WATER NEUTRALITY STATEMENT FOR ROCK COMMON, NEAR WASHINGTON, WEST SUSSEX

Reference: 20220805

H2Ogeo Reference: 20220401P1

Date: 6 March 2023

Version: Final v1.4

Author	*Date*	*Version*	*Issued*
David Walker	16/09/2022	1.0	16/09/2022
David Walker	17/02/2023	1.1	17/02/2023
David Walker	24/02/2023	1.2	24/02/2023
David Walker	2 March 2023	1.3	02/03/2023
David Walker	6 March 2023	1.4	06/03/2023

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Contents

Executive Summary

A planning application was submitted to West Sussex County Council, 14 July 2021, for the *continued winning, working and processing of sand from the existing Rock Common Quarry, the importation of inert classified engineering and restoration material, the stockpiling and treating of the imported material, the placement of the imported material within the quarry void and the restoration and landscaping of the quarry.*

Since the original submission, the requirement for a Water Neutrality Statement has been introduced to the area.

Water Neutrality Statements are required as Natural England cannot, with certainty, conclude that the Sussex North Water Supply Zone (WSZ), that includes supplies from a groundwater abstraction, is not having an adverse effect on the integrity of:

- Arun Valley Special Area Conservation (SAC);
- Arun Valley Special Protection Area (SPA); and
- Arun Valley Ramsar Site.

The Hardham groundwater abstraction provides Southern Water's Sussex North WSZ. As it cannot be concluded that the existing abstraction at Hardham is not having an impact on the Arun Valley site, Natural England have advised that developments within the Sussex North WSZ must not add to this impact.

This Water Neutrality Statement replaces, in full, the previously submitted Water Neutrality Statement (Water Neutrality Statement, H2Ogeo, 16 September 2022, FINAL v1.0) and is provided to accompany the planning application to demonstrate that the proposed development does not increase the requirements for mains water above existing levels within the supply zone.

Following assessment the proposed development's water consumption will be lower than the existing baseline consumption.

In addition:

- All the fittings in the proposed development will be new and low flow using dual flush technology;
- Groundwater will be used to flush toilets and provide fresh water to the wheel wash. Rock Common currently operates a dewatering system that is licensed to abstract 6000m^3/day to safely win and work the sands that has a deficit of c2000m^3/day. The Site has been actively dewatered since at least 1986 and the abstraction is required not only to secure a dry and safe working platform but to prevent pollution of Controlled Waters; and
- Rainwater harvesting would be utilised to augment water required for landscaping.

Based on the findings of this Water Neutrality Statement the proposed development will not contribute to an existing adverse effect upon the integrity of the internationally designated Arun Valley Special Area of Conservation, Special Protection Area and Ramsar sites by way of increased water abstraction.

1 Introduction

1.1 Background

A planning application was submitted to West Sussex County Council, 14 July 2021, for the *continued winning, working and processing of sand from the existing Rock Common Quarry, the importation of inert classified engineering and restoration material, the stockpiling and treating of the imported material, the placement of the imported material within the quarry void and the restoration and landscaping of the quarry.*

Since the original submission, the requirement for a Water Neutrality Statement has been introduced to the area.

Water Neutrality Statements are required as Natural England cannot, with certainty, conclude that the Sussex North Water Supply Zone (WSZ), that includes supplies from a groundwater abstraction, is not having an adverse effect on the integrity of:

- Arun Valley Special Area Conservation (SAC);
- Arun Valley Special Protection Area (SPA); and
- Arun Valley Ramsar Site.

As it cannot be concluded that the existing abstraction is not having an impact on the Arun Valley site, Natural England have advised that developments within the Sussex North WSZ must not add to this impact.

Rock Common Quarry has been active since the 1920's and has been the subject of many planning permissions granted for sand extraction since the 1950's. The Quarry is currently working in accordance with a permission granted on 16 September 2004 (Ref WS/15/97) which was an application submitted by the then operator, Tarmac Limited, under the provisions of Environment Act 1995 requiring the review of "old mining permissions".

This application is being made firstly, to enable the recovery of the remaining reserves of sand and secondly, to permit the importation and placement of suitable, inert classified engineering and restoration materials in order to change the approved restoration of the Quarry and create a "dry", restored landform.

The current approved restoration is to create a body of deep water within the final excavated void described as a landscaped lake with the associated quarry margins managed for amenity and nature conservation use. Whilst the creation of deep bodies of water in quarries was acceptable at the time that the restoration was approved, restoring (and creating) large bodies of deep, open water with steep underwater slopes is no longer considered to be "best practice", not least because they are a danger to the public. An additional issue with deep water is that it does not provide suitable conditions for the creation of a wide and variable range of ecological interest.

Significant environmental concerns with the approved scheme also exist, in relation to the pollution of Controlled Waters, through the cessation of dewatering at Rock Common. The restoration scheme is proposed to ensure that the quarry is restored to a safe, sustainable and ecologically varied landform.

This Water Neutrality Statement replaces, in full, the previously submitted Water Neutrality Statement (Water Neutrality Statement, H2Ogeo, 16 September 2022, FINAL v1.0) and is provided to

accompany the planning application to demonstrate that the proposed development does not increase the requirements for mains water above existing levels within the supply zone.

1.2 Scope of Work

The scope of work is to provide a Water Neutrality Statement to understand if the proposed development will contribute to an existing adverse effect upon the integrity of the internationally designated Arun Valley Special Area of Conservation, Special Protection Area and Ramsar sites by way of increased water abstraction.

2 The Site

2.1 Location

The Site is situated within the District of Horsham, West Sussex (NGR TQ12460 13520) approximately 350 metres to the north-east of the village of Washington. At its nearest point the boundary of the South Downs National Park lies approximately 50 metres to the south of the Site following the line of the A283 road.

The Site location is shown in Figure 1.

The A24 (Worthing to Dorking Road) runs within 100 metres of the western boundary. A narrow, unclassified road (which connects the A283 and A24 and known as "The Hollow") runs along the north-east boundary of the Quarry. Access to the site is via the Hollow road off the A24/A283.

2.2 Existing Site

The layout of the existing site is shown in Annex A.

The fixtures and fittings using mains water on site were confirmed during a site visit on 22 June 2022, they comprise:

- A toilet block consisting of two toilets, two urinals and one sink with separate hot and cold taps;
- One kitchen sink with a mixer tap in the workshop kitchen; and
- One outside tap used at the reception for drinking and washing down vehicles.

The washing plant and existing processing area uses groundwater abstracted from the pit, Rock Common is licensed to abstract 6000m^3/day for the purposes of dewatering and processing.

2.3 Proposed Development

The proposed development is for the continued winning, working and processing of sand from the existing Rock Common Quarry, the importation of inert classified engineering and restoration material, the stockpiling and treating of the imported material, the placement of the imported material within the quarry void and the restoration and landscaping of the quarry.

The areas under consideration for the purpose of this Water Neutrality Statement do not include the quarry area, as no mains water is consumed in this part of the site. The mains water consumption is currently restricted to the site office, welfare facilities and kitchen area.

The processing of sand and any recycling planned will continue to use extracted groundwater until completion of the proposed restoration.

In the proposed material reception area there will be:

- New staff welfare buildings comprising one kitchen sink with a mixer tap, 1x dishwasher, two male and one female dual-flush toilet;
- Two urinals;
- Four wash-hand basins; and
- A wheel-wash and general vehicle cleaning facility.

The existing reception area for the quarry will remain and will be decommissioned including the toilet blocks, reception building and workshop kitchen on completion of restoration.

There will be no public conveniences.

3 Baseline Calculations

3.1 Existing Consumption

This section estimates the existing mains water consumption at Rock Common. Mains water is only consumed in the site office, welfare facilities and staff kitchen. No processes use mains water on site as these are supplied by groundwater.

The site has a metred connection provided by Business Stream, part of Scottish Water and the bills received in 2022 are presented in Annex B.

The consumption on site is estimated on page two of each bill and those estimates are presented below in Table 1:

Table 1 Water Bill Summary

From	*To*	*Days*	*m3*	*L/Day*
11/03/2022	23/05/2022	73	6	82
23/05/2022	12/08/2022	81	0	0
12/08/2022	23/11/2022	103	7	68

The staff numbers on site vary based on activities therefore the BREEAM 2018 Wat 01 Water Consumption Calculator has been used to estimate the Litres/Day/Person consumption for Baseline Performance Levels fixtures. The results are reported below and presented in Annex C:

37.65 Litres/Day/Person

It should be noted that the area of the existing portacabin office results in a default occupancy of 3.774 people. The maximum number of Full Time Employees (FTEs) on site at present equals 5 (Annex D Eastern Site) therefore, 5 FTEs have been used to assess the daily mains water consumption on the existing site using the BREEAM calculations:

188.25 Litres/Day

By using the metred water estimates and the calculated BREEAM figures, the range of mains water consumption on site is reported to be between 68 and 188 Litres/Day.

3.2 Proposed Consumption

The total proposed mains water consumption will equal the existing consumption (Section 3.1) plus the new fixtures and fittings outlined below as part of the proposed development. The calculated additional mains water consumption using Baseline Performance Levels is summarised below and presented in Annex C, this includes:

- One kitchen mixer tap, one dishwasher, two male dual flush and one female dual-flush toilet each with a wash-hand basin; and
- Two urinals.

3.2.1 Calculated Baseline Performance Consumption

The Baseline Performance Levels (Table 41 Water efficient consumption levels by component type – BREEAM) have been assumed for the new fixtures and fittings equalling 39.15 Litres/Person/Day.

Annex D presents the organisational chart for the proposed site and shows 20 FTEs.

The mains water consumption for the proposed development is:

783 Litres/Day

As a conservative estimate, it has been assumed that there will be up to three visitors on site per day therefore, an additional 117.45 Litres/Day has been assumed equalling a total mains water consumption of 900.45 Litres/Day.

3.3 Water Consumption Summary

The calculated mains water consumption is 712 Litres/Day higher as a result of the proposed development using Baseline Performance Levels.

3.3.1 Calculated Performance Level 3 Consumption

By upgrading all fixtures and fittings on site to a Performance Level 3 (Annex C) the proposed mains water consumption will be reduced to:

18.69 Litres/Person/Day a total of 429.87 Litres/Day.

This is 241 Litres/Day higher than the existing maximum mains water consumption on site.

By using dual flush, low flow and water efficient fixtures and fittings the proposed consumption per person decreases by around 20 Litres/Day.

3.3.2 Wheel-Wash

In addition to the new facilities a wheel-wash is proposed and details are presented in Annex E.

The wheel wash is a Garic Enviro Wheel Wash with water filtration technology combined with a 100 percent water recirculation system. The wheel wash will be supplied with groundwater from the abstraction and therefore does not require assessment in this Water Neutrality Statement.

3.4 Water Reduction & Additional Mitigation

To mitigate the increase in FTEs on site and the resulting mains water consumption the following strategies are proposed:

- Upgrade old fixtures and fittings to at least Performance Level 3 (See Annex F);
- Ensure new fixtures and fittings meet or exceed Performance Level 3;
- Use groundwater as an alternative to mains water sources for toilet flushing, urinals and wheel wash.

By switching water supply to groundwater for all WCs and urinals and upgrading all fixtures and fittings on site to Performance Level 3 mains consumption on site (existing site and proposed development) would equal a maximum of 159 Litres/Day.

The mitigated consumption falls within the range of the existing mains water consumption (68 to 188 Litres/day) and presents a conservative estimate assuming 23 FTEs on site using facilities as modelled.

3.5 Groundwater Source

Rock Common currently operates a dewatering system that is licensed to abstract 6000m^3/day to safely win and work the sands, the Site has been actively dewatered since at least 1986. The groundwater abstraction is required not only to secure a dry and safe working platform but to prevent pollution of Controlled Waters.

Data presented in Figure 2 is the daily pumping volumes achieved on Site in 2018. Pump 1 ran for 257 days and Pump 2 for 278. The average combined daily pumping rate was 4033m^3/day (46.7 Litres/second) with Pump 2 averaging a slightly higher rate than Pump 1, 2590m^3 and 1440m^3 respectively.

There is a deficit between the licensed volume (6000m^3/day) and the actual (4033m^3/day) of 1967m^3.

It is proposed to use an insignificant portion (2m^3/Day Max) of this excess to provide groundwater to the toilets and wheel wash therefore mitigating any additional consumption from the site. The infrastructure is already on site and connecting the toilets, urinals and wheel wash will be part of the development.

Mitigation of increased mains water consumption will be achieved by changing the source of water supply to groundwater-fed for all WCs and urinals on site as well as the wheel-wash.

The table below identifies the proposed mains water and groundwater-fed and rainwater-fed processes and fixtures:

Table 2 Proposed Water-Supply Summary

Fixture/Fitting	***Mains Water***	***Groundwater***	***Rainwater Harvesting***
WC	X	✓	X
Urinals	X	✓	X
Wash-hand Basins	✓	X	X
Kitchen	✓	X	X
Landscape watering	X	✓	✓
Processing Water	X	✓	X

There is additional scope to use rainwater harvesting from the welfare facilities to augment irrigation water for landscaping, particularly in the summer months, when watering is increased. Mains water will not be used for landscaping purposes.

4 Conclusion

The existing mains water consumption on site ranges from 68 to 188 Litres/Day.

The proposed development will increase the number of welfare facilities along with an increase of staff from the current maximum of five FTEs to 20 FTEs with a conservative estimate of three daily visitors.

Using the Baseline Performance Levels for fixtures and fittings the calculated daily mains water consumption would rise to 900.45 Litres/Day under the proposed scheme. Mitigation of the additional consumption will be achieved through installing Performance Level 3 Fixtures and Fittings throughout and switching supply of WCs and urinals to groundwater.

Replacing fixtures and fittings in the existing and proposed development with ones that achieve Performance Level 3 and, changing the source to groundwater, reduces the mains consumption to 158.7 Litres/Day.

Table 3 Existing and Proposed Scenarios - Summary

Scenario	***L/P/D***	***FTE & Visitors***	***L/D***
Existing All fixtures/Fittings Mains Consumption	37.65	5	188.25
Proposed (Performance Level 3) Mains Consumption	6.9	23	158.7

Rainwater harvesting from the welfare roof space could also add mitigation for landscaping reducing the overall demand for mains water. There is approximately 30m^2 roof space and the Seasonal Annual Average Rainfall for the Adur W Branch at Hatterell Bridge between 1961 to 1990 was 793mm.

Potential Total Annual Volume of Rainwater = (SAAR[1] x Area)x0.8 = (0.793 x 30m^2)x0.8 = 19m^3/year. Assuming 5 Litres/day is required for an outside tap[2] the 35 day drought storage requirement equals 175 Litres plus 10% = 192.5 Litres. This could be stored on site in a 200 litre tank.

Due to the significant environmental and health and safety risks associated with the currently approved restoration scheme, the use of the existing groundwater abstraction (6000m^3/Day) and efficient fixtures and fittings to offset mains water consumption, is a legitimate approach to achieving water neutrality.

Based on the findings of this Water Neutrality Statement the proposed development will not contribute to an existing adverse effect upon the integrity of the internationally designated Arun Valley Special Area of Conservation, Special Protection Area and Ramsar sites by way of increased water abstraction.

[1] https://nrfa.ceh.ac.uk/data/station/spatial/41010
[2] Part G Water Calculator, Building Regulations

5 Figures

Figure 1 Site Location

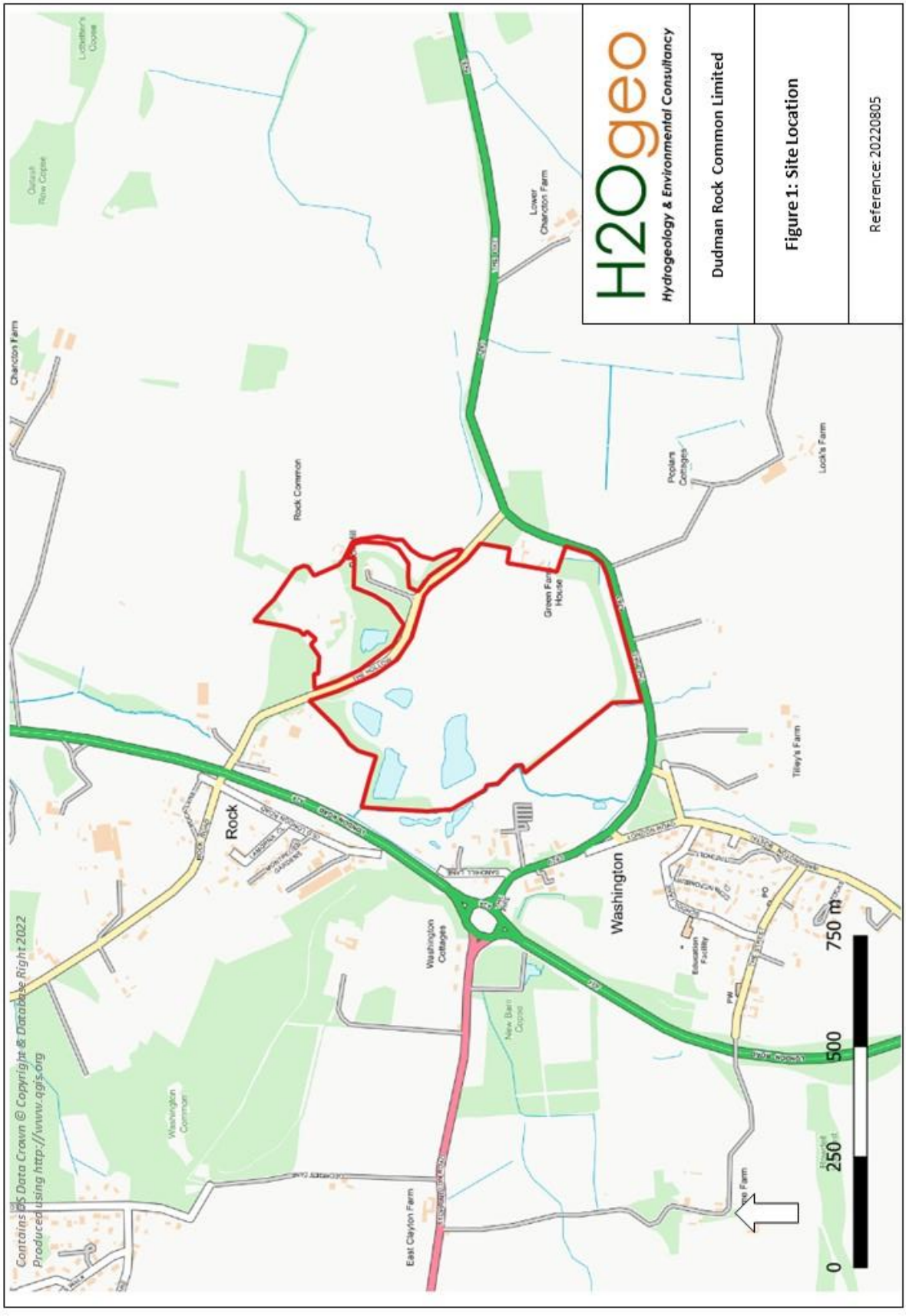
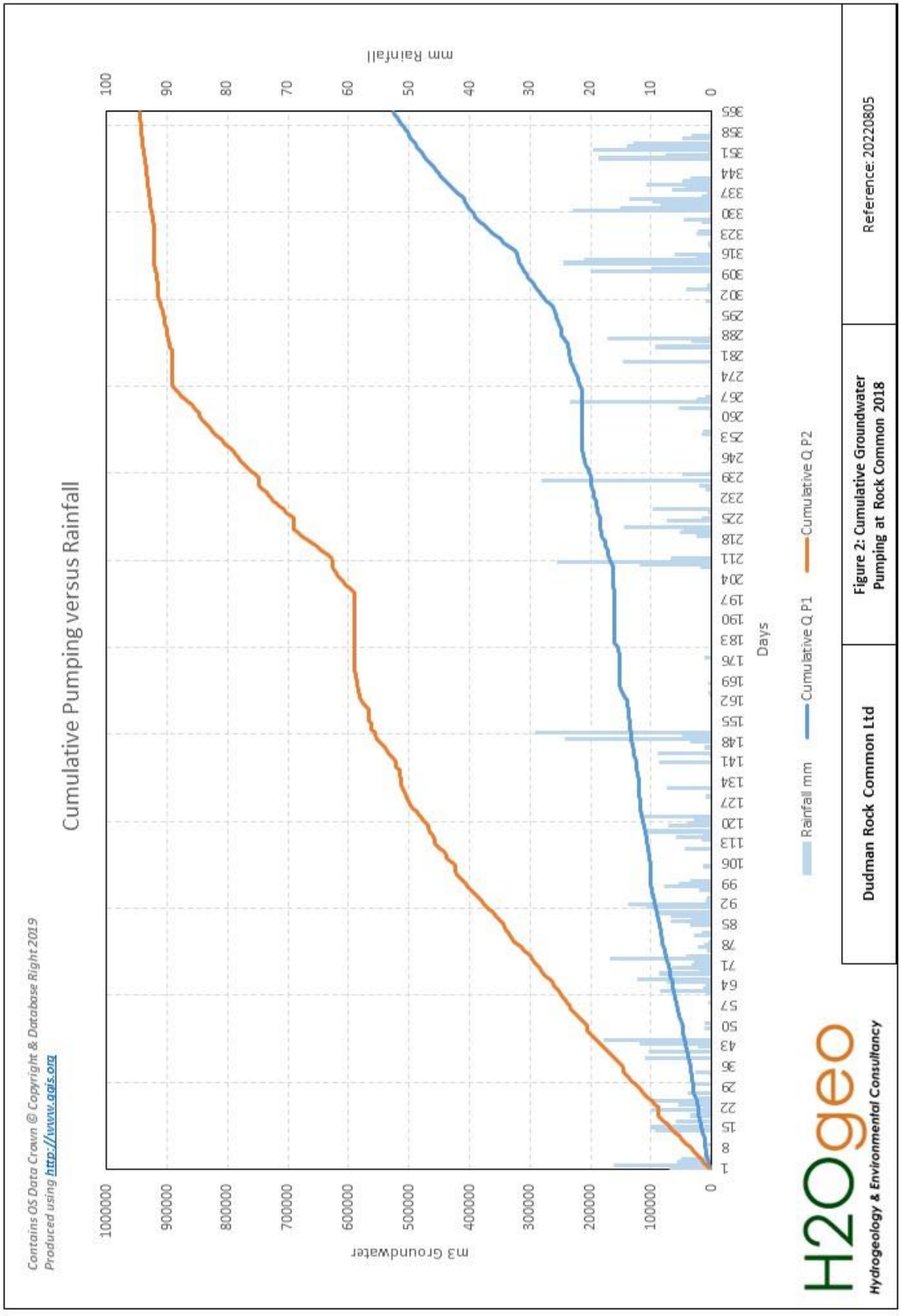


Figure 2 Daily Pumping Rates



6 Annexes

Annex A – Site Layout Drawing

Annex B – Water Bills

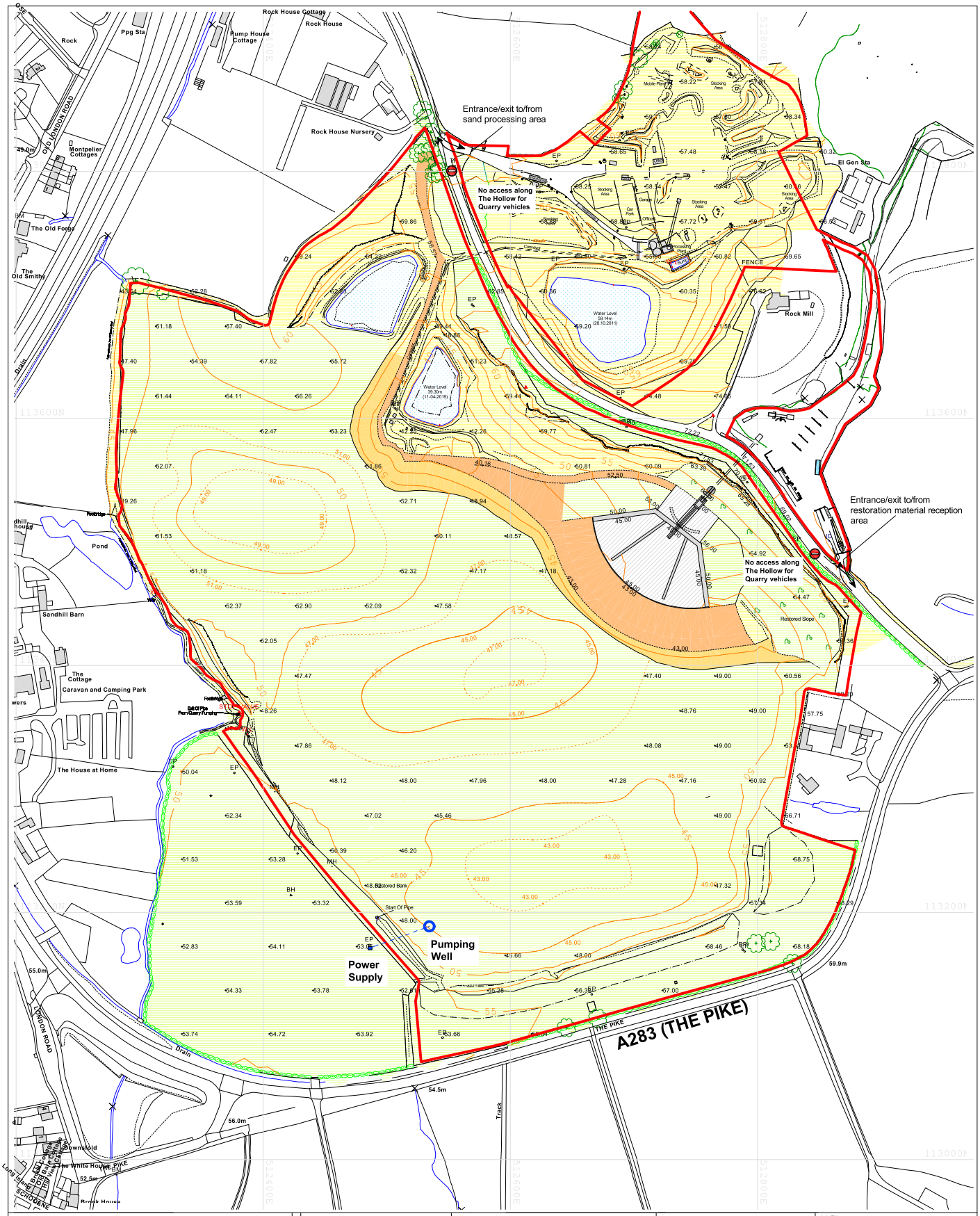
Annex C – BREEAM Calculations

Annex D – Organisation Chart

Annex E - Wheel Wash Specifications

Annex F – BREEAM Performance Levels

Annex A – Site Layout Drawing



Legend:

Application Area

SCALE BAR

0 50 100 200

N

REVISIONS			
	Date	Description	By
	//	//	//
	//	//	//
	//	//	//
	//	//	//

TERRESTRIA LIMITED

TERRESTRIA LIMITED
T/A MgM Consulting
6 Engine Mews,
Hampton-In-Arden,
Solihull
B92 0AZ

Mob - 07712779525
e-mail - mick@terrestria.co.uk

Client

DUDMAN ROCK COMMON LIMITED

Job Title: Rock Common Quarry

Project Title: Planning application to vary approved restoration

Scale	Date	Drawn by	Checked
1:2000	June 2021	SW	MM

Dwg. title: Phase 7 Restoring to final landform

DWG No. DRCL/RCRA/WP-10

Annex B – Water Bills

START_658

business stream
A SCOTTISH WATER COMPANY

business-stream.co.uk
0330 123 2000
If you have an emergency, please contact your:
Water wholesaler: Southern Water
Visit **business-stream.co.uk/wholesaler**

BSM-NEW | 000658 | Page 1 of 2 | BILLS | 000658

DUDMAN AGGREGATES LTD
84
ALBION STREET
SOUTHWICK
BN42 4DP

RECEIVED
27 MAY 2022

Customer reference / invoice no
2744438 / 22

Invoice / tax point date: 24 May 2022

Supply address: WASHINGTON QUARRY, THE HOLLOW, PULBOROUGH, RH20 3DA

Supply point ID: 3019371562W19

Our VAT number: 945 8508 85

Your water services invoice

11 March - 23 May 2022 (73 days, average £0.32 per day)

YOUR ACCOUNT SUMMARY

Your previous balance	£33.39	
Payments received	£33.39	CREDIT
Your balance brought forward	**£0.00**	

YOUR CHARGES THIS PERIOD (see page 2 for details)

Water services charges	£19.31
VAT	£3.87
Total charges this period	**£23.18**

We look forward to receiving your payment of £23.18

For ways to pay see page 3

221501

2022/23 charges

You can find more information on our charges and ways to save water and money on our website.

Visit business-stream.co.uk

Posted
27/5/22

How much water are you using?

If you'd like to reduce the volume of water you're using, check out our water saving tips on our website. You'll also be able to find advice on our website **business-stream.co.uk**

Estimated invoice

This invoice is based on an estimated read. If we receive an actual read, we will use it to calculate your next bill. You can submit your own readings, as long as it's safe to access your meter, on **business-stream.co.uk/meter-reading**. If your water is not provided by us, we will receive reads from your other supplier.

The water experts

14422L00_BSM-NEW | 000658 | Page 1 of 4 | BILLS
NNYNNN/400/MQC/SME/0/22

Your charges in detail

Based on this period your annual carbon consumption is **5.41 kgCO2e/yr**, based on National Government statistics.

Meter number / meter size: 13A10225 ARAD 25mm

Water charges			Units	Rate	VAT	Charge
Fixed water charge						
Yearly fee £49.15	11 Mar 22 - 31 Mar 22		21 days	0.134658	S	£2.83
Yearly fee £51.61	1 Apr 22 - 22 May 22		52 days	0.141397	S	£7.35
Volumetric water charge						
Estimated reading	23 May 22	429				
Estimated reading	11 Mar 22	423				
=Volume used this period			6.00 m³			
Charges	11 Mar 22 - 31 Mar 22		2.00 m³	1.476100	S	£2.95
Charges	1 Apr 22 - 23 May 22		4.00 m³	1.545000	S	£6.18
Total water charges						**£19.31**

A yearly fee for the upkeep of external pipes and pumps that supply water to your property.

The charge for the recorded amount of water you've used, measured by your meter.

Subtotal	**£19.31**
VAT at 20%	£3.87
Total charges this period	**£23.18**

VAT on our charges
Most of our services are zero-rated (Z) but some are standard rate (S) or outside scope (O).
See **business-stream.co.uk/vat** for more information.

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NNYNNN/400/MQC/SME/0/22

business stream
A SCOTTISH WATER COMPANY

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0330 123 2000
If you have an emergency, please contact your:
Water wholesaler: Southern Water
Visit **business-stream.co.uk/wholesaler**

BSM-NEW | 000860 | Page 1 of 2 | BILLS | 000860
DUDMAN AGGREGATES LTD
84
ALBION STREET
SOUTHWICK
BN42 4DP

RECEIVED
19 AUG '2022

Customer reference / invoice no
2744438 / 23

Invoice / tax point date: 16 August 2022

Supply address: WASHINGTON QUARRY, THE HOLLOW, PULBOROUGH, RH20 3DA

Supply point ID: 3019371562W19

Our VAT number: 945 8508 85

Page 1 of 4

Your water services invoice

23 May - 12 August 2022 (81 days, average £0.17 per day)

YOUR ACCOUNT SUMMARY

221501

Your previous balance	£23.18	
Payments received	£23.18	CREDIT
Your balance brought forward	**£0.00**	

YOUR CHARGES THIS PERIOD (see page 2 for details)

Water services charges	£11.45
VAT	£2.29
Total charges this period	**£13.74**

We look forward to receiving your payment of £13.74

For ways to pay see page 3

Posted
19/8/22

2022/23 charges

You can find more information on our charges and ways to save water and money on our website.

Visit business-stream.co.uk

How much water are you using?

If you'd like to reduce the volume of water you're using, check out our water saving tips on our website. You'll also be able to find advice on our website **business-stream.co.uk**

Actual meter read

This invoice is based on an actual read. To ensure the accuracy of future bills, you can submit your own readings, as long as it's safe to access your meter, on **business-stream.co.uk/meter-reading**. If your water is not provided by us, we will receive reads from your other supplier.

The water experts

Unless otherwise agreed, Scottish Water Business Stream Ltd provides services to you in accordance with our standard terms and conditions, a copy of which is available here: www.business-stream.co.uk/EnglandWalesTerms. Copies are also available on request. Through your continued receipt and acceptance of our services, you are deemed to have accepted our standard terms and conditions.

22822L00_BSM-NEW | 000860 | Page 1 of 4 | BILLS
NNYNNN/400/MQC/SME/0/22

Your charges in detail

Based on this period your annual carbon consumption is **0.00 kgCO2e/yr**, based on National Government statistics.

Meter number / meter size: 13A10225 ARAD 25mm

Water charges			Units	Rate	VAT	Charge
Fixed water charge						
Yearly fee £51.61	23 May 22 - 11 Aug 22		81 days	0.141397	S	£11.45
Volumetric water charge						
Actual reading	12 Aug 22	429				
Estimated reading	23 May 22	429				
=Volume used this period			0.00 m³			
Charges	23 May 22 - 12 Aug 22		0.00 m³	1.545000	S	£0.00
Total water charges						**£11.45**

A yearly fee for the upkeep of external pipes and pumps that supply water to your property.

The charge for the recorded amount of water you've used, measured by your meter.

Subtotal	**£11.45**
VAT at 20%	£2.29
Total charges this period	**£13.74**

VAT on our charges
Most of our services are zero-rated (Z) but some are standard rate (S) or outside scope (O).
See **business-stream.co.uk/vat** for more information

22822L00_BSM-NEW | 000860 | Page 2 of 4 | BILLS
NNYNNN/400/MQC/SME/0/22

START_481

business stream
A SCOTTISH WATER COMPANY

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0330 123 2000
If you have an emergency, please contact your:
Water wholesaler: Southern Water
Visit **business-stream.co.uk/wholesaler**

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DUDMAN AGGREGATES LTD
84
ALBION STREET
SOUTHWICK
BN42 4DP

RECEIVED
28 NOV 2022

Customer reference / invoice no
2744438 / 24

Invoice / tax point date: 24 November 2022

Supply address: WASHINGTON QUARRY, THE HOLLOW, PULBOROUGH, RH20 3DA

Supply point ID: 3019371562W19

Our VAT number: 945 8508 85

Page 1 of 4

Your water services invoice

12 August - 23 November 2022 (103 days, average £0.30 per day)

YOUR ACCOUNT SUMMARY

22 SC1

Your previous balance	£13.74	
Payments received	£13.74	CREDIT
Your balance brought forward	**£0.00**	

YOUR CHARGES THIS PERIOD (see page 2 for details)

Water services charges	£25.38
VAT	£5.07
Total charges this period	**£30.45**

We look forward to receiving your payment of £30.45

For ways to pay see page 3

2022/23 charges

You can find more information on our charges and ways to save water and money on our website.

Visit business-stream.co.uk

Posted 5/12/22

How much water are you using?

If you'd like to reduce the volume of water you're using, check out our water saving tips on our website. You'll also be able to find advice on our website **business-stream.co.uk**

Estimated invoice

This invoice is based on an estimated read. If we receive an actual read, we will use it to calculate your next bill. You can submit your own readings, as long as it's safe to access your meter, on **business-stream.co.uk/meter-reading**. If your water is not provided by us, we will receive reads from your other supplier.

The water experts

Unless otherwise agreed, Scottish Water Business Stream Ltd provides services to you in accordance with our standard terms and conditions, a copy of which is available here: www.business-stream.co.uk/EnglandWalesTerms. Copies are also available on request. Through your continued receipt and acceptance of our services, you are deemed to have accepted our standard terms and conditions.

32822L00_BSM-NEW | 000481 | Page 1 of 4 | BILLS
NNYNNN1400/MOC/SME/0/22

Your charges in detail

Based on this period your annual carbon consumption is **4.47 kgCO2e/yr**, based on National Government statistics.

Meter number / meter size: 13A10225 ARAD 25mm

Water charges			Units	Rate	VAT	Charge
Fixed water charge						
Yearly fee £51.61	12 Aug 22 - 22 Nov 22		103 days	0.141397	S	£14.56
Volumetric water charge						
Estimated reading	23 Nov 22	436				
Actual reading	12 Aug 22	429				
=Volume used this period			7.00 m³			
Charges	12 Aug 22 - 23 Nov 22		7.00 m³	1.545000	S	£10.82
Total water charges						**£25.38**

A yearly fee for the upkeep of external pipes and pumps that supply water to your property.

The charge for the recorded amount of water you've used, measured by your meter.

Subtotal	**£25.38**
VAT at 20%	£5.07
Total charges this period	**£30.45**

VAT on our charges
Most of our services are zero-rated (Z) but some are standard rate (S) or outside scope (O).
See **business-stream.co.uk/vat** for more informati

Annex C - BREEAM Calculations

Existing Baseline Performance Level

Proposed Baseline Performance Level

Proposed Performance Level 3

BREEAM 2018 Wat 01 Water consumption: Water efficiency calculator for new non domestic office buildings

BREEAM UK delivered by bre

Building type	Description of building type	Default occupancy	Default annual days/operation	Default daily hours of operation
Office	Offices and workshop business (including those with a basic (category 1) laboratory area)	3.774	253	10

	Main building activity areas	Description of activity area	Activity area present in building?	Net Floor Area (m^2)
	Office - Office areas	Cellular or open plan office space, including staff kitchen where present/adjacent and reception areas. Exlcude meeting rooms, visitor waiting or circulation areas.	Yes	34
>	Office - Small workshop / laboratory space	Small scale workshop or category 1 laboratory area	Please select	
>	Office - Staff canteen dining area	Seated dining areas that accompany a permanently staffed kitchen preparing food for consumption on the premises (excludes small un-staffed kitchen's used by office staff to re-heat food, make tea etc.)	Please select	
>	Office - Fitness suite/gym (with changing facility and showers)	A fitness suite or gym that is part of the office building/development and used by the building's employees only. The gym will have its own changing facility with showers.	Please select	

Water consumption - building microcomponent

WC component - all activity areas	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
WC - male (urinals installed)	Effective flush volume (Litres)	6.00	1.00	1.00	3.00
WC - female	Effective flush volume (Litres)	6.00	4.00	1.00	12.00

Urinal component - all activity areas	units	Specification	No. of cisterns	Flushing frequency (flushes/hour)	Consumption (L/person/day)
Automatically operated flushing cistern	Cistern capacity (Litres)				0.00
	No. of urinal bowls				

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)	7.50	3.00	1.00	7.50
	No. of urinal bowls	2.00			

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Waterless urinals (all activity areas)	Flush volume (litres)	Waterless urinals - not specified	3.00	1.00	0.00
	No. of urinal bowls				

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Taps components (personal hygiene) - all activity areas					
Wash hand basin taps	Flow rate (litres/min)	12.00	4.00	0.25	8.12
Shower use	Flow rate (litres/min)	0.00	0.154	5.60	0.00
Fixed use - vessel filling	Litres/person/day	-	-	-	1.58
Tap components (cleaning) - staff kitchenette					
Kitchen taps - kitchenette	Flow rate (litres/min)	12.00	1.00	0.67	5.44
Dishwasher	Litres/cycle	0.00	0.04	1.00	0.00
Tap components (cleaning and food preparation) - staff canteen food preparation area					
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)	0.00	-	60.00	0.00
Dishwasher	Litres/rack	0.00	-	0.217	0.00
Waste disposal unit	Flow rate (litres/min)	0.00	-	30.00	0.00
Fixed use - food preparation	Litres/person/day	-	-	-	0.00
Fixed use - kitchen cleaning	Litres/person/day	-	-	-	0.00

	Microcomponent consumption (L/person/day)
Total	37.65

Minimum requirements according to EU taxonomy for sustainable finance

Do all the installed wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min?	System not specified
Do all the installed showers have a maximum water flow of 8 litres/min?	System not specified
Do all WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres?	System not specified
Do all urinals use a maximum of 2 litres/bowl/hour and flushing urinals have a maximum full flush volume of 1 litre?	System not specified
Is all the EU taxonomy requirements for sanitary equipment met?	Yes

Non potable water yield - greywater system

Has, or will, the greywater system be specified and installed in compliance with BS8525-1:2010 Greywater Systems - Part 1 Code of Practice	No

Greywater source (building components)	Greywater collected	Proportion of components collected from (%)	Greywater yield (L/person/day)

Greywater source (other components)	Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)	Greywater yield (L/person/day)

	Greywater yield (L/person/day)
Total	0.00

Non potable water yield - rainwater system

Has, or will, the rainwater system be specified and installed in compliance with BS EN 16941-1:2018 Rainwater Harvesting Systems - Code of practice	No
How has the storage capacity for the proposed system been calculated?	

Rainwater yield if basic approach:

Collection area (m2)	Rainfall (average mm/yr)	Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)	Rainwater yield (L/person/day)

Rainwater yield if detailed:

Daily rainfall collection (litres)	Rainwater yield (L/person/day)

Non Potable Water Demand - Building Components

	Greywater and/or rainwater yield (L/person/day)
Total	

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)	Maximum permissible demand (L/person/day)

	Demand met by yield (L/person/day)
Total	

Other permissible components

	Maximum permissible demand (L/day)

	Demand met by yield (L/person/day)
Total	

	Greywater and/or rainwater demand met by yield (L/person/day)
Total	

Water consumption calculation results

	Litres/person/day	m^3/person/yr
Water consumption - modelled baseline performance benchmark (excludes fixed uses)	**337.22**	**85.32**
Microcomponent water consumption - modelled performance (excludes fixed uses)	**36.07**	**9.12**
Modelled water demand met via greywater and rainwater sources	**0.00**	**0.00**
If greywater/rainwater systems specified has the minimum % efficiency improvement for component specifications been met	**System not specified**	
Net modelled water consumption (excludes fixed uses)	**36.07**	**9.12**
Percentage improvement	**89.30%**	
Total Wat 01 BREEAM credits achieved, before checking minimum requirements according to EU taxonomy for sustainable finance.	**5 credits**	
Total Wat 01 BREEAM credits achieved	**5 credits**	
Total Wat 01 BREEAM Exemplary credits achieved	**1 innovation credit achieved**	
Key performance indicator - use of freshwater resource (includes fixed uses)	**37.65**	**9.52**

BREEAM 2018 Wat 01 Water consumption: Water efficiency calculator for new non domestic office buildings

BREEAM UK delivered by bre

Building type	Description of building type	Default occupancy	Default annual days/operation	Default daily hours of operation
Office	Offices and workshop business (including those with a basic (category 1) laboratory area)	3.774	253	10

	Main building activity areas	Description of activity area	Activity area present in building?	Net Floor Area (m^2)
	Office - Office areas	Cellular or open plan office space, including staff kitchen where present/adjacent and reception areas. Exlcude meeting rooms, visitor waiting or circulation areas.	Yes	34
>	Office - Small workshop / laboratory space	Small scale workshop or category 1 laboratory area	Please select	
>	Office - Staff canteen dining area	Seated dining areas that accompany a permanently staffed kitchen preparing food for consumption on the premises (excludes small un-staffed kitchen's used by office staff to re-heat food, make tea etc.)	Please select	
>	Office - Fitness suite/gym (with changing facility and showers)	A fitness suite or gym that is part of the office building/development and used by the building's employees only. The gym will have its own changing facility with showers.	Please select	

Water consumption - building microcomponent

WC component - all activity areas	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
WC - male (urinals installed)	Effective flush volume (Litres)	6.00	1.00	1.00	3.00
WC - female	Effective flush volume (Litres)	6.00	4.00	1.00	12.00

Urinal component - all activity areas	units	Specification	No. of cisterns	Flushing frequency (flushes/hour)	Consumption (L/person/day)
Automatically operated flushing cistern	Cistern capacity (Litres)				0.00
	No. of urinal bowls				

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)	7.50	3.00	1.00	9.00
	No. of urinal bowls	4.00			

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Waterless urinals (all activity areas)	Flush volume (litres)	Waterless urinals - not specified	3.00	1.00	0.00
	No. of urinal bowls				

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Taps components (personal hygiene) - all activity areas					
Wash hand basin taps	Flow rate (litres/min)	12.00	4.00	0.25	8.12
Shower use	Flow rate (litres/min)	0.00	0.154	5.60	0.00
Fixed use - vessel filling	Litres/person/day	-	-	-	1.58
Tap components (cleaning) - staff kitchenette					
Kitchen taps - kitchenette	Flow rate (litres/min)	12.00	1.00	0.67	5.44
Dishwasher	Litres/cycle	0.00	0.04	1.00	0.00
Tap components (cleaning and food preparation) - staff canteen food preparation area					
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)	0.00	-	60.00	0.00
Dishwasher	Litres/rack	0.00	-	0.217	0.00
Waste disposal unit	Flow rate (litres/min)	0.00	-	30.00	0.00
Fixed use - food preparation	Litres/person/day	-	-	-	0.00
Fixed use - kitchen cleaning	Litres/person/day	-	-	-	0.00

	Microcomponent consumption (L/person/day)
Total	39.15

Minimum requirements according to EU taxonomy for sustainable finance

Do all the installed wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min?	System not specified
Do all the installed showers have a maximum water flow of 8 litres/min?	System not specified
Do all WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres?	System not specified
Do all urinals use a maximum of 2 litres/bowl/hour and flushing urinals have a maximum full flush volume of 1 litre?	System not specified
Is all the EU taxonomy requirements for sanitary equipment met?	Yes

Non potable water yield - greywater system

Has, or will, the greywater system be specified and installed in compliance with BS8525-1:2010 Greywater Systems - Part 1 Code of Practice	No

Greywater source (building components)	Greywater collected	Proportion of components collected from (%)	Greywater yield (L/person/day)

Greywater source (other components)	Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)	Greywater yield (L/person/day)

	Greywater yield (L/person/day)
Total	0.00

Non potable water yield - rainwater system

Has, or will, the rainwater system be specified and installed in compliance with BS EN 16941-1:2018 Rainwater Harvesting Systems - Code of practice	No
How has the storage capacity for the proposed system been calculated?	

Rainwater yield if basic approach:

Collection area (m2)	Rainfall (average mm/yr)	Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)	Rainwater yield (L/person/day)

Rainwater yield if detailed:

Daily rainfall collection (litres)	Rainwater yield (L/person/day)

Non Potable Water Demand - Building Components

	Greywater and/or rainwater yield (L/person/day)
Total	

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)	Maximum permissible demand (L/person/day)

	Demand met by yield (L/person/day)
Total	

Other permissible components

	Maximum permissible demand (L/day)

	Demand met by yield (L/person/day)
Total	

	Greywater and/or rainwater demand met by yield (L/person/day)
Total	

Water consumption calculation results

	Litres/person/day	m^3/person/yr
Water consumption - modelled baseline performance benchmark (excludes fixed uses)	**337.42**	**85.37**
Microcomponent water consumption - modelled performance (excludes fixed uses)	**37.57**	**9.50**
Modelled water demand met via greywater and rainwater sources	**0.00**	**0.00**
If greywater/rainwater systems specified has the minimum % efficiency improvement for component specifications been met	**System not specified**	
Net modelled water consumption (excludes fixed uses)	**37.57**	**9.50**
Percentage improvement	**88.86%**	
Total Wat 01 BREEAM credits achieved, before checking minimum requirements according to EU taxonomy for sustainable finance.	**5 credits**	
Total Wat 01 BREEAM credits achieved	**5 credits**	
Total Wat 01 BREEAM Exemplary credits achieved	**1 innovation credit achieved**	
Key performance indicator - use of freshwater resource (includes fixed uses)	**39.15**	**9.90**

BREEAM 2018 Wat 01 Water consumption: Water efficiency calculator for new non domestic office buildings

BREEAM UK delivered by bre

Building type	Description of building type	Default occupancy	Default annual days/operation	Default daily hours of operation
Office	Offices and workshop business (including those with a basic (category 1) laboratory area)	3.774	253	10

	Main building activity areas	Description of activity area	Activity area present in building?	Net Floor Area (m^2)
	Office - Office areas	Cellular or open plan office space, including staff kitchen where present/adjacent and reception areas. Exlcude meeting rooms, visitor waiting or circulation areas.	Yes	34
>	Office - Small workshop / laboratory space	Small scale workshop or category 1 laboratory area	Please select	
>	Office - Staff canteen dining area	Seated dining areas that accompany a permanently staffed kitchen preparing food for consumption on the premises (excludes small un-staffed kitchen's used by office staff to re-heat food, make tea etc.)	Please select	
>	Office - Fitness suite/gym (with changing facility and showers)	A fitness suite or gym that is part of the office building/development and used by the building's employees only. The gym will have its own changing facility with showers.	Please select	

Water consumption - building microcomponent

WC component - all activity areas	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
WC - male (urinals installed)	Effective flush volume (Litres)	4.00	1.00	1.00	2.00
WC - female	Effective flush volume (Litres)	4.00	4.00	1.00	8.00

Urinal component - all activity areas	units	Specification	No. of cisterns	Flushing frequency (flushes/hour)	Consumption (L/person/day)
Automatically operated flushing cistern	Cistern capacity (Litres)				0.00
	No. of urinal bowls				

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Manual/automatic operated pressure flushing valve (all activity areas)	Flush volume (litres)	1.50	3.00	1.00	1.80
	No. of urinal bowls	4.00			

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Waterless urinals (all activity areas)	Flush volume (litres)	Waterless urinals - not specified	3.00	1.00	0.00
	No. of urinal bowls				

	units	Specification	Usage/person/day	Usage factor	Consumption (L/person/day)
Taps components (personal hygiene) - all activity areas					
Wash hand basin taps	Flow rate (litres/min)	4.50	4.00	0.25	3.05
Shower use	Flow rate (litres/min)	0.00	0.154	5.60	0.00
Fixed use - vessel filling	Litres/person/day	-	-	-	1.58
Tap components (cleaning) - staff kitchenette					
Kitchen taps - kitchenette	Flow rate (litres/min)	5.00	1.00	0.67	2.27
Dishwasher	Litres/cycle	0.00	0.04	1.00	0.00
Tap components (cleaning and food preparation) - staff canteen food preparation area					
Kitchen taps - pre-rinse nozzle	Flow rate (litres/min)	0.00	-	60.00	0.00
Dishwasher	Litres/rack	0.00	-	0.217	0.00
Waste disposal unit	Flow rate (litres/min)	0.00	-	30.00	0.00
Fixed use - food preparation	Litres/person/day	-	-	-	0.00
Fixed use - kitchen cleaning	Litres/person/day	-	-	-	0.00

	Microcomponent consumption (L/person/day)
Total	18.69

Minimum requirements according to EU taxonomy for sustainable finance

Do all the installed wash hand basin taps and kitchen taps have a maximum water flow of 6 litres/min?	System not specified
Do all the installed showers have a maximum water flow of 8 litres/min?	System not specified
Do all WCs, including suites, bowls and flushing cisterns, have a full flush volume of a maximum of 6 litres and a maximum average flush volume of 3,5 litres?	System not specified
Do all urinals use a maximum of 2 litres/bowl/hour and flushing urinals have a maximum full flush volume of 1 litre?	System not specified
Is all the EU taxonomy requirements for sanitary equipment met?	Yes

Non potable water yield - greywater system

Has, or will, the greywater system be specified and installed in compliance with BS8525-1:2010 Greywater Systems - Part 1 Code of Practice	No

Greywater source (building components)	Greywater collected	Proportion of components collected from (%)	Greywater yield (L/person/day)

Greywater source (other components)	Typical greywater yield (litres)	Frequency of yield (days)	Greywater yield (litres/day)	Greywater yield (L/person/day)

	Greywater yield (L/person/day)
Total	0.00

Non potable water yield - rainwater system

Has, or will, the rainwater system be specified and installed in compliance with BS EN 16941-1:2018 Rainwater Harvesting Systems - Code of practice	No
How has the storage capacity for the proposed system been calculated?	

Rainwater yield if basic approach:

Collection area (m2)	Rainfall (average mm/yr)	Hydraulic filter efficiency (%)	Yield co-efficient (%)	Annual rainwater yield (Litres)	Rainwater yield (L/person/day)

Rainwater yield if detailed:

Daily rainfall collection (litres)	Rainwater yield (L/person/day)

Non Potable Water Demand - Building Components

	Greywater and/or rainwater yield (L/person/day)
Total	

Component	Greywater and/or rainwater utilised for component	Proportion of components using greywater and/or rainwater yield (%)	Maximum permissible demand (L/person/day)

	Demand met by yield (L/person/day)
Total	

Other permissible components

	Maximum permissible demand (L/day)

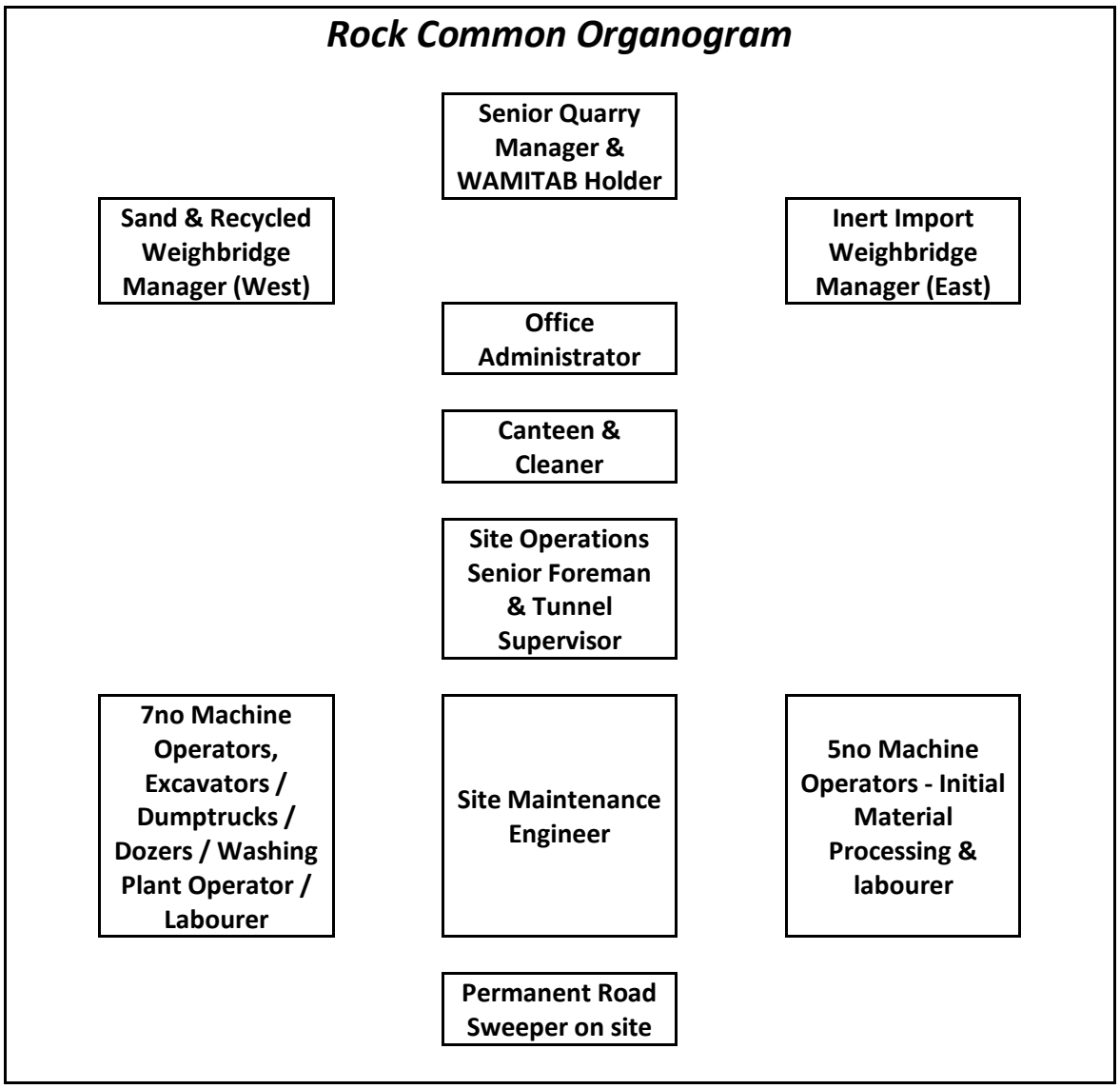
	Demand met by yield (L/person/day)
Total	

	Greywater and/or rainwater demand met by yield (L/person/day)
Total	

Water consumption calculation results

	Litres/person/day	m^3/person/yr
Water consumption - modelled baseline performance benchmark (excludes fixed uses)	**337.42**	**85.37**
Microcomponent water consumption - modelled performance (excludes fixed uses)	**17.11**	**4.33**
Modelled water demand met via greywater and rainwater sources	**0.00**	**0.00**
If greywater/rainwater systems specified has the minimum % efficiency improvement for component specifications been met	**System not specified**	
Net modelled water consumption (excludes fixed uses)	**17.11**	**4.33**
Percentage improvement	**94.92%**	
Total Wat 01 BREEAM credits achieved, before checking minimum requirements according to EU taxonomy for sustainable finance.	**5 credits**	
Total Wat 01 BREEAM credits achieved	**5 credits**	
Total Wat 01 BREEAM Exemplary credits achieved	**1 innovation credit achieved**	
Key performance indicator - use of freshwater resource (includes fixed uses)	**18.69**	**4.73**

Annex D – Organisation Chart



Annex E - Wheel Wash Specifications

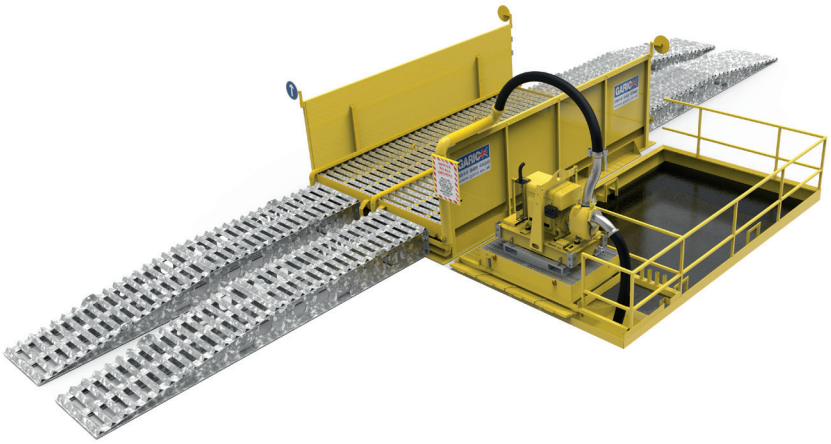
GARIC

ON-DEMAND, ON-SITE, ON-TIME.

SALE ITEM
BUY ME TODAY

ENVIRO WHEEL WASH

A HISTORY OF INNOVATION



STANDARD SPECIFICATIONS:

Product Code	300002
Unit Name	Enviro Wheel Wash
Dimensions with ramps	62 x 24ft / 20 x 7.3m
Dimensions without ramps	22 x 24ft / 6.7 x 7.3m
Weight	12,200Kg
Weight (with ramps)	14,200Kg
Power type	6" Diesel water pump
Steel fabricated wash area	✔
Internal removable rumble road sections	✔
25mm water inlet (c/w ball cock fitted)	✔
Heavy duty lifting/lashing points	✔
Automated magic eye system	✔
Dig Measurements	6.3m length x 1.02m depth x 3.5m width

Our enviro wheel wash is the ideal solution for demolition, quarrying and ground works sites where trucks, dumpers and lorries are regularly passing through heavy duty mud, dirt and debris.

Our fully automated and totally self-sufficient enviro wheel wash is perfect for sites where sticky clay and mud can be a big problem. As vehicles pass through the wheel wash, exceptionally powerful jets spray water onto the wheels, chassis and undersides, cleaning the vehicles without them even needing to stop. The wheel wash is environmentally friendly and utilises the latest water filtration technology combined with a 100 percent water recirculation system.

It doesn't require an operative and is easy to maintain due to an innovative easy-clean water catchment area. Furthermore, it requires no electricity power source because it runs off a simple yet reliable 6" diesel pump.

The enviro wheel wash can be elevated and placed directly onto a surfaced area with ramps or excavated into the ground making it suitable for a large variety of sites.

KEY FEATURES:

- Powered heavy duty wheel wash
- Steel fabricated wash area
- Heavy duty lifting and lashing points
- Cleaning area with vertical spray jets
- Automatic sensors

OPTIONAL EXTRAS AVAILABLE

- Remote lagoon
- Upgrade max load
- Upgrade - Additional spray/wash nozzles
- Upgrade - duel pump system
- Electric pump
- Corporate paint spec.

Table 41: Water efficient consumption levels by component type

Component		Performance levels (quoted numbers are minimum performance required to achieve the level)						
		Base	1	2	3	4	5	Unit
WC		6	5	4.5	4	3.75	3	Effective flush volume (litres)
Wash hand basin taps		12	9	7.50	4.50	3.75	3	litres/min
Showers		14	10	8	6	4	3.50	litres/min
Baths		200	180	160	140	120	100	litres
Urinal (2 or more urinals)		7.50	6	3	1.50	0.75	0	litres/bowl/hour
Urinal (1 urinal only)		10	8	4	2	1	0	litres/bowl/hour
Greywater or rainwater system	Precipitation zone 1	0%	0%	0%	25%	50%	75%	% of WC or urinal flushing demand met using recycled non-potable water
	Precipitation zone 2	0%	0%	0%	0%	25%	50%	
	Precipitation zone 3	0%	0%	0%	0%	0%	15%	
Kitchen tap: kitchenette		12	10	7.50	5	5	5	litres/min
Kitchen taps: restaurant (pre-rinse nozzles only)		10.30	9	8.30	7.30	6.30	6	litres/min
Domestic sized dishwashers		17	13	13	12	11	10	litres/cycle
Domestic sized washing machines		90	60	50	40	35	30	litres/use
Waste disposal unit		17	17	0	0	0	0	litres/min
Commercial-sized dishwashers		8	7	6	5	4	3	litres/rack
Commercial or industrial sized washing machines		14	12	10	7.50	5	4.50	litres/kg

Please note that specifying components for a building in accordance with the above levels will result, in most cases, in the corresponding number of BREEAM credits being achieved. However, please bear in mind that the component specifications above are akin to thresholds between each level. Therefore caution should be exercised when defining a component specification for a BREEAM-assessed building using exactly the same levels as the threshold levels. It is recommended that, where Wat 01 BREEAM credits are being targeted, the performance of a particular building's component specification is verified using the BREEAM Wat 01 calculator before committing to a particular specification and ordering or installing components. This will provide greater assurance that the component specification achieves the targeted number of BREEAM credits.