

SITE CHARACTERISATION FORM

COMPLETING THE FORM

Note: This form requires the latest version of Adobe Acrobat Reader and on PC's Windows 7 or later. Windows XP produces errors in calculations.

Note: To secure your work prior to forwarding to third parties please select **Print**, select Printer **"print to PDF"** and name and save document.

Step 1:

Goto Menu Item **File, Save As** and save the file under a reference relating to the client or the planning application reference if available.

Clear Form

Use the **Clear Form** button to clear all information fields.

Notes: All calculations in this form are automatic.

Where possible information is presented in the form of drop down selection lists to eliminate potential errors.

Variable elements are recorded by tick boxes. In all cases only one tick box should be activated.

All time record fields must be entered in twenty four hour format as follows: HH:MM

All date formats are DD-MM-YYYY.

All other data fields are in text entry format.

This form can be printed out fully populated for submission with related documents and for your files. It can also be submitted by email.

Section 3.2 In this section use an underline _____ across all six columns to indicate the depth at which changes in classification / characteristics occur.

Section 3.4 Lists supporting documentation required.

Section 4 Select the treatment systems suitable for this site and the discharge route.

Section 5 Indicate the system type that it is proposed to install.

Section 6 Provide details, as required, on the proposed treatment system.

APPENDIX A: SITE CHARACTERISATION FORM

File Reference:

1.0 GENERAL DETAILS (From planning application)

Prefix: First Name: Surname:

Address:

Site Location and Townland:

Number of Bedrooms: Maximum Number of Residents:

Comments on population equivalent

Proposed Water Supply:

Mains ☐ Private Well/Borehole ☐ Group Well/Borehole ☐

2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type):

Subsoil, (Specify Type):

Bedrock Type:

Aquifer Category: Regionally Important ☐ Locally Important ☐ Poor ☐

Vulnerability: Extreme ☐ High ☐ Moderate ☐ Low ☐

Groundwater Body: Status

Name of Public/Group Scheme Water Supply within 1 km:

Source Protection Area: ZOC ☐ SI ☐ SO ☐ Groundwater Protection Response:

Presence of Significant Sites
(Archaeological, Natural & Historical):

Past experience in the area:

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, and/or any potential site restrictions).

Note: Only information available at the desk study stage should be used in this section.

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment

Landscape Position:

Slope: Steep (>1:5) ☐ Shallow (1:5-1:20) ☐ Relatively Flat (<1:20) ☐

Slope Comment

Surface Features within a minimum of 250m (Distance To Features Should Be Noted In Metres)

Houses:

Existing Land Use:

Vegetation Indicators:

Groundwater Flow Direction:

Ground Condition:

Site Boundaries:

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Roads:

Outcrops (Bedrock And/Or Subsoil):

Surface Water Ponding:

Lakes:

Beaches/Shellfish Areas:

Wetlands:

Karst Features:

Watercourses/Streams:*

*Note and record water level

3.0 ON-SITE ASSESSMENT

3.1 Visual Assessment (contd.)

Drainage Ditches:*

Springs:*

Wells:*

Comments:

(Integrate the information above in order to comment on: the potential suitability of the site, potential targets at risk, the suitability of the site to treat the wastewater and the location of the proposed system within the site).

*Note and record water level

3.2 Trial Hole (should be a minimum of 2.1m deep (3m for regionally important aquifers))

To avoid any accidental damage, a trial hole assessment or percolation tests should not be undertaken in areas which are at or adjacent to significant sites, (e.g. NHAs, SACs, SPAs, and/or Archaeological etc.), without prior advice from National Parks and Wildlife Service or the Heritage Service.

Depth of trial hole (m):

Depth from ground surface
to bedrock (m) (if present):

Depth from ground surface
to water table (m) (if present):

Depth of water ingress:

Rock type (if present):

Date and time of excavation:

Date and time of examination:

Depth of
Surface and
Subsurface

Percolation
Tests

Soil/Subsoil

Texture &
Classification**

Plasticity and
dilatancy***

Soil
Structure

Density/
Compactness

Colour****

Preferential
flowpaths

0.1 m	<input type="text"/>						
0.2 m	<input type="text"/>						
0.3 m	<input type="text"/>						
0.4 m	<input type="text"/>						
0.5 m	<input type="text"/>						
0.6 m	<input type="text"/>						
0.7 m	<input type="text"/>						
0.8 m	<input type="text"/>						
0.9 m	<input type="text"/>						
1.0 m	<input type="text"/>						
1.1 m	<input type="text"/>						
1.2 m	<input type="text"/>						
1.3 m	<input type="text"/>						
1.4 m	<input type="text"/>						
1.5 m	<input type="text"/>						
1.6 m	<input type="text"/>						
1.7 m	<input type="text"/>						
1.8 m	<input type="text"/>						
1.9 m	<input type="text"/>						
2.0 m	<input type="text"/>						
2.1 m	<input type="text"/>						
2.2 m	<input type="text"/>						
2.3 m	<input type="text"/>						
2.4 m	<input type="text"/>						
2.5 m	<input type="text"/>						
2.6 m	<input type="text"/>						
2.7 m	<input type="text"/>						
2.8 m	<input type="text"/>						
2.9 m	<input type="text"/>						
3.0 m	<input type="text"/>						
3.1 m	<input type="text"/>						
3.2 m	<input type="text"/>						
3.3 m	<input type="text"/>						
3.4 m	<input type="text"/>						
3.5 m	<input type="text"/>						

Likely Subsurface Percolation Value:

Likely Surface Percolation Value:

Note: *Depth of percolation test holes should be indicated on log above. ('Enter Surface or Subsurface at depths as appropriate).

** See Appendix E for BS 5930 classification.

*** 3 samples to be tested for each horizon and results should be entered above for each horizon.

**** All signs of mottling should be recorded.

3.2 Trial Hole (contd.) Evaluation:

3.3(a) Subsurface Percolation Test for Subsoil

Step 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm) (A)			
Depth from ground surface to base of hole (mm) (B)			
Depth of hole (mm) [B - A]			
Dimensions of hole [length x breadth (mm)]	x	x	x

Step 2: Pre-Soaking Test Holes

		1	2	3
Pre-soak start	Date			
	Time			
2nd pre-soak start	Date			
	Time			

Each hole should be pre-soaked twice before the test is carried out.

Step 3: Measuring T_{100}

Percolation Test Hole No.	1	2	3
Date of test			
Time filled to 400 mm			
Time water level at 300 mm			
Time (min.) to drop 100 mm (T_{100})			
Average T_{100}			

If $T_{100} > 480$ minutes then Subsurface Percolation value >120 – site unsuitable for discharge to ground

If $T_{100} \leq 210$ minutes then go to Step 4;

If $T_{100} > 210$ minutes then go to Step 5;

Step 4: Standard Method (where $T_{100} \leq 210$ minutes)

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	Δt (min)
1									
2									
3									
Average Δt Value									
	Average $\Delta t/4 =$ [Hole No.1] (t ₁)			Average $\Delta t/4 =$ [Hole No.2] (t ₂)			Average $\Delta t/4 =$ [Hole No.3] (t ₃)		

Result of Test: Subsurface Percolation Value = (min/25 mm)

Comments:

Step 5: Modified Method (where $T_{100} > 210$ minutes)

Percolation Test Hole No.	1					
Fall of water in hole (mm)	Time Factor = T _f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T _m	K _{fs} = T _f / T _m	T – Value = 4.45 / K _{fs}
300 - 250	8.1					
250 - 200	9.7					
200 - 150	11.9					
150 - 100	14.1					
Average	T- Value	T- Value Hole 1 = (T ₁)				

Percolation Test Hole No.	3					
Fall of water in hole (mm)	Time Factor = T _f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T _m	K _{fs} = T _f / T _m	T – Value = 4.45 / K _{fs}
300 - 250	8.1					
250 - 200	9.7					
200 - 150	11.9					
150 - 100	14.1					
Average	T- Value	T- Value Hole 3 = (T ₂)				

Percolation Test Hole No.	2					
Fall of water in hole (mm)	Time Factor = T _f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T _m	K _{fs} = T _f / T _m	T – Value = 4.45 / K _{fs}
300 - 250	8.1					
250 - 200	9.7					
200 - 150	11.9					
150 - 100	14.1					
Average	T- Value	T- Value Hole 2 = (T ₂)				

Result of Test: Subsurface Percolation Value =
 (min/25 mm)

Comments:

3.3(b) Surface Percolation Test for Soil

Step 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm)			
Depth from ground surface to base of hole (mm)			
Depth of hole (mm)			
Dimensions of hole [length x breadth (mm)]	x	x	x

Step 2: Pre-Soaking Test Holes

Pre-soak start	Date			
	Time			
2nd pre-soak start	Date			
	Time			

Each hole should be pre-soaked twice before the test is carried out.

Step 3: Measuring T_{100}

Percolation Test Hole No.	1	2	3
Date of test			
Time filled to 400 mm			
Time water level at 300 mm			
Time to drop 100 mm (T_{100})			
Average T_{100}			

If $T_{100} > 480$ minutes then Surface Percolation value >90 – site unsuitable for discharge to ground

If $T_{100} \leq 210$ minutes then go to Step 4;

If $T_{100} > 210$ minutes then go to Step 5;

Step 4: Standard Method (where $T_{100} \leq 210$ minutes)

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	ΔT (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	ΔT (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	ΔT (min)
1									
2									
3									
Average ΔT Value									
	Average $\Delta T/4 =$ [Hole No.1] (T ₁)			Average $\Delta T/4 =$ [Hole No.2] (T ₂)			Average $\Delta T/4 =$ [Hole No.3] (T ₃)		

Result of Test: Surface Percolation Value = (min/25 mm)

Comments:

Step 5: Modified Method (where $T_{100} > 210$ minutes)

Percolation Test Hole No.	1					
Fall of water in hole (mm)	Time Factor = T _f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T _m	K _{fs} = T _f / T _m	T – Value = 4.45 / K _{fs}
300 - 250	8.1					
250 - 200	9.7					
200 - 150	11.9					
150 - 100	14.1					
Average	T- Value	T- Value Hole 1 = (T ₁)				

Percolation Test Hole No.	2					
Fall of water in hole (mm)	Time Factor = T _f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T _m	K _{fs} = T _f / T _m	T – Value = 4.45 / K _{fs}
300 - 250	8.1					
250 - 200	9.7					
200 - 150	11.9					
150 - 100	14.1					
Average	T- Value	T- Value Hole 2 = (T ₂)				

Result of Test: Surface Percolation Value =
 (min/25 mm)

Percolation Test Hole No.	3					
Fall of water in hole (mm)	Time Factor = T _f	Start Time hh:mm	Finish Time hh:mm	Time of fall (mins) = T _m	K _{fs} = T _f / T _m	T – Value = 4.45 / K _{fs}
300 - 250	8.1					
250 - 200	9.7					
200 - 150	11.9					
150 - 100	14.1					
Average	T- Value	T- Value Hole 3 = (T ₂)				

Comments:

3.4 The following associated Maps, Drawings and Photographs should be appended to this site characterisation form.

1. Discovery Series 1:50,000 Map indicating overall drainage, groundwater flow direction and housing density in the area.
2. Supporting maps for vulnerability, aquifer classification, soil, subsoil, bedrock.
3. North point should always be included.
4. (a) Scaled sketch of site showing measurements to Trial Hole location and
 - (b) Percolation Test Hole locations,
 - (c) wells and
 - (d) direction of groundwater flow (if known),
 - (e) proposed house (incl. distances from boundaries)
 - (f) adjacent houses,
 - (g) watercourses,
 - (h) significant sites
 - (i) and other relevant features.
5. Site specific cross sectional drawing of the site and the proposed layout¹ should be submitted.
6. Photographs of the trial hole, test holes and site including landmarks (date and time referenced).
7. Pumped design must be designed by a suitably qualified person.

¹ The calculated percolation area or polishing filter area should be set out accurately on the site layout drawing in accordance with the code of practice's requirements.

4.0 CONCLUSION of SITE CHARACTERISATION

Integrate the information from the desk study and on-site assessment (i.e. visual assessment, trial hole and percolation tests) above and conclude the type of system(s) that is (are) appropriate. This information is also used to choose the optimum final disposal route of the treated wastewater.

Slope of proposed infiltration / treatment area:

Are all minimum separation distances met?

Depth of unsaturated soil and/or subsoil beneath invert of gravel (or drip tubing in the case of drip dispersal system)

Percolation test result: Surface:

Sub-surface:

Not Suitable for Development ☐

Suitable for Development ☐

Identify all suitable options

1. Septic tank system (septic tank and percolation area) **(Chapter 7)** ☐
2. Secondary Treatment System **(Chapters 8 and 9)** and soil polishing filter **(Section 10.1)** ☐
3. Tertiary Treatment System and Infiltration / treatment area **(Section 10.2)** ☐

Discharge Route ¹

5.0 SELECTED DWWTS

Propose to install:

and discharge to:

Invert level of the trench/bed gravel or drip tubing (m)

Site Specific Conditions (e.g. special works, site improvement works testing etc.

¹ A discharge of sewage effluent to "waters" (definition includes any or any part of any river, stream, lake, canal, reservoir, aquifer, pond, watercourse or other inland waters, whether natural or artificial) will require a licence under the Water Pollution Acts 1977-90. Refer to Section 2.4.

6.0 TREATMENT SYSTEM DETAILS

SYSTEM TYPE: Septic Tank Systems (Chapter 7)

Tank Capacity (m ³)	<input type="text"/>	Percolation Area		Mounded Percolation Area	
		No. of Trenches	<input type="text"/>	No. of Trenches	<input type="text"/>
		Length of Trenches (m)	<input type="text"/>	Length of Trenches (m)	<input type="text"/>
		Invert Level (m)	<input type="text"/>	Invert Level (m)	<input type="text"/>

SYSTEM TYPE: Secondary Treatment System (Chapters 8 and 9) and polishing filter (Section 10.1)

Secondary Treatment Systems receiving septic tank effluent (Chapter 8)

Media Type	Area (m ²)*	Depth of Filter	Invert Level
Sand/Soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
Soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
Constructed Wetland	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>	<input type="text"/>

Packaged Secondary Treatment Systems receiving raw wastewater (Chapter 9)

Type	<input type="text"/>
Capacity PE	<input type="text"/>
Sizing of Primary Compartment	<input type="text"/> m ³

Polishing Filter*: (Section 10.1)

Surface Area (m ²)*	<input type="text"/>	Option 3 - Gravity Discharge Trench length (m)	<input type="text"/>
Option 1 - Direct Discharge Surface area (m ²)	<input type="text"/>	Option 4 - Low Pressure Pipe Distribution Trench length (m)	<input type="text"/>
Option 2 - Pumped Discharge Surface area (m ²)	<input type="text"/>	Option 5 - Drip Dispersal Surface area (m ²)	<input type="text"/>

SYSTEM TYPE: Tertiary Treatment System and infiltration / treatment area (Section 10.2)

Identify purpose of tertiary treatment

Provide performance information demonstrating system will provide required treatment levels

Provide design information

DISCHARGE ROUTE:

Groundwater	<input type="checkbox"/>	Hydraulic Loading Rate * (l/m ² .d)	<input type="text"/>	Surface area (m ²)	<input type="text"/>
Surface Water **	<input type="checkbox"/>	Discharge Rate (m ³ /hr)	<input type="text"/>		

* Hydraulic loading rate is determined by the percolation rate of subsoil

** Water Pollution Act discharge licence required

6.0 TREATMENT SYSTEM DETAILS

QUALITY ASSURANCE:

Installation & Commissioning

On-going Maintenance

7.0 SITE ASSESSOR DETAILS

Company:

Prefix: First Name: Surname:

Address:

Qualifications/Experience:

Date of Report:

Phone: E-mail

Indemnity Insurance Number:

Signature: _____

NOTE: To secure your work prior to forwarding to third parties please select **Print**, select Printer **“print to PDF”** and name and save document.