

# SITE CHARACTERISATION FORM

## COMPLETING THE FORM

### 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 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 B: SITE CHARACTERISATION FORM

File Reference:

## 1.0 GENERAL DETAILS (From planning application)

Prefix:  First Name:  Surname:

Address:  Site Location and Townland:

Telephone No:  Fax No:

E-Mail:

Maximum no. of Residents:  No. of Double Bedrooms:  No. of Single Bedrooms:

Proposed Water Supply: Mains  Private Well/Borehole  Group Well/Borehole

## 2.0 GENERAL DETAILS (From planning application)

Soil Type, (Specify Type):

Aquifer Category: Regionally Important  Locally Important  Poor

Vulnerability: Extreme  High  Moderate  Low  High to Low  Unknown

Bedrock Type:

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

Groundwater Protection Scheme (Y/N):  Source Protection Area: 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)

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:

Watercourse/Stream\*:

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 P/T Test*	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"/>					

Likely T value:

**Note:** \*Depth of percolation test holes should be indicated on log above. (Enter P or T 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:

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**3.3(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)			
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**

Date and Time pre-soaking started

--	--	--	--	--	--

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

**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  $T_{100} > 300$  minutes then T-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)	$\Delta t$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta t$ (min)
1	<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"/>
2	<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"/>
3	<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"/>
Average $\Delta t$ Value	<input type="text"/>			<input type="text"/>			<input type="text"/>		
	Average $\Delta t/4 =$ [Hole No.1] <input type="text"/> ( $t_1$ )			Average $\Delta t/4 =$ [Hole No.2] <input type="text"/> ( $t_2$ )			Average $\Delta t/4 =$ [Hole No.3] <input type="text"/> ( $t_3$ )		

Result of Test:  $T =$   (min/25 mm)

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) = $T_m$	$K_{fs} = T_f / T_m$	T - Value = 4.45 / $K_{fs}$	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T - Value = 4.45 / $K_{fs}$	Time Factor = $T_f$	Time of fall (mins) = $T_m$	$K_{fs} = T_f / T_m$	T - Value = 4.45 / $K_{fs}$
300 - 250	8.1	<input type="text"/>	<input type="text"/>	<input type="text"/>	8.1	<input type="text"/>	<input type="text"/>	<input type="text"/>	8.1	<input type="text"/>	<input type="text"/>	<input type="text"/>
250 - 200	9.7	<input type="text"/>	<input type="text"/>	<input type="text"/>	9.7	<input type="text"/>	<input type="text"/>	<input type="text"/>	9.7	<input type="text"/>	<input type="text"/>	<input type="text"/>
200 - 150	11.9	<input type="text"/>	<input type="text"/>	<input type="text"/>	11.9	<input type="text"/>	<input type="text"/>	<input type="text"/>	11.9	<input type="text"/>	<input type="text"/>	<input type="text"/>
150 - 100	14.1	<input type="text"/>	<input type="text"/>	<input type="text"/>	14.1	<input type="text"/>	<input type="text"/>	<input type="text"/>	14.1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Average T- Value	T- Value Hole 1= ( $t_1$ ) <input type="text"/>				T- Value Hole 1= ( $t_2$ ) <input type="text"/>				T- Value Hole 1= ( $t_3$ ) <input type="text"/>			

Result of Test:  $T =$   (min/25 mm)

Comments:

**3.3(b) Percolation (“P”) Test for Shallow Soil / 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)			
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**

Date and Time pre-soaking started						
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Each hole should be pre-soaked twice before the test is carried out. Each hole should be empty before refilling.

**Step 3: Measuring P<sub>100</sub>**

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 (P <sub>100</sub> )			
Average P <sub>100</sub>			

If P<sub>100</sub> > 300 minutes then P-value >90 – site unsuitable for discharge to ground

If P<sub>100</sub> ≤ 210 minutes then go to Step 4;

If P<sub>100</sub> > 210 minutes then go to Step 5;

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

Percolation Test Hole	1			2			3		
Fill no.	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta p$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta p$ (min)	Start Time (at 300 mm)	Finish Time (at 200 mm)	$\Delta p$ (min)
1									
2									
3									
Average $\Delta p$ Value									
	Average $\Delta p/4 =$ [Hole No.1] <input type="text"/> ( $p_1$ )			Average $\Delta p/4 =$ [Hole No.2] <input type="text"/> ( $p_2$ )			Average $\Delta p/4 =$ [Hole No.3] <input type="text"/> ( $p_3$ )		

Result of Test:  $P =$   (min/25 mm)

Comments:

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

Percolation Test Hole No.	1				2				3			
Fall of water in hole (mm)	Time Factor $= T_f$	Time of fall (mins) $= T_m$	$K_{fs} = T_f / T_m$	P-Value $= 4.45 / K_{fs}$	Time Factor $= T_f$	Time of fall (mins) $= T_m$	$K_{fs} = T_f / T_m$	P-Value $= 4.45 / K_{fs}$	Time Factor $= T_f$	Time of fall (mins) $= T_m$	$K_{fs} = T_f / T_m$	P-Value $= 4.45 / K_{fs}$
300 - 250	8.1				8.1				8.1			
250 - 200	9.7				9.7				9.7			
200 - 150	11.9				11.9				11.9			
150 - 100	14.1				14.1				14.1			
Average P- Value	P- Value Hole 1= ( $p_1$ ) <input type="text"/>				P- Value Hole 2= ( $p_2$ ) <input type="text"/>				P- Value Hole 3= ( $p_3$ ) <input type="text"/>			

Result of Test:  $P =$   (min/25 mm)

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, bedrock.
3. North point should always be included.
4. (a) 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. Cross sectional drawing of the site and the proposed layout<sup>1</sup> should be submitted.
6. Photographs of the trial hole, test holes and site (date and time referenced).

<sup>1</sup> 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.

Not Suitable for Development

Suitable for <sup>1</sup>	Discharge Route
1. Septic tank system (septic tank and percolation area) <input type="checkbox"/>	<input type="text"/>
2. Secondary Treatment System	
a. septic tank and filter system constructed on-site and polishing filter; or <input type="checkbox"/>	
b. packaged wastewater treatment system and polishing filter <input type="checkbox"/>	

## 5.0 RECOMMENDATION

Propose to install:

and discharge to:

Trench Invert level (m):

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

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

<sup>2</sup> 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 2.6.2.

## 6.0 TREATMENT SYSTEM DETAILS

### SYSTEM TYPE: Septic Tank System

Tank Capacity (m <sup>3</sup> )	<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

#### Filter Systems

Media Type	Area (m <sup>2</sup> )*	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"/>

#### Package Treatment Systems

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

### SYSTEM TYPE: Tertiary Treatment System

<b>Polishing Filter:</b> Surface Area (m <sup>2</sup> *) <input type="text"/> or <b>Gravity Fed:</b> No. of Trenches <input type="text"/> Length of Trenches (m) <input type="text"/> Invert Level (m) <input type="text"/>	<b>Package Treatment System:</b> Capacity (pe) <input type="text"/> <b>Constructed Wetland:</b> Surface Area (m <sup>2</sup> *) <input type="text"/>
---	---

### DISCHARGE ROUTE:

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

### TREATMENT STANDARDS:

Treatment System Performance Standard (mg/l)	BOD	SS	NH <sub>4</sub> - N	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 & Commissioning

#### On-going Maintenance

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

\*\* Water Pollution Act discharge licence required

## 7.0 SITE ASSESSOR DETAILS

Company:

Prefix:  First Name:  Surname:

Address:

Qualifications/Experience:

Date of Report:

Phone:  Fax:  e-mail

Indemnity Insurance Number:

Signature: \_\_\_\_\_

## Site Photos – Emlaghmore



Trial Hole



Spoil

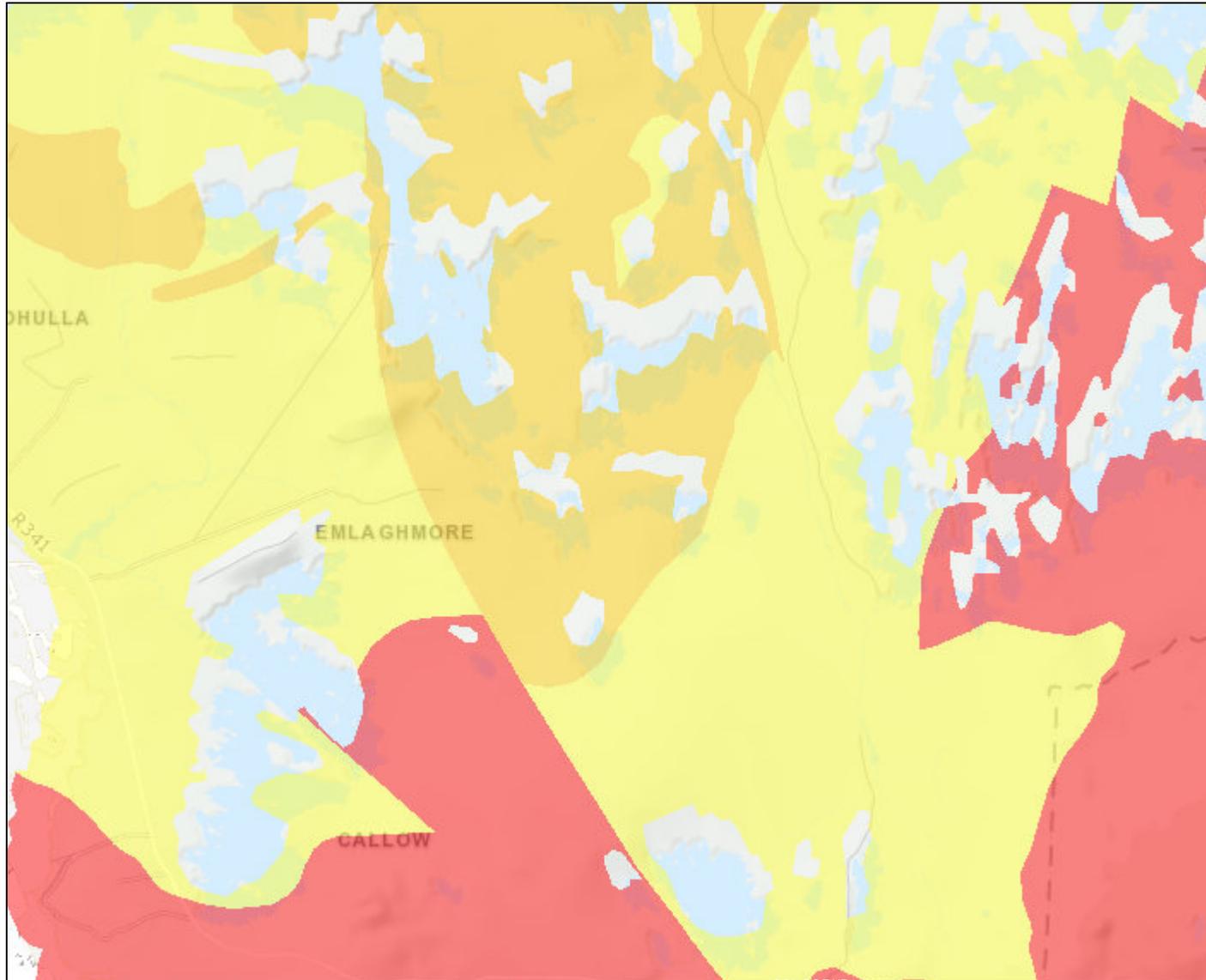


P Test Holes Filled



T Test Holes Filled

# Bedrock



## Legend

### Generalised Bedrock (Rock Unit Groups)

- Basalts & other
- Volcanic rocks
- Permo-Triassic
- Sandstones
- Permo-Triassic
- Mudstones and Gypsum
- Westphalian
- Sandstones
- Westphalian Shales
- Namurian Shales
- Namurian
- Sandstones
- Namurian
- Undifferentiated
- Dinantian Shales and Limestones
- Dinantian Mixed
- Sandstones, Shales and Limestones
- Dinantian
- Sandstones
- Dinantian Pure
- Bedded Limestones
- Dinantian Upper
- Impure Limestones
- Dinantian
- Dolomitised
- Limestones
- Dinantian Pure
- Unbedded
- Limestones
- Dinantian Lower
- Impure Limestones
- Dinantian (early)
- Sandstones, Shales and Limestones
- Dinantian Mudstones and Sandstones (Cork Group)
- Devonian Kiltorcan-type Sandstones
- Devonian Old Red
- Sandstones
- Granites & other
- Igneous Intrusive rocks
- Silurian
- Metasediments and Volcanics

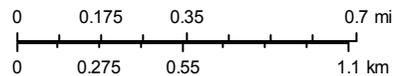
- Ordovician
- Metasediments
- Ordovician Volcanics
- Cambrian
- Metasediments
- Precambrian
- Quartzites, Gneisses & Schists
- Precambrian Marbles

Scale: 1:25,000

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## Legend

### Teagasc Soils

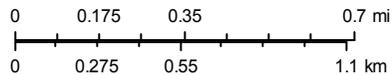
- AminDW - Deep well drained mineral (Mainly acidic)
- AminPD - Mineral poorly drained (Mainly acidic)
- AminPDPT - Peaty poorly drained mineral (Mainly acidic)
- AminSW - Shallow well drained mineral (Mainly acidic)
- AminSP - Shallow poorly drained mineral (Mainly acidic)
- AminSPPT - Shallow peaty poorly drained mineral (Mainly acidic)
- AminSRPT - Shallow, rocky, peaty/non-peatymi... complexes (Mainly acidic)
- BminDW - Deep well drained mineral (Mainly basic)
- BminPD - Mineral poorly drained (Mainly basic)
- BminPDPT - Peaty poorly drained mineral (Mainly basic)
- BminSW - Shallow well drained mineral (Mainly basic)
- BminSP - Shallow poorly drained mineral (Mainly basic)
- BminSPPT - Shallow peaty poorly drained mineral (Mainly basic)
- BminSRPT - Shallow, rocky, peaty/non-peatymi... complexes (Mainly basic)
- BminSW - Shallow well drained mineral (Mainly basic)
- BminSP - Shallow poorly drained mineral (Mainly basic)
- BminSRPT - Shallow, rocky, peaty/non-peatymi... complexes (Mainly basic)
- BktPt - Blanket peat
- FenPt - Fen peat
- RsPt - Raised Peat Cut
- Cutover/cutaway peat
- AlluvMIN - Alluvial (mineral)
- AlluvMRL - Alluvial (marl)
- Lac - Lacustrine type soils
- Scree - Scree
- AeoUND - Aeolian undifferentiated
- MarSands - Marine sand and gravel
- MarSed - Marine/estuarine sediments
- Made - Made ground
- Water - Water
- Unclass

Scale: 1:25,000

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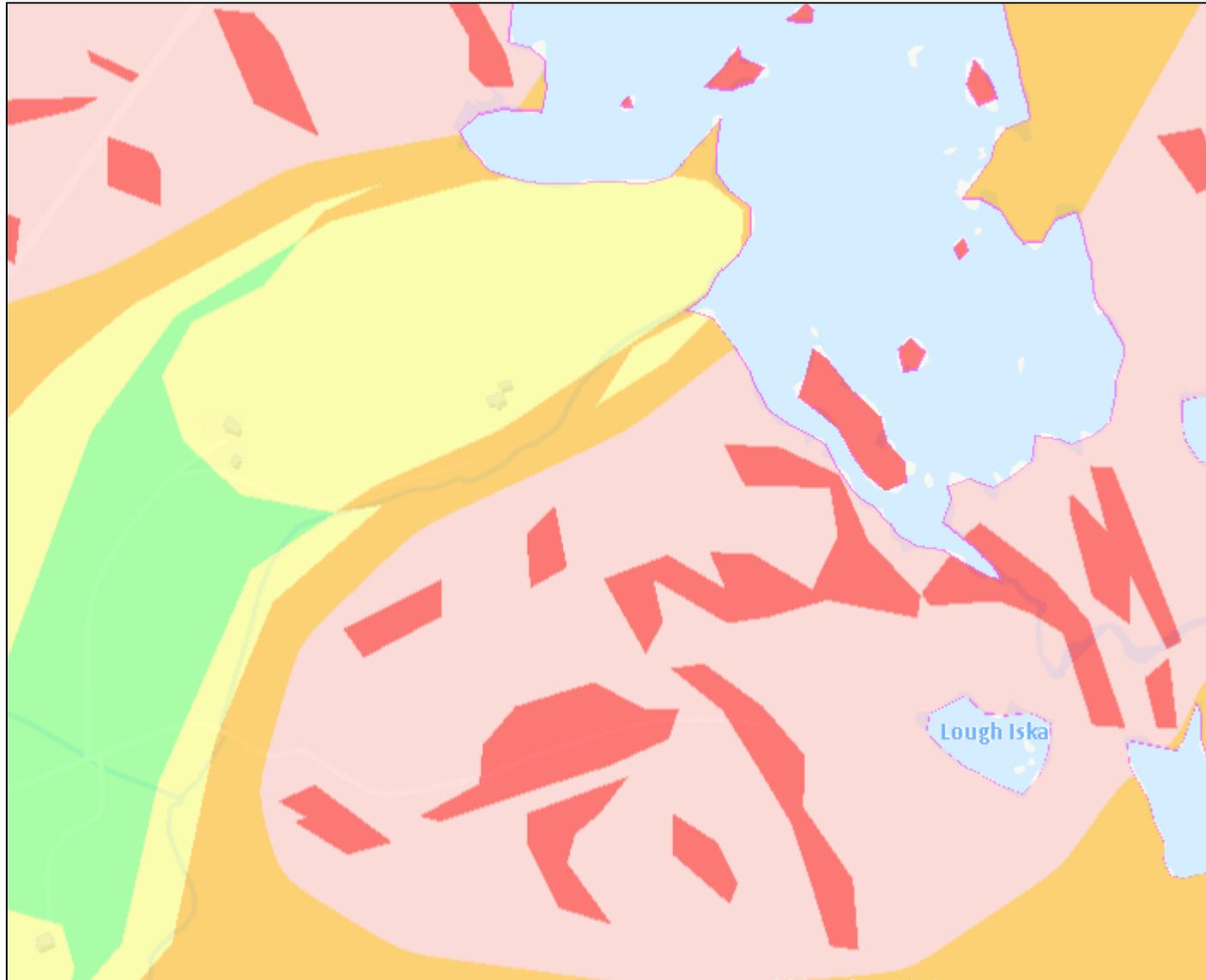
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# Vulnerability

## Legend National Groundwater Vulnerability Ireland

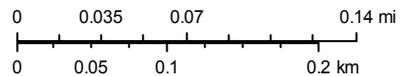
- Rock at or near
- Surface or Karst
- Extreme
- High
- Moderate
- Low
- Water



Scale: 1:5,000  
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**Tricel Site Recommendation Report  
Tricel Novo Package Plant and Pumped Soil Polishing Filter (Pressurised System)**



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<b>Date</b>	20/03/2020
<b>Report No:</b>	SA3_G_6825
<b>Client Name</b>	Patrick Ridge
<b>Site Location &amp; Townland</b>	Emlaghmore, Ballyconneely, Galway Tel: 0872418991

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Thank you for choosing Tricel for your wastewater treatment requirements. This report contains the following information for your site and is based on a population of 6 and a P/T value of between 21-40.

Please see outlined below the accompanying documents:

**Section 1: Information on the Tricel Novo Package Plant**

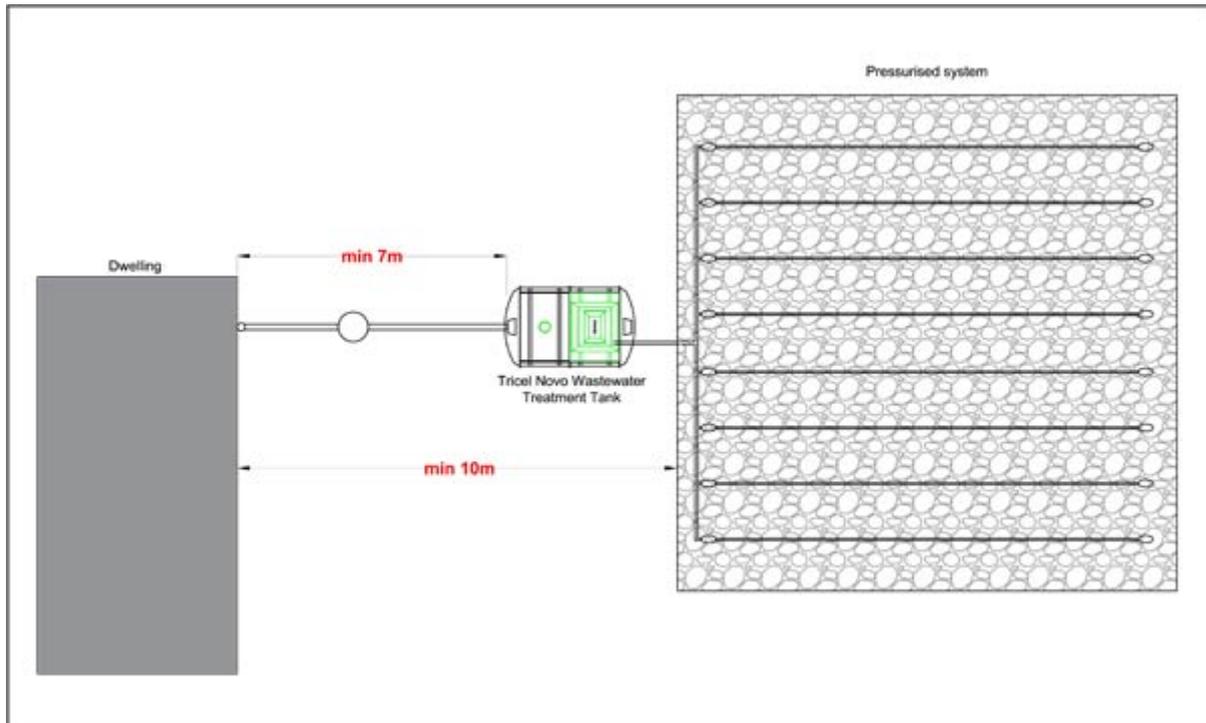
- Manufacturers report and sizing of the Tricel Novo Package Plant
- Drawing of the Tricel Novo Package Plant
- Certification of the selected Tricel Novo Package Plant
- Technical information on the Tricel Novo Package Plant
- Pump selection and technical data
- Optional maintenance agreement for Tricel Novo Package Plant

**Section 2: Information on the percolation area**

- Pumped soil polishing filter separation distances and loading rates
- Pumped soil polishing filter technical information

Based on the information provided to us and using SR66 and the EPA Code of Practice: Wastewater Treatment and Disposal Systems Serving Single Houses (p.e.  $\leq 10$ ), the appropriate solution for treating wastewater on your site is a Tricel Novo wastewater treatment plant followed by a pumped soil polishing filter. The Tricel Novo provides secondary treatment using submerged aerated filter technology. The pumped soil polishing filter consists of a series of pipe work which distribute the effluent under pressure for treatment using the in situ subsoil.

**Typical layout of a Tricel Novo Package Plant and Pumped Soil Polishing Filter:**



For your site we recommend a Tricel Novo IRL6+ pumped wastewater treatment plant which is designed to treat a maximum of 900 litres of wastewater per day. This recommendation is based on the EPA Code of Practice which states the plant selection should be based on a hydraulic loading rate of 150l/per person/per day. The Novo IRL6+ pumped has a capacity of 4000 litres, of which 2400 are in the primary chamber, this ensures a long desludging interval. The Tricel Novo range of wastewater treatment plants is fully in conformance with EN12566-3 and complies with SR66.

The Tricel Novo pumped plant contains a DOMO 15 pump based on an the Length of Rising Main 1.0 metres and Difference in Height of Rising Main 1.0 metres. The plant outlet is fitted with a 38mm compression fitting for connection to a rising main of 38mm internal bore pipework . Details and pump specifications are contained in Section 1.

For the soil polishing filter a minimum of 90m<sup>2</sup> of polishing filter will be required. EPA Code of Practice outlines a loading rate for polishing filter of 10 l/m<sup>2</sup>/d based on a P/T value of 21-40.

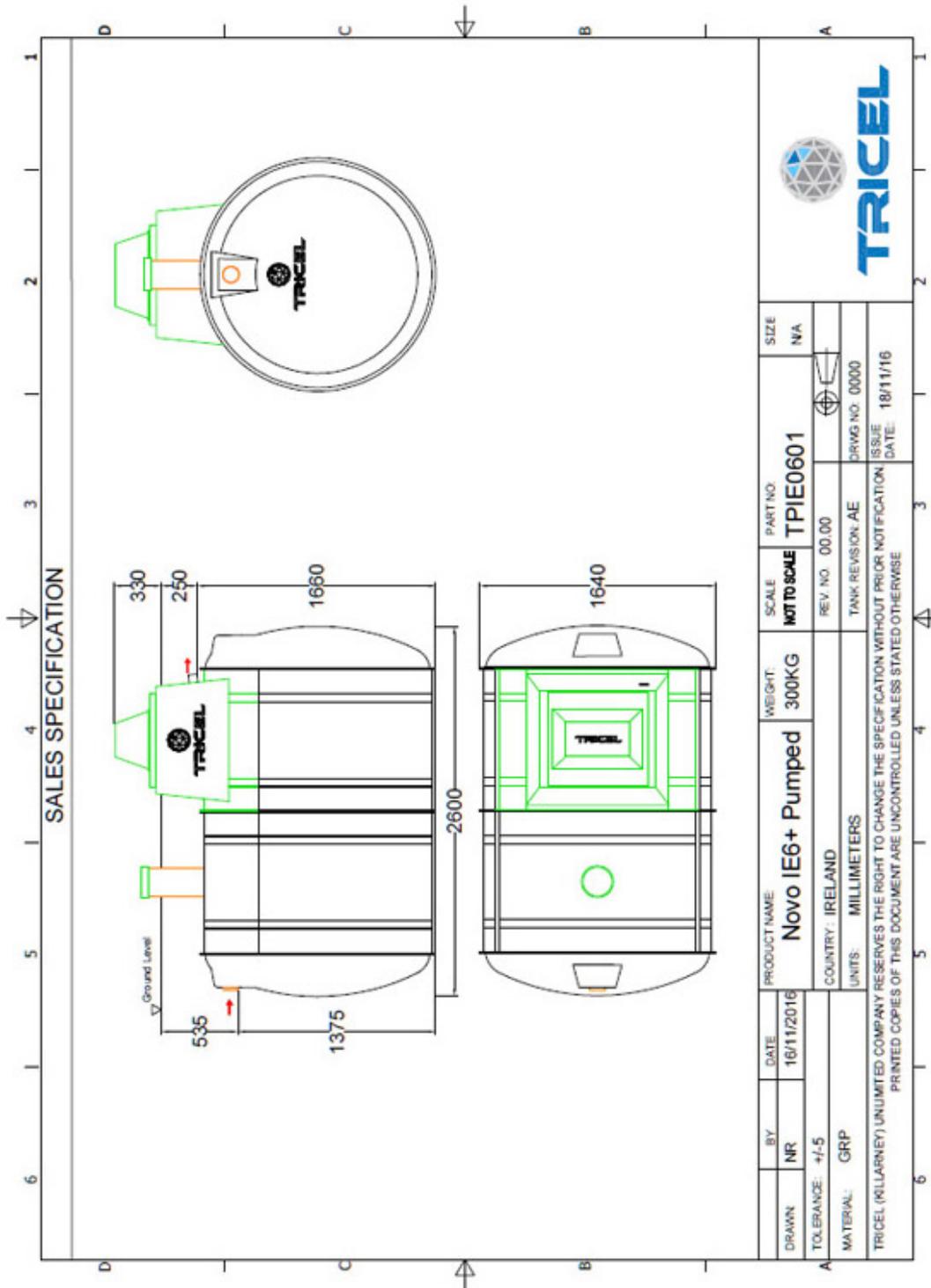
**Note:**

In the above named site, a substitute wastewater treatment system may not be put in place of the Tricel wastewater treatment system.

*This recommendation only applies to the above named site based on the information supplied to Tricel. A Site Characterisation Form should accompany this report. Tricel cannot be responsible for misinformation due to misleading information being received by us from clients.*

Please see attached the accompanying documents in Section 1 for the Tricel Novo wastewater treatment plant and Section 2 for the percolation area.

Section 1



**Certificate in accordance with SR66 for EN12566-Part 3**



**PIA**  
Prüfinstitut für  
Abwassertechnik  
GmbH

## TREATMENT PERFORMANCE RESULTS

**Tricel (Killarney)**  
 Ballyspillane Industrial Est., Killarney, Co. Kerry, Ireland

**EN 12566-3**  
 Results corresponding to EN 12566-3 and S.R. 66  
 PIA-SR66-1512-1062

**Novo**  
 Submerged fixed film

---

Nominal organic daily load	0.26 kg/d		
Nominal hydraulic daily load	0.90 m <sup>3</sup> /d		
Material	Glass reinforced plastic		
Watertightness	Pass		
Structural behaviour (Calculation)	Pass (also wet conditions)		
Durability	Pass		
Treatment efficiency (nominal sequences)	Efficiency		Effluent
	COD	91.6 %	52 mg/l
	BOD <sub>5</sub>	95.9 %	11 mg/l
	NH <sub>4</sub> -N	79.9 %	8 mg/l
	SS	95.3 %	16 mg/l
Number of desludging	Not more than once		
Electrical consumption	1.1 kWh/d		

---

Performance tested by:

**PIA – Prüfinstitut für Abwassertechnik GmbH**  
 (PIA GmbH)  
 Hergenrather Weg 30  
 52074 Aachen, Germany

This document replaces neither the declaration of performance nor the CE marking.



Notified Body  
No.: 1739



Certified according to  
ISO 9001:2008





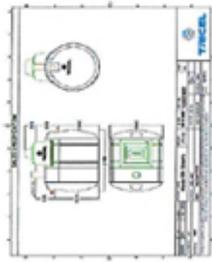
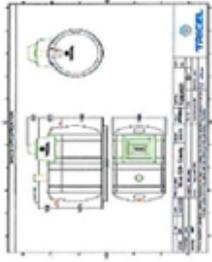
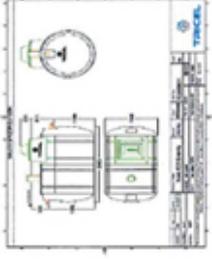
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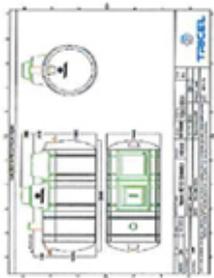
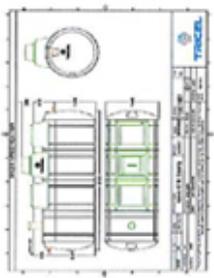
Elmar Lancé  
July 2016



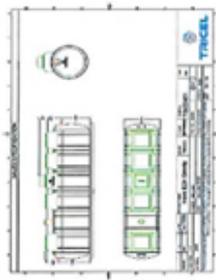
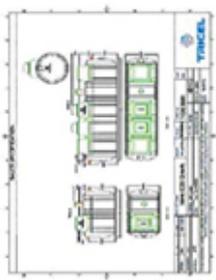
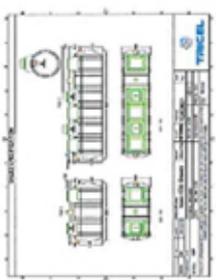
**Novo range and its referring test reports:**

Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
Initial Type Test (ITT) 6		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass PIA2010-103B18SBe	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
6		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
8		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01

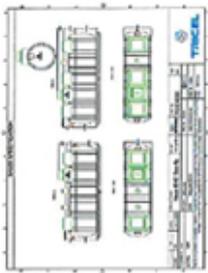
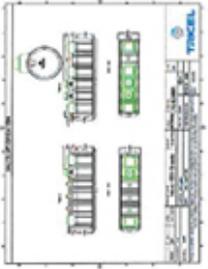


Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
10		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
12		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
18		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01



Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
24		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass PIA2013-ST-PIT-1303-1018.01 For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
30		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
36		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01



Population equivalent (PE)	Drawing of model of the range	Watertightness (EN 12566-3 Annex A)	Treatment Efficiency (EN 12566-3 Annex B)	Structural Behaviour (EN 12566-3 Annex C)	Durability
42		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01
50		Pass PIA2009-WD-AT0909-1055 PIA2015-WD/NC-1404-1021.01 PIA2015-WD/NC-1406-1031.01	Pass Range conformity according to S.R. 66:2015	Pass For wet ground conditions also, 1.25 m installation depth from inlet invert	Pass PIA2015-DH-1504-1023.01

## Tricel® Novo

For Single Dwellings & Small Communities

*Innovative design for superior performance*



## What is the Tricel Novo

Tricel Novo wastewater treatment plants are reliable, easy to install and simple to maintain for all wastewater requirements. These highly functional plants can cater for ranges from 1 to 50 PE (population equivalents).

The Tricel Novo submerged aeration plant is suitable for domestic and light commercial or communal applications and uses simple proven fixed bed technology. Each system comprises of 3 independent treatment zones, all fulfilling a different stage of the purification process.

## European Certification Requirements

All Tricel wastewater treatment plants have been tested to European certification EN 12566-3 and comply with the requirements of S.R. 66:2015. This certification tests all plants for strength, water tightness, durability and treatment efficiency.

By using a wastewater treatment plant which is CE certified clients can rest assured that it has complied with tests and inspections which guarantee a high level of security and efficiency.

## How a Tricel Novo works

These plants use a simple, proven technology, consisting of 3 treatment zones. In each zone a different stage of the treatment occurs.

1. Wastewater from the dwelling, toilets, sinks, shower etc., enters the plant.
2. Effluent enters the primary settlement chamber. Settlement occurs when the heavier solids drop out of the wastewater and settle to the bottom of the tank to create sludge, and the lighter solids float to the top of the water to create a scum. The top layer acts as a seal and stops odours escaping. This chamber separates up to 70% of the solids present.
3. Next is the aeration chamber, where masses of naturally occurring bacteria inhabit specially designed plastic filter media. The bacteria feed on the waste removing it from the liquid. A continuous supply of air from a low pressure, high volume compressor in the top section of the unit sustains these bacteria. Wastewater passes through the filter media over and over, ensuring a very high treatment efficiency.
4. The liquid then proceeds to the final settlement chamber. Any remaining minute bacterial particles separate from the liquid within this chamber before discharge from the plant. This process slows the

liquid's velocity, allowing for any final trace impurities to settle to the bottom of the tank section. A sludge return system then returns these impurities back to the primary settlement chamber.

5. The remaining treated liquid now meets the required standard and is safely passed out of the Tricel Novo plant system. The treated effluent is now ready for discharge to a suitably designed discharge area as required by the relevant local authority.



Tricel Novo Wastewater Treatment Plant

## Key features & benefits

- ▶ Compression moulded SMC tank. The compression moulding process is one of the most technologically developed processes available to manufacture structural composites. Components are manufactured under heat and high pressure and have unrivalled strength and durability over standard GRP tanks or PE tanks.
- ▶ SMC is unique in the wastewater treatment industry with Tricel SMC tanks operating in some of the harshest climatic conditions for over 50 years with no defects.
- ▶ Tricel's ceramic diffuser is unique in the domestic wastewater treatment plant market and will last twice

as long as all standard competitors rubber equivalents. This saves money in both call out fees and replacement parts.

- ▶ No concrete backfill for installation on most sites saving up to €400 over lower quality grp/plastic competitors.
- ▶ No moving parts or pumps in the plant ensuring reliable operation and minimal maintenance and repair costs.
- ▶ Tricel Novo plants are designed with a shallow invert to reduce both installation and time costs

**Call us Today for a Free Quote**

**+ 353 (0) 64 6632421**

[sales@tricel.ie](mailto:sales@tricel.ie)

### Homeowners: Individual domestic installation



▶ The lightweight nature of the system makes for easy on-site delivery.



▶ No need for big excavators and large holes that disrupt and disturb your garden.



▶ Very low visual impact from fully installed units.

### Larger projects: Commercial installations up to 50PE



▶ These units are suitable for installation at housing estates, camping sites, hotels etc., and have low maintenance and running costs.



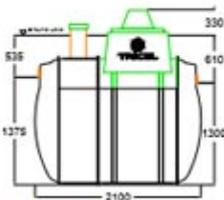
▶ Each WWTP unit is constructed of lightweight SMC and is easy to maneuver which simplifies the installation process.



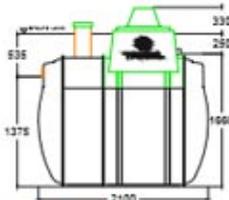
▶ Example of a fully installed 50PE Novo wastewater treatment unit in a 5-star hotel.

### Technical characteristics/ Plant dimensions

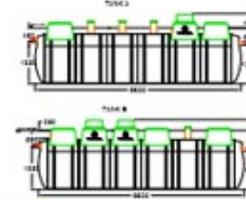
Novo Design Population	No. of people	Length	Width	Height	Horizontal inlet/outlet diameter	Weight empty	Inlet Invert to base	Outlet Invert to base	Inlet Invert to ground level	Air Blower rating	
		m	m	m	mm	kg	m	m	watts		
IE6	1-6	2.1	1.64	2.24	110	270	1.375	1.3	0.535	60	
IE6+	2-6	2.6	1.64	2.24	110	300	1.375	1.3	0.535	60	
IE8	2-8	2.6	1.64	2.24	110	300	1.375	1.3	0.535	80	
IE10	3-10	3.1	1.64	2.24	110	370	1.375	1.3	0.535	80	
IE12	4-12	3.6	1.64	2.27	110	400	1.375	1.3	0.535	100	
IE18	6-18	4.6	1.64	2.27	110	500	1.375	1.3	0.535	200	
IE24	8-24	6.6	1.64	2.27	150	700	1.35	1.3	0.56	200	
IE30	Tank A	10-30	2.6	1.64	1.99	150	300	1.35	1.3	0.46	
	Tank B		5.6	1.64	2.27	150	600	1.35	1.3	0.56	200 + 80
IE36	Tank A	12-36	3.6	1.64	1.99	150	400	1.35	1.3	0.46	
	Tank B		6.6	1.64	2.27	150	700	1.35	1.3	0.56	200 + 80
IE42	Tank A	14-42	5.6	1.64	2.27	150	600	1.35	1.3	0.46	
	Tank B		5.6	1.64	2.27	150	600	1.35	1.3	0.56	200 x 2
IE50	Tank A	16-50	6.6	1.64	2.27	150	700	1.35	1.3	0.46	
	Tank B		6.6	1.64	2.27	150	700	1.35	1.3	0.56	200 + 120 + 80



▶ **IE6 gravity outlet**  
Up to 6PE domestic gravity flow outlet.



▶ **IE6 pumped outlet**  
1-6 domestic pumped unit. Suitable for pumping to a raised discharge area (over).



▶ **Gravity IE50 outlet**  
Suitable for commercial installation, caters for up to 50 people.

### Tricel Novo riser options for deep installation

Tricel offer 3 different manhole riser heights to suit different invert/inlet levels. Manhole risers allow for the positioning of the treatment plants at the depth which is optimum to each individual installation. Wastewater is gravity fed from the home to your treatment plant. The inlet pipe's position from the premises determines the excavation depth for the WWTP plant. Tricel offer a choice of manhole risers 250mm/500mm/750mm to help with installation where site conditions require a flexible solution.

**Tricel Group**

Tricel is an established and world recognised global provider of high performance solutions for the Construction, Environmental, Water and Materials Industries and is a brand built upon service, back up and reliability.

We occupy a unique position in the field of reinforced plastics, combining the technical expertise of over 40 years in the press-moulding and composites industry. Tricel is proud of being one of the largest manufacturers of Wastewater Treatment plants in Europe, and are regarded by regulators as the standard setters within the industry.

Tricel are experts in Sheet Moulding Compound (SMC) processes and produce the only wastewater treatment plant in Europe constructed from this material. This process gives the highest strength to thickness ratio of any tank on the market, and has no risk of corrosion over time.

Our company offers industry leading innovative solutions that our customers can trust, and with manufacturing locations in 5 countries we supply a comprehensive range of products to over 50 countries worldwide.



**Membership of European governing bodies on wastewater treatment**



The Tricel Environmental Waste Water Treatment Plants are fully tested and accredited to **European standards for CE certification**. PIA (Prüfinstitut für Abwassertechnik GmbH) are the leading Test Institute in Europe for wastewater technology. Tricel Wastewater treatment plants meet with **EN12566-3** requirements which test both the quality of the components as well as the overall performance of the plant.



The **Irish Water Treatment Association (IWTA)** is the national association for the treatment, conservation, recycling and reuse of water and wastewater.



The **Irish Onsite Wastewater Association (IOWA)** formed in 2007 with the goal of improving the standard of professionalism in the on-site treatment of wastewater in Ireland.

**WARRANTY**

- The warranty period for mechanical parts within the products is **12 months** from the date of purchase. This includes the compressor, control panel, ceramic diffuser and all internal components.
- The SMC structure of the tanks carry a **10 year warranty** from date of purchase.
- All products are **CE certified** to EU safety, health and environmental requirements.

All warranties are subject to correct installation and use of the product, including maintenance as per manufacturer guidelines

**Get a Quote**

Contact us Today to get a free quote on  
**00 353 (0) 64 6632421**  
 or email us at **sales@tricel.ie**

Tricel, Ballyspillane Industrial Estate, Killarney, Co Kerry, Ireland  
 Tel: +353 (0) 64 6632421 | Email: sales@tricel.ie | www.tricel.ie

In accordance with Tricel's normal policy of product development these specifications are subject to change without notice.  
 Tricel (Killarney) Unlimited Company trading as Tricel



## Submersible Electric Pumps for drainage of dirty water

### DOMO Series



The DOMO series electric pumps are available with **twin-channel** or **vortex** impeller (DOMO VX). Designed to handle liquids with suspended solids up to 50 mm in diameter (35 mm for DOMO 7 and DOMO 7VX). Four basic models with 0,55 to 1,5 kW.  
**DRIVELUB SEAL SYSTEM.**

#### APPLICATIONS

- Pumping of effluent (VX model handles also suspended filaments).
- Emptying of septic tanks and residential sumps.
- Draining of flooded basements and garages.

#### SPECIFICATIONS

- **Maximum liquid temperature:** 35°C with fully submerged pump.
- **Dry motor.**
- **Power cord: H07RN-F**
  - single-phase: with plug.
  - three-phase: without plug.
- **Insulation class 155°C (F).**
- **IPX8 protection.**
- **Maximum immersion depth: 5 m.**
- **Versions:**
  - Single-phase: 220-240V, 50Hz 2 poles.
  - Three-phase: 220-240V, 50Hz 2 poles. 380-415V, 50Hz 2 poles.
- **Motor power:**
  - single-phase: **0,55 to 1,1 kW.**
  - three-phase: **0,55 to 1,5 kW.**

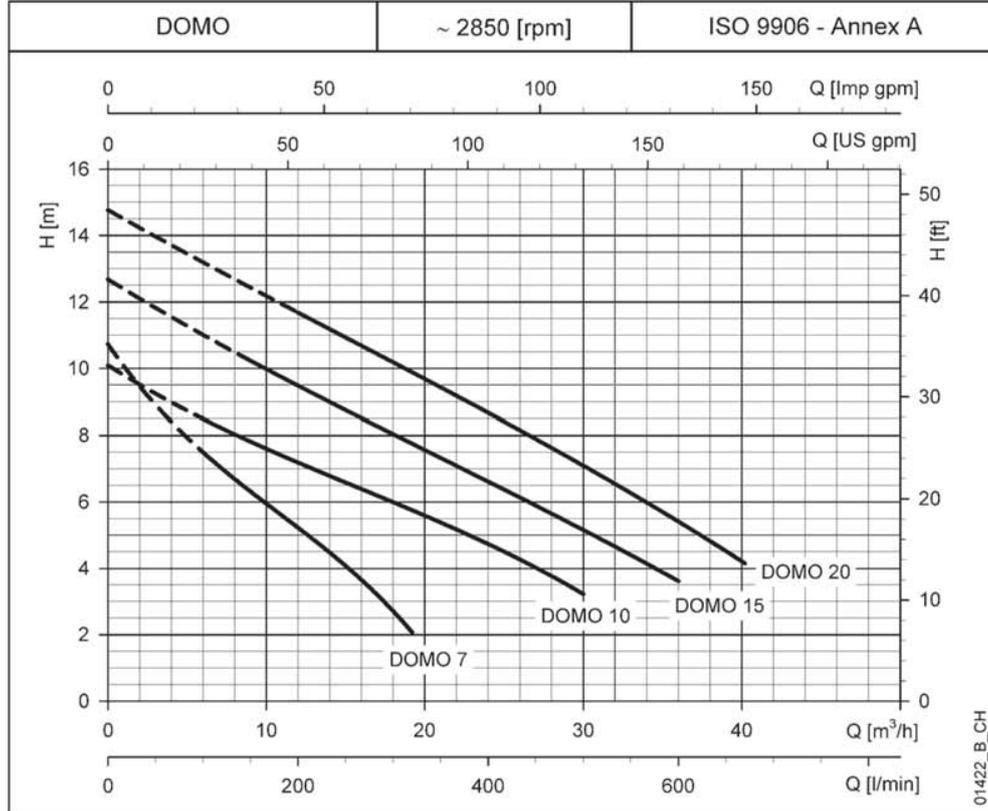
- **The single-phase versions** feature:
  - **pre-assembled float switch** for automatic pump operation.
  - **built-in capacitor.**
  - **thermal overload protection** to stop pump supply in case of overheating.
- The **DOMO 7** and **DOMO 7VX** models feature:
  - **Rp 1"1/2 threaded delivery port** (female gas).
  - handling of liquids with suspended **solids up to 35 mm** in diameter.
  - **fiberglass-reinforced technopolymer impeller** (DOMO S7 and DOMO S7VX models with stainless steel impeller are also available).
- The **DOMO 10-15-20** and **DOMO 10-15-20 VX** models feature:
  - **Rp 2" threaded delivery port** female gas (can be turned into a flanged version if an optional accessory is installed).
  - handling of liquids with suspended **solids up to 50 mm** in diameter.
  - **stainless steel twin-channel or vortex impeller.**

#### DRIVELUB SEAL SYSTEM

- Watertight electric motor protected by multiple seal system with **oil chamber.**  
A **V-ring** and **silicon carbide mechanical seal** (extremely resistant to wear and abrasion), as well as a **lip seal** which is continuously lubricated by the **DRIVELUB system**, provide an extreme barrier against infiltration.



**DOMO SERIES  
 OPERATING CHARACTERISTICS AT 50 Hz**



**HYDRAULIC PERFORMANCE TABLE**

PUMP TYPE	RATED POWER		Q = DELIVERY															
			l/min	0	100	150	200	250	300	320	400	500	600	670				
			m³/h	0	6													
	kW	HP	H = TOTAL HEAD METRES COLUMN OF WATER															
DOMO 7(T) - S7(T)	0,55	0,75	10,7	7,5	6,3	5,2	4,1	2,7	2,1									
DOMO 10(T)	0,75	1	10,1	8,5	7,8	7,2	6,6	6,0	5,8	4,7	3,2							
DOMO 15(T)	1,1	1,5	12,7	11,0	10,2	9,5	8,8	8,0	7,8	6,6	5,2	3,6						
DOMO 20T	1,5	2	14,8	13,2	12,4	11,7	10,9	10,2	9,9	8,7	7,1	5,4	4,2					

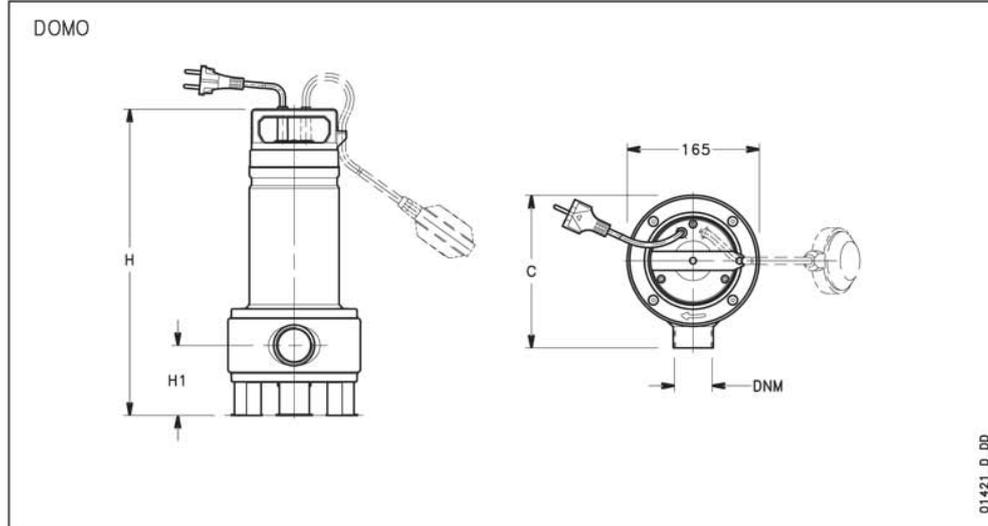
These performances are valid for liquids with density  $\rho = 1,0 \text{ kg/dm}^3$  and kinematic viscosity  $\nu = 1 \text{ mm}^2/\text{s}$ . domo-2p50-en\_b\_th

**ELECTRICAL DATA TABLE**

PUMP TYPE	ABSORBED POWER*		CAPACITOR	PUMP TYPE	ABSORBED POWER*		ABSORBED CURRENT*	ABSORBED CURRENT*
	220-240 V				220-240 V			
SINGLE-PHASE	kW	A	$\mu\text{F} / 450 \text{ V}$	THREE-PHASE	kW	A	A	
DOMO 7 - (S7)	0,8 (0,76)	3,94 (3,83)	16	DOMO 7T - (S7T)	0,73 (0,68)	2,58	1,49	
DOMO 10	1,14	5,84	22	DOMO 10T	1,09	4,09	2,36	
DOMO 15	1,58	7,02	30	DOMO 15T	1,49	4,73	2,73	
-	-	-	-	DOMO 20T	1,96	6,6	3,81	

\*Maximum values within operating range domo-2p50-en\_b\_te

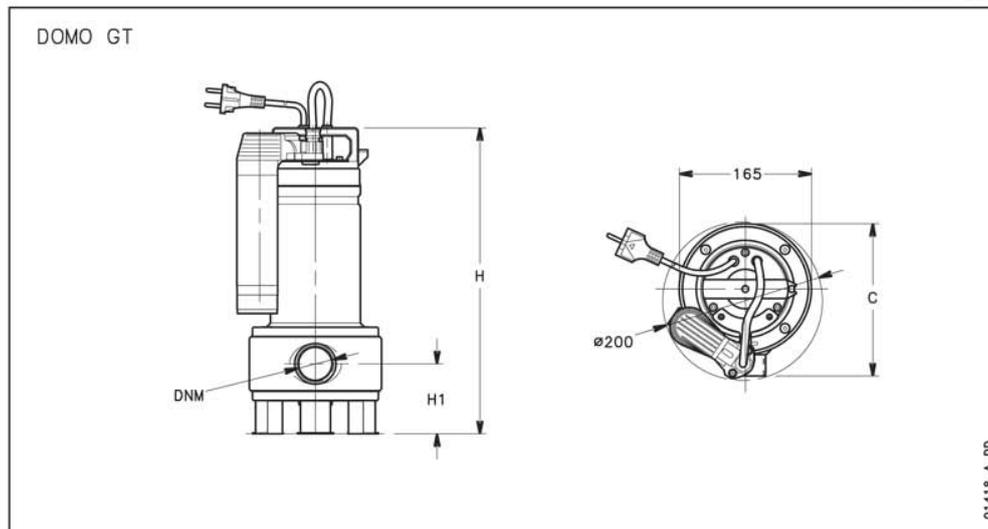
**DOMO SERIES  
 DIMENSIONS AND WEIGHTS**



PUMP TYPE		DIMENSIONS (mm)			DNM	WEIGHT kg
SINGLE-PHASE		H	H1	C		
DOMO 7	DOMO 7 GT	391	88	193	Rp1½	10,2
DOMO 7VX	DOMO 7VX GT					
DOMO10	DOMO10 GT	468	111,5	198	Rp2	13,6
DOMO10VX	DOMO10VX GT					
DOMO15	DOMO15 GT	468	111,5	198	Rp2	15,3
DOMO15VX	DOMO15VX GT					
-	-	-	-	-	-	-

PUMP TYPE		DIMENSIONS (mm)			DNM	WEIGHT kg
THREE-PHASE		H	H1	C		
DOMO 7T	DOMO 7VXT	391	88	193	Rp1½	8,9
DOMO10T	DOMO10VXT	438	111,5	198	Rp2	11,6
DOMO15T	DOMO15VXT	468	111,5	198	Rp2	13,6
DOMO20T	DOMO20VXT	468	111,5	198	Rp2	14,6

domo-2p50-en\_c\_td



**Tricel Novo: Wastewater Treatment System**  
**Service Agreement**

Establishing a regime of yearly inspections and maintenance is advised to ensure that your Tricel Novo continues to perform to the same high standards throughout its lifetime. The service agreement covers travel, the service and the labour cost of servicing only. Other labour costs are excluded, as are all replacement parts.

Tricel (Killarney) Unlimited Company, Ballyspillane Industrial Estate, Killarney, Co. Kerry, V93 X253, Ireland ("the Company") enter this Tricel Novo service agreement with the Customer named below:

<b>Customer Details:</b>			
<b>Name:</b>			
<b>Address:</b>		<b>Address of Site: (If other)</b>	
<b>Telephone No.:</b>			
<b>Date of Tricel Novo Order:</b>			
<b>Work Order No.:</b>			
<b>Date of Delivery of Tricel Novo:</b>			
<b>Date of System Commissioning:</b>			
<b>Service Agreement Fee Paid:</b>			
<b>Date of Service Agreement Commencement:</b>			
<b>Unit Serial No.:</b>			

**During routine servicing, the service technician will perform a series of checks and procedures:**

**Checks:**

- The air-diffuser is monitored to check for sufficient dispersion of air.
- The sludge return system is functioning correctly.
- The covers and locks are in place and in good condition.
- General appearance and condition of the treatment system is good.

**Procedures:**

- The blower is tested.
- The blower filter is replaced.
- The system alarm is tested.
- The pump and float-switch are tested (If applicable).
- The vents are cleared of any blockages.
- The sludge level in the primary chamber is measured.

**Notes:**

- Full inspection labour is covered (including any immediate minor system adjustment required). This service agreement does not cover the cost of any labour or materials that may arise as a result of this inspection.
- Components that require replacing will incur additional charges.
- All service agreements exclude de-sludging.

Tricel (Killarney) Unlimited Company trading as Tricel.

March 2017

**Service Agreement Options:**

TICK THE SERVICE AGREEMENT OPTION YOU WISH TO AVAIL OF: (Please tick one option only)	
Single Service: One standard scheduled visit to service the system	<input type="checkbox"/>
Single service & one emergency breakdown service *: One standard scheduled visit to service the system & one emergency breakdown visit if required	<input type="checkbox"/>
Three-year service: One scheduled visit to service the system per year, for 3 years.	<input type="checkbox"/>
Five-year service: One scheduled visit to service the system per year, for 5 years.	<input type="checkbox"/>

\* Unused emergency breakdown cover fees cannot be refunded if a breakdown does not materialise.

**Note:** In cases in which multiple service agreements have been purchased by a customer for individual components of a complete wastewater treatment plant, i.e. a Tricel Novo, Tricel Puraflo or Sandcel - a discount will apply.

**This contract is subject to terms & conditions. For Terms & Conditions, please contact Tricel:**

Tricel (Killarney) Unlimited Company, Ballyspillane Industrial Estate, Killarney, Co. Kerry, V93 X253, Ireland.  
Tel: +353 (0)64 6632421 Fax: +353 (0)64 6632777  
Email: [sales@tricel.ie](mailto:sales@tricel.ie) | Web: [www.tricel.ie](http://www.tricel.ie)

This service agreement relates only to the Tricel Novo, manufactured by Tricel, its subsidiaries and associated companies, and is between the company, or person named in this document, & Tricel.

By signing the declaration below, I hereby acknowledge that I, the Customer, have read, understand and agree to the information in the Novo Technical Manual, this service agreement and also the relevant terms & conditions.

<i>Tricel agrees to provide the services listed on this service agreement subject to the terms and conditions:</i>	<i>Please supply the services listed on this service agreement subject to the terms and conditions:</i>
<i>Signed on behalf of the Company:</i>	<i>Signed by the Customer:</i>
Name (Block Capitals):	Name (Block Capitals):
Signature:	Signature:
Date:	Date:

**Important:** Original signed service agreements must be returned to Tricel with payment in full and in advance, in order for the service agreements to be initiated. You are reminded of your obligations to the relevant County Council.

Tricel (Killarney) Unlimited Company trading as Tricel.

March 2017

## Section 2

The design and construction of the polishing filter is the responsibility of the site engineer. A full site layout drawing should accompany this report.

The EPA CoP 2009 outlines the design, siting and construction requirements for polishing filters.

The tables below outline some of the key factors to take into consideration when designing and locating a polishing filter.

**TABLE 6.1. MINIMUM SEPARATION DISTANCES IN METRES.**

	Septic tank, intermittent filters, packaged systems, percolation area, polishing filters (m)
Wells <sup>1</sup>	–
Surface water soakaway <sup>2</sup>	5
Watercourse/stream <sup>3</sup>	10
Open drain	10
Heritage features, NHA/SAC <sup>3</sup>	–
Lake or foreshore	50
Any dwelling house	7 septic tank 10 percolation area
Site boundary	3
Trees <sup>4</sup>	3
Road	4
Slope break/cuts	4

<sup>1</sup>See Annex B: Groundwater Protection Response.

<sup>2</sup>The soakaway for surface water drainage should be located down gradient of the percolation area or polishing filter and also ensure that this distance is maintained from neighbouring storm water disposal areas or soakaways.

<sup>3</sup>The distances required are dependent on the importance of the feature. Therefore, advice should be sought from the local authority environment and planning sections (conservation officer and heritage officer) and/or from the Department of the Environment, Heritage and Local Government (DoEHLG), specifically the Archive Unit of the National Monuments Section and the National Parks and Wildlife Service. If considering discharging to a watercourse that drains to an NHA/SAC the relevant legislation is Article 63 of the Habitats Directive. (NHA, National Heritage Area; SAC, Special area of Conservation.)

<sup>4</sup>Tree roots may lead to the generation of preferential flow paths. The canopy spread indicates potential root coverage.

Table 6.1 EPA CoP 2009- Minimum separation distances

**TABLE 10.1. MINIMUM SOIL POLISHING FILTER AREAS AND PERCOLATION TRENCH LENGTHS REQUIRED FOR A FIVE-PERSON HOUSE.**

P/T-values <sup>1</sup>	Direct and pumped discharge (Options 1 and 2)		Percolation trench discharge (500 mm wide) (Option 3)	
	Loading rate on plan area (l/m <sup>2</sup> /day)	Area required for five persons (m <sup>2</sup> )	Loading rate on trench area (l/m <sup>2</sup> /day)	Trench length required for five persons (m)
3–20	≤20	≥37.5	≤50	≥30
21–40	≤10	≥75	≤25	≥60
41–50	≤5	≥150	≤25	≥60
51–75	≤3	≥250	≤16	≥94

<sup>1</sup>The loading rate is dependent on the percolation rate and in the case of an imported mound then the higher of the P-value of the *in-situ* subsoil and of the imported material should be used to size the polishing filter.

Table 10.1 from EPA CoP 2009 - Loading rates for gravity fed soil polishing filter



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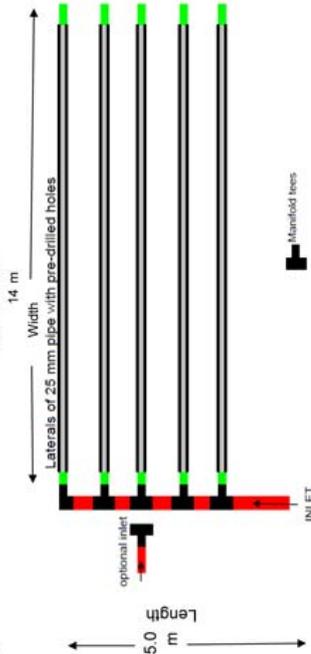
**PART B - Used in conjunction with Part A of Tricel site specific report.  
 Proposed Pressurized Filter Design Details**

<b>Project:</b>	Tricel site specific report
<b>Ref:</b>	90 m2 centre feed (6mx15m) 6 pe
<b>Contact:</b>	Joe Walsh
<b>Tel:</b>	+353 (0)404 66433
<b>email:</b>	joe.walsh@ash.ie

**Important.** No account is taken of site elevation, contours or pump details unless requested. The information provided here is to assist the system designer and is based on the US EPA Design Manual 2002. Detailed site specific designs are required by the Irish EPA Code of Practice 2009 in section 10.1.1 option 2 - Pumped Discharge. Please see our installation guidelines before installation.

**Pressure Pipe Network for Sand/Soil Polishing Filter - Single Sided Manifold Layout**

	L	W	Area
Dimensions of area	6	15	90.0 sq metres
Design flow	PE	6	900 litres/day
Infiltration rate (Litres/M2)			10.0 litres/m2
Manifold pipe diameter			40 mm
Length of manifold sections -pre-cut	4	X	1.25 m
Lateral pipe diameter			25 mm
Separation distance between laterals			1.25 m
No of Lateral pipe lengths			5 no.
Length of Laterals with pre-drilled holes			14 m
Diameter of pre-drilled holes			4 mm
Pump minimum flow rate at site total dynamic head TDH			120 litres/min
Minimum dose volume			159 litres
System head (excluding site elevation head and friction loss in rising main)			3 m



**What is included:**  
 Pipes and fittings are PVC 10 BAR pressure rated pipe which conforms to Irish and EU standard I.S. EN 1452-2 for the Transportation of Potable Water under Pressure. Pump and pump tank specifications are specific to this design to allow even distribution throughout the pipe network and avoid overloaded areas of the filter.

Site specific design with pump requirement and minimum dose volume for effective operation  
 10 bar PVC Manifold pipe to the design length and cut into multiple section lengths equal to the separation distance between laterals  
 10 bar PVC manifold fittings customised to the relevant system design comprising tees, elbows and 4 way flow through crosses and 0.5 m inlet section  
 10 bar PVC Lateral pipe to the design length in 5.65 m sections and cut in two for easy transporting with flared ends or pipe couplers for easy connection of sections.  
 Holes will be pre-drilled in the lateral pipes to custom fit the relevant system design in diameter and spacing  
 10 bar PVC Lateral pipe fittings customised to the relevant system design comprising reducers, couplers, elbows, shut-off ball valves, valve connection lengths and valve access boxes  
 Valves housed in valve boxes are supplied for the head and/or ends of each lateral pipe to provide for future maintenance and flow control.

**What is not included as standard:**  
 Pump, pump tank, rising main pipe from pump tank to pressure system inlet, connections from pump to pressure system inlet manifold pipe and electrical supply cables and electrical connections  
 Installation of the pipe network (available on request).  
 Certification of pressurisation of the pipe network and suitability of pump and pump dosing regime (available on request).  
 Orifice shields to prevent holes from blockage by stone backfill  
 Pressure filter in irrigation box housing  
 Electrical connections

**Please call Ash Environmental at 0404 66433 for assistance.**

Contact: Joe Walsh  
 Tel: +353 (0)404 66433  
 email: joe.walsh@ash.ie

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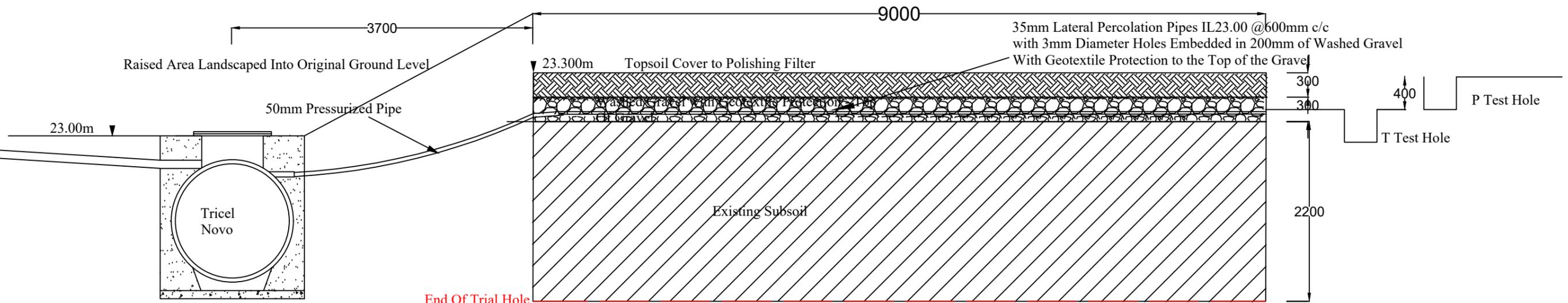
For further information in relation to percolation area design please refer to the EPA Code of Practice:  
Wastewater Treatment and Disposal Systems Serving Single Houses (p.e. ≤ 10)

**Terms and conditions:**

*Tricel cannot accept responsibility for incorrect site details or calculations as these are based on user inputs which are outside of Tricel control.*

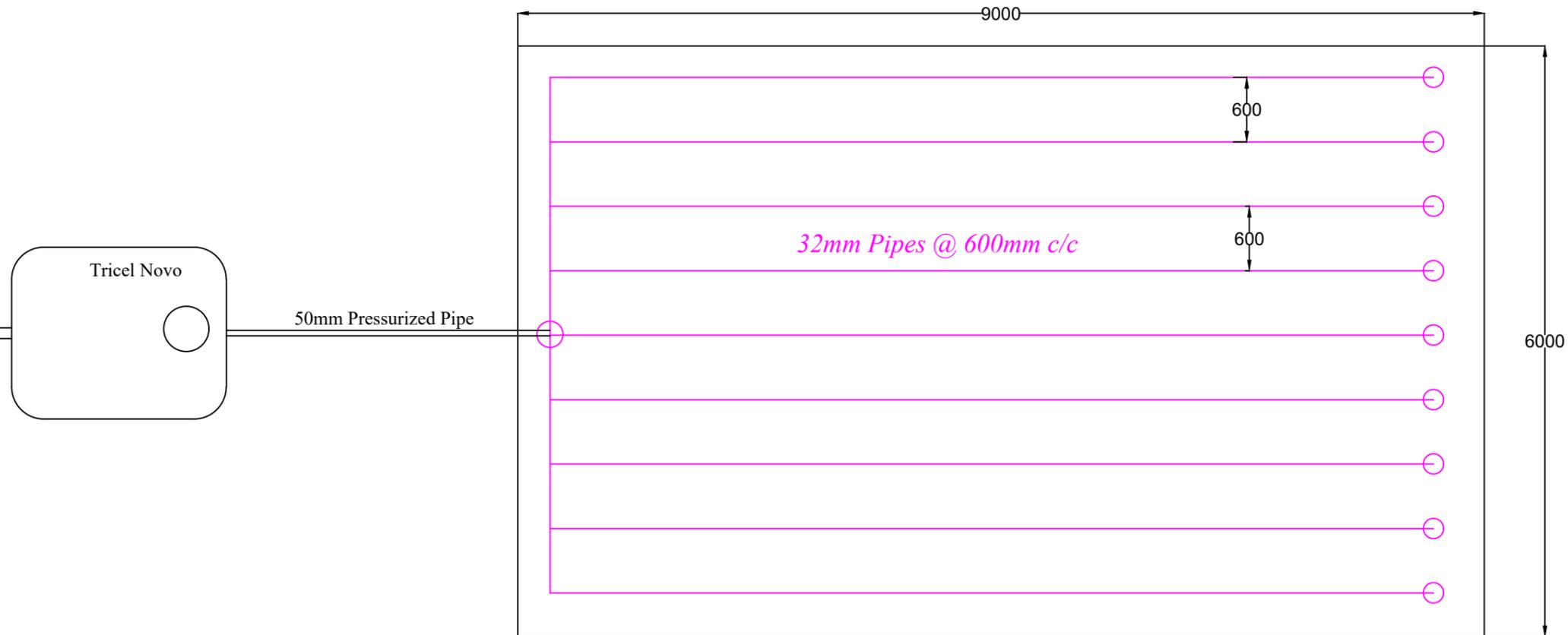
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*NOTE: DRAWINGS ARE FOR PLANNING PURPOSES ONLY AND ARE NOT INTENDED FOR CONSTRUCTION.*



*Longitudinal Section Through Treatment System.*

SCALE 1:100



*Polishing Filter Plan.*

SCALE 1:100

**Notes:**  
 This drawing and any design hereon is copyright and must not be reproduced without written consent.  
 DO NOT SCALE from drawing use figured dimensions only  
 All dimensions to be checked on site and any discrepancies reported immediately to the engineer before work proceeds.  
 All Dimensions in mm unless stated.

**O'MCE**  
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Revisions		
Date	Discription	NO.

PROJECT TITLE: New treatment unit at Emlaghmore, Ballyconneely, Co. Galway.
DRAWING TITLE: Proposed Treatment Unit Sections

CLIENTS: Mr. Patrick Ridge		
DATE: 10th March 2020	DRAWN BY: EOM	
SCALE: As Shown (@A3)		
PROJECT NO: 1475	DRAWING NO: PP-11	REVISION NO: R2