



Nutrient Neutrality Statement

S23-902/NNS/S
October 2023

Prepared by:

Bespoke environmental and drainage solutions

Site location:

Old Allotment Site
Newells Lane
West Ashling
PO18 8DD

Bespoke Environmental and Drainage Solutions have been commissioned to produce a Nutrient Neutrality statement for the proposed development.

The site comprises of a parcel of land amounting to approximately 0.1HA

From 2001 the site was used as an allotment, and prior was mixed use/ grazing land.

Generally speaking the use of land as an allotment has moderate nitrogen output due to the use of modern fertilisers and the use of manure as a fertiliser.

Grazing also has a moderate nitrogen output as the waste from cattle and horses directly effects the nitrogen load.

The proposal is for the use of the land for the stationing of a caravan for residential purposes, together with the formation of hardstanding.

This would include the stationing of a single mobile touring caravan.

The proposed development will result in a net increase in dwellings within the catchment of Chichester and Langstone harbours special protection area (SPA), and the Pagham harbours SPA.

As the designated site is in “unfavourable” condition any increase, including single dwellings, is seen as significant, either alone or in combination with other developments.

This report should be used to guide the outcome of a Habitats regulation assessment

The receptor location has been identified as Chichester and Langstone harbours special protection area

The substance of concern is nitrates (N_{tot}).

A mitigative response to nitrates (nitrogen) arising from the proposed development is proposed within this report.

The 1no pitch will contain 1no dwelling in total, in the case of this site the dwelling will be a mobile home. Based on the occupancy rate of 2.4 persons per dwelling a development water use of 288 L/day is expected, at a concentration using the proposed treatment plant of 10mg/L.

Mitigation

In order for the development to demonstrate neutrality it must be shown to produce no greater load than existing in order to be nitrogen neutral.

It is proposed to use an adequately sized package treatment plant as specified below in Appendix 2.

The treatment plant is designed to remove suspended solids and to provide primary treatment prior to the secondary treatment stage in the filter media. It also removes 88.6% of nitrogen. The following model would be acceptable based on national occupancy:

Land use change from an allotment/ mixed use/ grazing land, to a site with a green space and proposed planting of trees around the boundary will result in a reduction in nitrogen loading that will more than account for additional nitrate load from the proposed development.

Budget calculations

Stage 1

User Inputs

Date of first occupancy:	01/01/2024	
Average occupancy rate:	2.40	
Water usage (litres/person/day):	120	
Development Proposal (dwellings/units):	1	
Include deductible acceptable loading?	No	
Wastewater treatment works:	Package Treatment Plant user defined	
Wastewater treatment works N permit (mg TN/litre):	Please enter value in cell to the right:	10

Stage 1 Calculated Loading

Additional population	2.4	people
Wastewater by development	288	litres/day
Annual wastewater TN load	0.84	kg TN/yr

Stage 2

User Inputs

Catchment:	Western Streams
Soil drainage type:	Naturally wet
Annual average rainfall (mm):	675.1 - 700
Within Nitrate Vulnerable Zone (NVZ):	Yes

Existing land use type(s)	Area (ha)	Annual nitrogen nutrient export (kg TN)
Mixed	0.10	2.16
Total:	0.1	2.16

In the absence of real world data, this figure has been generated using the most relevant average nutrient reduction coefficient.

Stage 3

User Inputs

New land use type(s)	Area (ha)	Annual nitrogen nutrient export (kg TN)
Residential urban land	0.10	1.28
Total:	0.1	1.28

Stage 4

Calculated Outputs

The total annual nitrogen load to mitigate is:

0 kg TN/year

Conclusion

The proposal as described above will result in a nitrogen neutral development.

Appendix 1- site plans



Appendix 2- certification



OM0012 Solido SMART OM Rev 6 16.10.2017

10.5 Declaration of performance according to the Construction Products Regulation (BauPVO)

Declaration of performance according to the Construction Products Regulation (BauPVO) No. DOKK5452 040516				
1 Identification code	KSTAxxxx for Solido SMART fully biological small wastewater treatment plants in PE containers			
2 Item numbers	KSTAxxxx: -2600, -3000, -4500, -3100, -3500, -5000, -5200, -7600, -9900			
3 Purpose of use	Packaged wastewater treatment plant for treating domestic wastewater			
4 Manufacturer	PREMIER TECH AQUA GmbH, Bei der neuen Münze 11, 22145 Hamburg, Germany			
5 Authorised representative	Marco Rumberg CEO, rumm@premiertech.com			
6 System for evaluation	3			
7 Harmonised standards	EN 12566-3:2005+A1:2009+A2:2013		First year of CE declaration: 2016	
8 Notified bodies	PIA GmbH (NB 1739) has performed the initial testing in conformity system 3 and created test reports.			
Main characteristic	Efficiency			
Treatment capacity				
Level of purification efficiency	COC		95.1%	39 mg/l
As per EN 12566-3, Annex B	BOD ₅		98.5%	5 mg/l
	SS		97.1%	13 mg/l
* KSTA2600 was checked at 0.30 kg BOD ₅ /d and 0.90 m ³ /d	NH ₄ -N		98.0%	0.7 mg/l
	N _{tot}		83.1%	10 mg/l
	P _{tot}		68.5%	2.3 mg/l
Solido SMART	- Nominal daily organic load (kg BOD ₅ /day):	- Nominal daily hydraulic load [m ³ /day]:	Power consumption [kWh/day]	Stability (installation depth 1.00 m)
KSTA2600 (actually tested)*	0.30	0.90*	0.81	WET 0.70 m
KSTA3000	0.36	0.90	0.85	WET 0.70 m
KSTA4500	0.54	1.35	1.22	WET 0.85 m
KSTA3100	0.36	0.90	0.83	WET 1.40 m
KSTA3500	0.42	1.05	0.95	WET 1.40 m
KSTA5000	0.60	1.50	1.32	WET 1.40 m
KSTA5200	0.72	1.80	1.62	WET 1.00 m
KSTA7600	1.08	2.70	2.43	WET 1.20 m
KSTA9900	1.50	3.75	3.29	WET 1.20 m
Water resistance (test with water):	Passed			
Stability (pit inspection)	Passed (WET conditions)			
Durability	Passed			
Reaction to fire	E			
Release of harmful substances	NPD			

The manufacturer alone is responsible for the issue of the declaration of performance as per number 4.

This declaration confirms compliance with the named directives and standards. However, it does not guarantee for any properties of the product. All of the provided safety instructions and instructions for installation, operation, and maintenance of the small wastewater treatment plants must be followed.

Signed for the manufacturer and on behalf of the manufacturer by:

Hamburg, 04 May 2016