Appendix 4I

Wastewater Holding Tank Calculations

	MWP	JOB NAME: Balinlee Wind Farm		PAGE No: 1
		SECTION: Standard Information		
		JOB No: 22635	DESIGNED: GJ	
		DATE: 03/06/2025	CHECKED: CMcL	

Ref:		Output

Greensource

Client:	Ballinlee Green Energy Project
Project Name:	Ballinlee Wind Farm
Project Location:	County Limerick

ITM Co-ordinates:

Easting:	559846.33
Northing:	635105.39

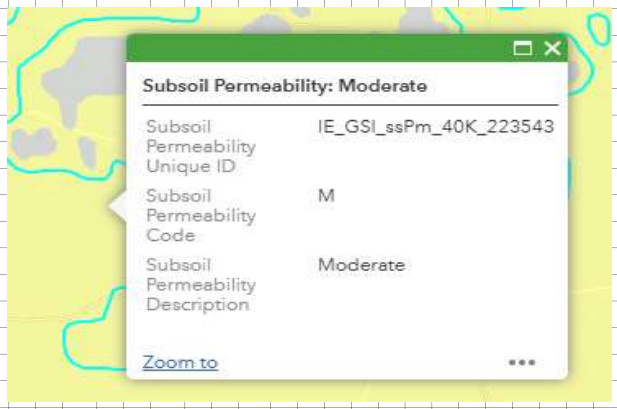
Irish Grid Co-ordinates:

Easting:	159887.19
Northing:	135056.93

Latitude:	52	deg	27	min	52.28087	
Longitude:	-8	deg	35	min	27.34041	

MWP

SAAR:	981	mm	Average Annual Rainfall model Ireland.dwg
			..\..\..\..\06 - Records Incoming\Incoming Public Services\Met Eierann
SOIL:	2	Type	FSR - Fig I 4_18 (1) [Soil] [ITM].dwg
SPR:	0.3		
GCF 1:	0.85		IH124 Hydrological Region 13
GCF 30:	1.65		GDSDS/GDR
GCF 100	1.95		



MWP	JOB NAME: Balinlee Wind Farm		PAGE No: 2
	SECTION: Met Eireann Data		
	JOB No: 22635	DESIGNED: GJ	
	DATE: 03/06/2025	CHECKED: CMcL	

Ref:

TANK LOADING

Typical Hydraulic Load:	50.0	L / PE / Day	Non-Domestic
Typical Predicted Occupancy:	5.0	PE	
Typical Daily Load:	250.0	L / Day	

Output

Typical Daily Load: 250 L / Day

TANK DIMENSIONS

Rectangular			*Circular*		
Length:	3.0	m	Diameter:	3.4	m
Width:	3.0	m			m
Depth:	2.0	m	Depth:	2.0	m
Plan Area:	9.0	m^2	Plan Area:	9.1	m^2
Volume:	18.0	m^3	Volume:	18.2	m^3
Freeboard:	0.1	m	Freeboard:	0.1	m
Associated Reduction:	0.9	m^3	Associated Reduction:	0.9	m^3
Effective Volume:	17.1	m^3	***Effective Volume:***	17.3	m^3

Tank Volume: 17.1 m^3

STORAGE DURATION

Total Storage Duration:	68.4	Working Days
Total Storage Duration:	13.7	Working Weeks

Weeks Storage: 13.7 Weeks

CALCULATION CONCLUSION

Using a rectangular 3.0 x 3.0 x 2.0 m dimeson RC tank with a total capacity of 17.1 m^3

OR

Using a circular 3.4 diameter x 2.0 m dimeson RC tank with a total capacity of 17.3 m^3

Whereby the tank has an expected emptying cycle of 13.7 Working Weeks and the design is based on an assumption of 5.0 persons occupancy producing a hydraulic load of 50.0 L / PE / Day in a Non-Domestic setting

MWP	JOB NAME: Balinlee Wind Farm		PAGE No: 3
	SECTION: Treatment		
	JOB No: 22635	DESIGNED: GJ	
	DATE: 03/06/2025	CHECKED: CMcL	

Ref:				Output
BOUYANCY CHECK				
Densities:				
Soil:		16	kN/m³	
Water:		9.8	kN/m³	
Concrete:		25	kN/m³	
Tank Details:				
Area of Tank:		9	m²	
Concrete Slab Thickness		0.3	m	
Soil Above Tank		0	m	
Weight of Tank				
	Top & Bottom Slabs	135	kN	
	Soil Above Tank	0	kN	
	Tank Walls	234	kN	
			kN	
		369	kN	**Buoyancy Check:**
				Passes
Buoyancy:				
Depth to Bottom of Tank:		2.6	m	
Upwards Pressure on Tank:			kN	
	Water Removed	168	kN	
			kN	
			kN	
Conclusion of Calculation:		**Passes**		