



SITE CHARACTERISATION FORM

File Ref	PTT1526	Date Ready	27/04/2010	GPS Co-ordinates	235103 220148
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1.0 GENERAL DETAILS

Applicant

Applicant Address

Site Location and Townland **Site Area**

Phone No

Max no. Residents	<input type="text" value="N/A"/>	No. Double bedrooms	<input type="text" value="N/A"/>	No. Single bedrooms	<input type="text" value="N/A"/>
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Proposed Water Supply: Mains Private Well/Borehole Group Well/Borehole

Soil Type

Aquifer Category: Regionally Important Locally important Poor

Vulnerability

Bedrock Type

Public/Group water scheme within 1km

Groundwater Protection Scheme **Groundwater Protection Response** **Source Protection Area**

Flood Risk

Presence of Significant Sites (Architectural, Natural and Historical)

Previous Experience in the Area

Comments

2.0 ON SITE ASSESSMENT

Landscape Position

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

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 Roads

Outcrops (Bedrock and/or subsoil)

Surface water ponding Lakes

Beaches /Shellfish Areas/ Wetlands

Karst Features Water-courses

Drainage ditches Springs /Wells

Comments

3.1 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. NHA's SAC's SPA's and/or Archaeological etc.) without prior advice from National Parks and Wildlife Service or the Heritage Service.

Depth of Trial hole (m) Depth of water ingress: Rock Type

Depth from Ground Surface to Bedrock (m) Depth from Ground Surface to water table (m)

Date and Time of excavation Date and Time of Examination

Depth of P/T Test*	Soil/Subsoil texture and Classification**	Plasticity and dilatancy***	Soil Structure	Density /Compactness	Colour ****	Preferential Flowpaths
0.1 m	Black CLAY	Dilatant	Crumb	Uncompact	Black	N/A
0.2 m	Topsoil	4 ribbons				
0.3 m						
0.4 m						
0.5 m						
0.6 m	Boulder CLAY	4 ribbons	Structureless	Soft	Brown	N/A
0.7 m						
0.8 m						
0.9 m	Mottling - - - - -					
1.0 m						
1.1 m	SILT	Dilatant	Structureless	Firm	Grey	N/A
1.2 m						
1.3 m						
1.4 m						
1.5 m	Water table present here.					
1.6 m						
1.7 m						
1.8 m						
1.9 m						
2.0 m						
2.1 m						
2.2 m						
2.3 m						
2.4 m						
2.5 m						
2.6 m						
2.7 m						
2.8 m						
2.9 m						
3.0 m						

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Evaluation

Likely T Value

3.2 (a) PERCOLATION ("T") TEST FOR DEEP SUBSOILS AND/OR WATER TABLE

STEP 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm) (A)	900	900	900
Depth from ground surface to base of hole (mm) (B)	1300	1300	1300
Depth of hole (mm) [B-A]	400	400	400
Dimensions of hole [length x breadth (mm)]	300 x 300	300 x 300	300 x 300

STEP 2: Pre-soaking Test holes

Date and Time Pre-soaking Started	12/05/2010 13.00	12/05/2010 13.00	12/05/2010 13.00

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

STEP 3: Measuring T_{100}

Percolation Test Hole	1	2	3
Date of Test	13/05/2010	13/05/2010	13/05/2010
Time filled to 400mm	0	0	0
Time water level at 300mm	231	230	245
Time to drop 100mm (T_{100})	231	230	245
Average T_{100}	235.3		

If $T_{100} > 300$ minutes then T value >90 – site is unsuitable for discharge to ground
 If $T_{100} \leq 210$ minutes then go to STEP 4
 If $T_{100} \geq 210$ minutes then go to STEP 5

STEP 4: Standard method where $T_{100} \leq 210$ minutes

Percolation Test Hole No	1			2			3					
	Fill No.	Start Time	Finish Time	Δt (min)	Start Time	Finish Time	Δt (min)	Start Time	Finish Time	Δt (min)		
1												
2												
3												
Average Δt Value												
	Average $\Delta t/4 =$ Hole No. 1			<input type="text"/>	Average $\Delta t/4 =$ Hole No. 2			<input type="text"/>	Average $\Delta t/4 =$ Hole No. 3			<input type="text"/>

Result of Test T = (min/25mm)

Comments

STEP 5: Modified Method where $T_{100} > 210$ minutes

Percolation Test Hole No	1				2				3					
	Fall of water in hole (mm)	Time Factor = T_F	Time of Fall (mins) = T_m	$K_{f8} = T_F / T_m$	T-Value = $4.45 K_{f8}$	Fall of water in hole (mm)	Time Factor = T_F	Time of Fall (mins) = T_m	$K_{f8} = T_F / T_m$	T-Value = $4.45 K_{f8}$	Fall of water in hole (mm)	Time Factor = T_F	Time of Fall (mins) = T_m	$K_{f8} = T_F / T_m$
300 – 250	8.1	120	0.0675	65.9	8.1	125	0.0648	68.67	8.1	127	0.0637	69.9		
250 – 200	9.7	125	0.0776	57.34	9.7	127	0.0763	58.32	9.7	127	0.0764	58.25		
200 – 150	11.9	127	0.0937	47.49	11.9	129	0.0922	48.26	11.9	131	0.0908	49.00		
150 - 100	14.1	129	0.1093	40.71	14.1	131	0.1076	41.35	14.1	133	0.1060	41.98		
Average T Value	T – Value Hole 1= (t_1)			52.86	T – Value Hole 2= (t_2)			54.15	T – Value Hole 3= (t_3)			54.78		

Result of Test T = 53.93 (min/25mm)

Comments Relatively slow percolation rate achieved.

3.2 (b) PERCOLATION ("P") TEST FOR SHALLOW SUBSOILS AND/OR WATER TABLE

STEP 1: Test Hole Preparation

Percolation Test Hole	1	2	3
Depth from ground surface to top of hole (mm) (A)	0	0	0
Depth from ground surface to base of hole (mm) (B)	400	400	400
Depth of hole (mm) [B-A]	400	400	400
Dimensions of hole [length x breadth (mm)]	300 x 320	310 x 310	350 x 340

STEP 2: Pre-soaking Test holes

Date and Time Pre-soaking Started	12/05/2010 13.00	12/05/2010 13.00	12/05/2010 13.00

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

STEP 3: Measuring P₁₀₀

Percolation Test Hole	1	2	3
Date of Test	13/05/2010	13/05/2010	13/05/2010
Time filled to 400mm	0	0	0
Time water level at 300mm	55	50	49
Time to drop 100mm (P ₁₀₀)	55	50	49
Average P ₁₀₀			51.3

If P₁₀₀ > 300 minutes then T value > 90 – site is unsuitable for discharge to ground
 If P₁₀₀ ≤ 210 minutes then go to STEP 4
 If P₁₀₀ ≥ 210 minutes then go to STEP 5

STEP 4: Standard method where $P_{100} \leq 210$ minutes

Percolation Test Hole No	1			2			3		
	Start Time	Finish Time	Δp (min)	Start Time	Finish Time	Δp (min)	Start Time	Finish Time	Δp (min)
Fill No. 1	0	60	60	0	60	60	0	49	49
2	0	68	68	0	61	61	0	55	55
3	0	72	72	0	68	68	0	63	63
Average Δp Value			66.7			63			13.93
	Average $\Delta p/4 =$ Hole No. 1		16.7	Average $\Delta p/4 =$ Hole No. 2		15.75	Average $\Delta p/4 =$ Hole No. 3		13.93

Result of Test P = (min/25mm)

Comments
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STEP 5: Modified Method where $P_{100} > 210$ minutes

Percolation Test Hole No	1				2				3			
	Time Factor = T_F	Time of Fall (mins) = T_m	$K_{f8} = T_F / T_m$	P-Value = $4.45 K_{f8}$	Time Factor	Time of Fall (mins) = T_m	$K_{f8} = T_F / T_m$	P-Value = $4.45 K_{f8}$	Time Factor	Time of Fall (mins) = T_m	$K_{f8} = T_F / T_m$	P-Value = $4.45 K_{f8}$
300 – 250	8.1											
250 – 200	9.7											
200 – 150	11.9											
150 - 100	14.1											
Average P Value	P-Value Hole 1 = (p_1)				P-Value Hole 2 = (p_2)				P-Value Hole 3 = (p_3)			

Result of Test P = (min/25mm)

Comments



4. CONCLUSION OF SITE CHARACTERISATION

Integrate the information from the desk study and on site assessment above and conclude the type of system(s) that is (are) appropriate. The information to choose the optimum final disposal route of the treated wastewater.

Not suitable for development

Suitable for ¹

1. Septic tank system (septic tank and percolation area)

2. Secondary Treatment System

a. septic tank and filter system constructed on-site and polishing filter; or

b. packaged wastewater treatment system and polishing filter

Discharge Route

Via Ground

5. RECOMMENDATION

Propose to install

and discharge to

Trench Invert level (m)

Site specific conditions

Packaged effluent treatment system followed by intermittent soil filter above ground as per fig 8.7. Intermittent soil filter page 32 EPA CoP 2009 having trench invert level 0.5m above ground level. All imported material to be of appropriate T value and installed in line with CoP 2009. All material to be as EPA CoP 2009. Setback distances are achievable on site.

BM
13/05/2010

¹ note: more than one option may be suitable for a site and this should be recorded

6. TREATMENT SYSTEM DETAILS

PRIOR TO SUBMISSION TO THE PLANNING SECTION OF OFFALY COUNTY COUNCIL THE TREATMENT SYSTEM DESIGN DETAILS, INCLUDING DESIGN DETAILS OF THE INFILTRATION SYSTEM PROPOSED FOR THE SITE, MUST BE COMPLETED BY A COMPETENT, SUITABLY QUALIFIED AND PROFESSIONALLY INDEMNIFIED PERSON AND IN ACCORDANCE WITH THE CODE OF PRACTICE: WASTEWATER TREATMENT & DISPOSAL SYSTEMS SERVING SINGLE HOUSES (P.E. < 10).

System Type: Secondary Treatment System

Filter Systems

Media Type	Area (m ²)	Depth of Filter	Invert Level
Sand/soil	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>	<input type="text"/>

Package Treatment Systems

Type

Capacity PE

Sizing of Primary Compartment (m³)

System Type: Tertiary Treatment System

Polishing Filter: Surface Area (m²)*

Or Gravity Fed:

No. of Trenches

Length of Trenches

Invert Level

Package treatment System: Capacity (pe)

Constructed Wetland: Surface Area (m²)

DISCHARGE ROUTE

Groundwater Hydraulic Loading Rate* (l/m²) Surface Water Discharge Rate (m³/hr)

TREATMENT STANDARDS

Treatment System Performance Standards	BOD	SS	NH ₃	Total N	Total P
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

QUALITY ASSURANCE

Installation and Commissioning

Ongoing Maintenance

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