

Hydro-Brake® Orifice

The Hydro-Brake® Orifice delivers cost-effective, precise, repeatable flow control and is suitable for unconstrained sites with generous discharge consents

The Hydro-Brake® Orifice is a precision-cut, sharp-edged orifice plate flow control, available in a broad range of configurations. A low-cost, low-complexity flow control, it is the ideal choice where there is minimal limitation on space available for on-site flood storage and attenuation, or where there are generous discharge consents.



Surface water management and SuDS



Watercourse flood prevention



Sewer network optimisation



Flexible and Versatile

Already trusted as part of Hydro International's family of precision-engineered flow control devices, the Hydro-Brake® Orifice can be designed and manufactured to meet a wide variety of configurations. With the Hydro-Brake® Orifice there is no need to compromise on your project needs.

Configured for Each Site

Each Hydro-Brake® Orifice is manufactured to suit the precise hydraulic requirements specified for the application. Our experienced professional engineering team will work with you to understand the needs of your site and recommend the best solution.

A wide variety of configurations and mounting options is available, for example integrated mesh guards, curve mount, pipe inserts and slide- or pivot-mounts. Hydro International can advise on sizing and flow rates and recommend the best solution for your site.

Quality Manufacture

The Hydro-Brake® Orifice is manufactured from high-grade stainless steel under strict Quality Assurance to the exacting methods and tolerances set out in the international standard BS EN ISO 5167-2: 2003.

Simple to Install

The Hydro-Brake® Orifice is simple to install. It can also be supplied pre-fitted in a precast reinforced concrete chamber for 'plug-and-play' installation on site.

Resilience by Design

The Hydro-Brake® Orifice can be supplied with integrated protection against the risk of blockages. Alternatively, the Hydro-Brake® Orifice can be mounted on moveable or removable structures to allow for manual intervention to drain the control chamber from surface level and clear any blockages that do occur.

Hydro-Brake® Orifice Selection Criteria

Suitability:	Unconstrained sites with generous discharge consents		
Flow Range (l/s)	Head Range (m)	Ability to match greenfield discharge rate	On-site water storage requirement
2.5 – 100 *	0.25 – 2.0 *	Not suited to all sites	Unconstrained
Moving Parts?	External Power?	Risk of blockage?	
No	No	Not suited to all sites	

* flows and heads may be possible outside of these ranges (contact Hydro International to discuss)

Hydro-Brake® Flow Control Series Selection Guide

The Hydro-Brake® Flow Control Series is a versatile toolbox for surface water, fluvial, foul water, and sewer network flow control. No matter what the site and budget, every flow control offers the same precision-engineered performance.

Features	Hydro-Brake® Flood	Hydro-Brake® Optimum	Hydro-Brake® Agile	Hydro-Brake® Orifice
Suitability	For watercourses; Flood storage reservoirs	Most sites, from very low to very high flow rates	Constrained sites with stringent discharge consents	Unconstrained sites with generous discharge consents
Flow Range (l/s) *	550 – 12,000	0.7 – 550	4.5 – 100	2.5 – 100
Head Range (m) *	1.5 – 10	0.4 – 4.0	0.4 – 2.4	0.25 – 2.0
Ability to Match Greenfield Discharge Rate	n/a	Very good	Good	Not suited to all sites
Moving Parts	No	No	Yes	No
External Power Requirement	No	No	No	No
Constant Discharge	No	No	Yes	No
On-site Storage	Low	Low	Very low	Unconstrained
Risk of Blockage	Very low	Very low	Not suited to all sites	Not suited to all sites

* flows and heads outside of these ranges may be possible (contact Hydro International to discuss)

Expert Design Support

No matter how big or small the project, Hydro International's professional engineers are on hand to provide free support to designers and specifiers to aid with the correct selection and configuration of Hydro flow controls for each project design.

Our dedicated design support team advises on best-practice sizing, flow and storage calculations for the Hydro-Brake® Flow Control Series within your surface water, fluvial, sewer or wastewater plant design.

Consultancy

Hydro International's Consultancy team is available for civil engineering, flood risk management and hydraulic system modelling for new and retrofit development, fluvial or wastewater treatment plant projects.

Documentation

Our dedicated design support team can assist with the output of hydraulic data to support your system design and dimensioned installation drawings, as well as advising on successful integration with other Hydro International water treatment and storage products.

**Call the Hydro-Brake® Hotline 01275 337937
or email hydrobrake@hydro-int.com.**

For Flow Control
Product and Design Advice:

Tel: 01275 337937

Email: hydrobrake@hydro-int.com

Hydro-Brake[®] Flow Control Series

Shearwater House
Clevedon Hall Estate
Victoria Road, Clevedon
BS21 7RD

Tel: **01275 878371**

Fax: **01275 874979**

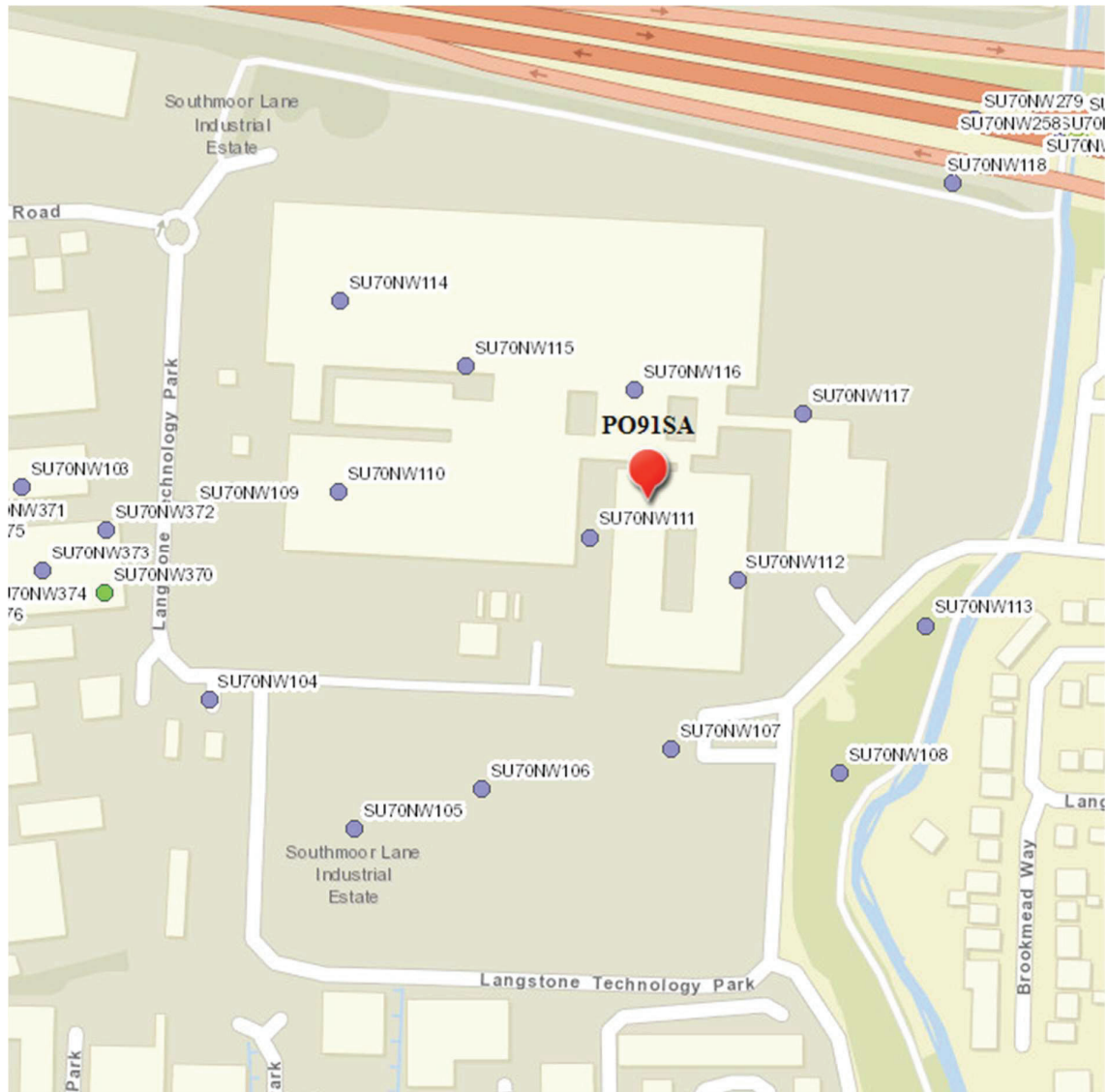
www.hydro-int.com

Turning Water Around...[®]

APPENDIX F

Borehole Logs

Borehole Location Log



SU70NW118

I. B. M.

PROPOSED DEVELOPMENT AT BROOKSIDE ROAD, HAVANT, HAMPSHIRE

RECORD OF BOREHOLE No. 20

Type of Boring: Shell and auger

Dia. of boring: 6 in. to 16 ft. 6 in.

Lining tubes: 6 in. to 16 ft.

SU70NW/118

Ground level: 5-15 m

Date started: 17-0-00

Date completed: 18-11-66

Date and Depth of Boring	Depth of Casing	Water Level	Samples		Change of Strata		Description of Strata
			Depth	Type	Legend	Depth	
15-11-66	nil		1' 0"	D			Brown PEAT
8' 0"	nil		2' 0"-3' 0"	C(12)		15' 3"	Medium dense flint GRAVEL with some light grey-brown silty clay
	4' 0"		5' 0"-6' 0"	C(19)		12' 3"	
	7' 0"	8' 9"	8' 0"-9' 0"	C(20) W			Medium dense flint GRAVEL with traces of chalk
	9' 0"		10' 0"-11' 0"	C(45)			
	11' 6"		11' 9"	D		11' 6"	
	11' 6"		12' 0"-13' 6"	U4(115)			
15' 0"	12' 0"	10' 0"	14' 0"-15' 0"	C(21)			Chalk COBBLES in a matrix of firm putty chalk
16-11-66	16' 0"	8' 0"	16' 0"	D			
	16' 0"		17' 0"-18' 0"	C(12)			
END OF BOREHOLE Depth: 16ft 6in. Elevation: 0.3' O.D.							

Key

⊕ denotes ground-water first encountered

U4() .. 4 in. dia. undisturbed sample

U1() .. 1 1/2 in. ..

D .. disturbed sample

B .. bulk sample

W .. water sample

S() .. standard penetration test

C() .. cone penetration test

(24) .. number of blows

.. sample not recovered

Remarks

Scale:
1 in. = 8 Ft.

FIG. 21

Form No. 190
(Revised 9/65)

Marple Roadway Limited

Site Investigation Division