul drainage (marked in red);
 - surface water drainage (marked in blue);
 - Combined drainage (marked with a red C)

showing:

- the direction of flow;
 - the location of the treatment plant;
 - the location of the sampling point (which may be the discharge point);
 - the location of the discharge point to the watercourse;
 - the location of manhole covers and drains.
- **Accident and emergency response items**; such as fire extinguishers, spill kits, sand bags, alarms, first aid kit and so on.
- **Vulnerable receptors**; on site or adjacent receptors that could be affected by the site operations, such as watercourses, springs, boreholes, ecologically sensitive sites, residential properties and so on.

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B – Key Site and Emergency Contacts

This table contains information and contacts you may need in an emergency (adjust to suit your site).

SITE DETAILS		
Address:		
Postcode:		
Site access grid reference:		
SITE CONTACTS	Office Hours (specify)	Out of hours
Owner:		
General manager:		
Site manager:		
Site supervisor:		
Security contact:		
Landowner / agent:		
EMERGENCY SERVICES	Office Hours	Out of hours
Emergency	999 or 112 (on mobiles)	999 or 112 (on mobiles)
Medical:		
Police:		
Fire:		
REGULATORS	Office Hours	Out of hours
Health and Safety Executive (HSE):		
Local Authority:		
Environment Agency	General number: 08708 506 506	
	24 hour emergency hotline: 0800 80 70 60	0800 80 70 60
Natural England/Countryside Council for Wales		
UTILITY AND KEY SERVICES	Office Hours	Out of hours
Treatment plant maintenance contractor:		
Sludge removal contractor:		
Electricity supplier:		
Electrician:		
Plumber:		
OTHER KEY CONTACTS	Office Hours	Out of hours
Your company's head office:		
Adjacent landowners:		
Neighbours:		
Specialist advisors:		

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C - Preventing accidents and what to do if they happen

The following table contains examples of things that could go wrong and harm the environment. The list covers many of the things that could go wrong at a site like yours but you should check if you can identify anything else particular to your site that could cause a problem. If you can then add it to the list.

The table describes what you should be doing to reduce the chances of each possible accident happening. It also describes what should be done if the worst actually happens.

Please ensure that you are committed to the table's contents as it forms part of your Environmental Management System which is a condition of your permit and therefore must be complied with. If it refers to using equipment such as spill-kits, make sure you have these available.

Finally make sure that everyone on site knows about the plan, where to find it, and what it contains. It's important that they know how to prevent accidents and what to do if there is one. Keep your spill and fire response procedures with this plan. The links to the pollution prevention guidelines, which can be found in further information, give advice on how to produce spill response procedures.

You will need to review the plan and record this at least every 4 years, or as soon as practicable after an accident, whether changes to the plan should be made.

Possible accident	What would the harm to the environment be?	How do we reduce the chances of it happening?	What to do if it happens
Spillages			
Overloading of treatment plant. Due to inadequate sized plant being installed.	Contamination of land, drains, groundwater and watercourses.	If any changes are to take place to the property then ensure the treatment works is still large enough, before the works commence.	Follow the spill response procedure. It describes what to do in the event of a spill and where the kit is kept. If necessary call out a contractor to undertake repairs.
Spillages during de-sludging of the treatment plant		Ensure pipe integrity has been tested prior to use and contractor/operator observes correct de-sludging process	
Slow seepage of liquids from the treatment plant. Slow seepage can be less noticeable than 'spills'.		Integrity of the treatment plant will be tested. Treatment plant will be maintained in line with manufactures instructions	
Failure of Plant or Equipment			
Releases of untreated sewage; due to faulty pipe work, valves, over-pressure, blockages, pump failure, severe weather and so on.	Contamination of land, drains, groundwater and watercourses.	Visual inspection and completion of weekly inspection checklist record. Preventative maintenance regime. Any underground pipes and tanks will be tested for integrity.	Spill response procedure It describes what to do in the event of a spill and where the kit is kept. If necessary call out a contractor to undertake repairs.

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Possible accident	What would the harm to the environment be?	How do we reduce the chances of it happening?	What to do if it happens?
Harmful substances/objects entering the treatment plant, for example cleaning chemicals, garden pesticides, oils/fat/grease, nappies, sanitary products	Damage to the treatment plant and/or death of micro-organisms with possible subsequent contamination of groundwater and watercourses.	<p>Read and understand the manufacturer's guidance on what can be put down drains, sinks and toilets. Inform all residents and guests of the restrictions.</p> <p>Have a list of chemicals which are safe to use with the treatment works in a designated spot and ensure everyone who used or purchases chemicals has access to and is aware of the list.</p>	<p>Follow spill response procedure.</p> <p>Arrange for a drainage contractor to come and fix the works.</p> <p>Stop using the works, if possible or arrange for the sewage to be tankered away to an appropriately licensed site.</p>
Flood			
Due to ingress of watercourse floodwater, blocked drains, burst water main, use of fire water.	Contamination of land, groundwater and watercourses with untreated sewage and flood water.	Ensure that no surface water/floodwaters can enter the treatment works.	Flood procedure describing what to do in the event of a flood warning such as installation of barge boards, use of sand bags.
Failure of Services			
<p>Due to failure of supply; electricity, supply and of sewerage system.</p> <p>Due to utility supply being struck and broken / cut.</p>	Death of micro-organisms with possible subsequent contamination of groundwater and watercourses.	<p>Provision of alarm on the treatment works to warn operators of power failure.</p> <p>Provision of back up generator should the works require constant electricity to ensure adequate treatment.</p>	Use emergency generator (if available). Call out utility company for urgent call out.

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Possible accident	What would the harm to the environment be?	How do we reduce the chances of it happening?	What to do if it happens?
Failure of Containment			
Failure of containment facilities due to land movement, impact, corrosion and so on.	Contamination of land, drains, groundwater and watercourses.	Provision of secondary containment for hazardous liquids. Inspection of primary and secondary containment facilities.	Spill response procedure as described above.
Vandalism			
Unauthorised entry and tampering or malicious damage to property, plant and equipment.	Possible contamination of land, drains, groundwater and watercourses.	Ensure treatment plant is secure	Immediately secure the plant, arrange any necessary repairs, follow the spill response procedure if a spill has occurred.

8. Further help

Further information on preventing pollution can be found in our Pollution Prevention Guidelines available on our web site at www.environment-agency.gov.uk/ppg

PPG 4. Treatment and disposal of sewage where no foul sewer is available.

PPG 21, incident response planning. It could be useful in preparing a spill response plan.

The below link is to the British Water website. British Water is the trade association for the water industry supply chain. Here you can find accredited service engineers to maintain and repair your treatment plant and in the publications section there is guidance on how to use and operate a small sewage treatment plant.

<http://www.britishwater.co.uk/>

MAGIC is a web based interactive map service to bring together environmental information from across government. It will be useful in finding local sensitive sites.

<http://www.magic.gov.uk/>