



HALGAN PTY LTD

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Australian Pretreatment Market

Past and Present

- Design principles
- Approvals
- State Design
- Manufacturers
- Suitability

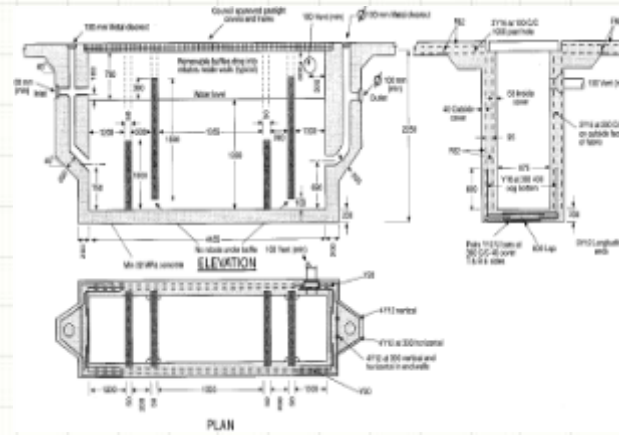
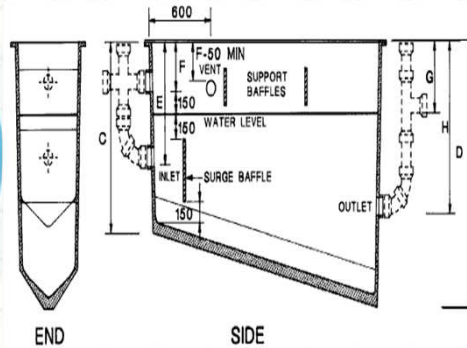


Past and Present Approvals

- Approvals in Australia are currently by state government bodies acting autonomously
- In many cases manufacturers have designed products to meet parameters perceived as appropriate and relevant by local authorities
- The difference in the perceived requirements of many local authorities, enhanced by the experience of key personnel over past years, has made it difficult to introduce the principle of commonality of design
- Some authorities have adopted means of providing some form of compliance with specifications established by bodies and agencies based on their own preferences.

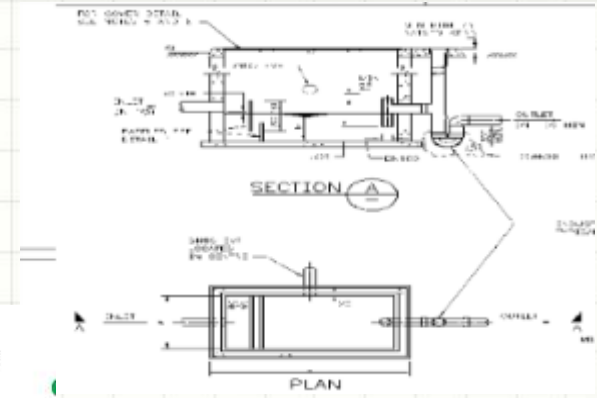
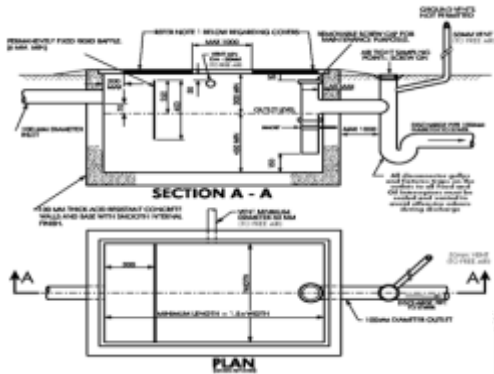


State Designs



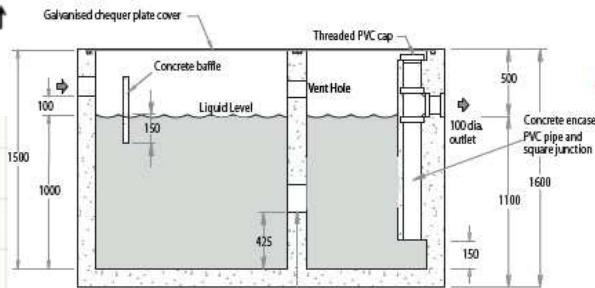
NSW

QLD



VIC

WA



SA



National, State & Territory Approvals

WSAA – Water Services Association of Australia. National Appraisal

NSW – Sydney Water, DUES, Hunter Water, Wyong Council, Gosford Council

QLD – QUU, Allconnex, Gold Coast Water, Logan Water, Redland Water, Mackay Water, Townsville Water

Victoria – SE Water, City West Water, Yarra Valley Water, Central High Lands Water, Bowen Water, Goulburn Valley Water, Yarra Valley Water

Northern Territory - PAWA

ACT - ACTEW

Western Australia – Water Corporation

South Australia – SA Water

Tasmania – Ben Lomond Water, Southern Water, Cradle Mountain



Manufacturers



Customer Experience

In Sydney in 1996 the average cost to install a 1000 litre grease trap was \$10,000 . In difficult sites up to \$50,000.00.

90 % of concrete grease traps have to be installed external of the building with easy access for excavators and cranes.

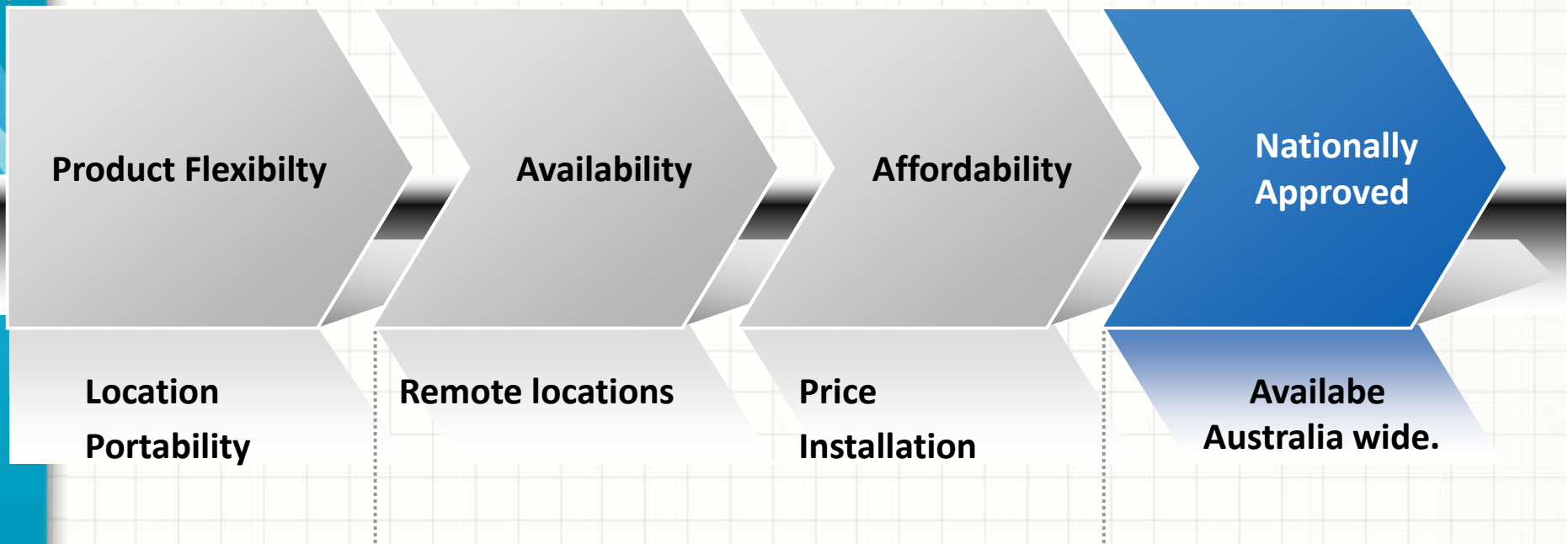
Majority of manufactures near major city & delivery to regional areas incurred cartage cost of up to \$8000.00.

States that have limited competition had higher product cost.

Periods of high demand due to Audits and seasonal surges experience lack of supply due to long manufacturing times for concrete GT's



What the Market Needs



Halgan Products Changing the Market



Ecotec Grease Extractor



Modular Grease Trap



Modular Grease Trap "S" Series



National Approvals

Nationally Appraised by WSAA (Water Services Association of Australia)

Modular Grease Trap Appraisal Report Number TWA 0808

Modular Grease Trap “S” Series Appraisal Report Number TWA 1201

New South

Wales:

- Sydney Water
- 2006-218A,
2006-218B
- DUES –
Department or
energy, Utilities
and Resources
- Hunter Water
- Wyong
Council
- Gosford
Council

Queensland:

- Brisbane Water
- Gold Coast Water
- Logan City Council
- Toowoomba
Council
- Ipswich Council
- Mackay Water
- Townsville Water
- Unity Water
- Urban Utilities

Australian Capital Territory:

- ACTEW

Victoria:

- South East Water
- Goulburn Valley Water
- Ballarat Council
- City West Water
- Yarra Valley Water
- Lower Murray Water

Tasmania:

- Southern Water
- Lomond Water
- Cradle Mountain Water

Northern Territory:

PAWA

South Australia:

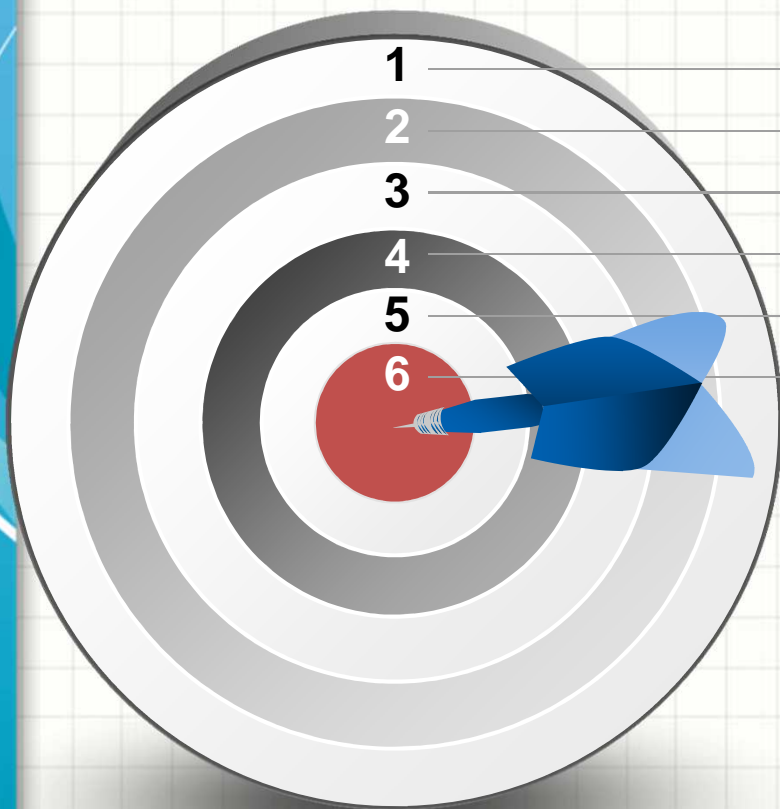
SA Water

Western Australia :

Water Corporation



The S100 Ecotec Grease Extractor



- Portable**
- Only 28kg weight**
- Can reduce installation cost by 70%**
- 95% treatment efficiency**
- Nationally Appraised**
- Patented by Halgan**



Ecotec Grease Extractor

**S100 suspended from a
carpark roof**



KFC Inground



Pizza Hut Above Ground



Child Care Inground



Modular Grease Trap

FLEXIBILITY - Multiple combinations mean Halgan can access all areas.

Tanks	1	2	3	4	Total ltr
MGT 1000	1000				1000
MGT 1000.2	500	500			1000
MGT 1500	1500				1500
MGT 1500.2	1000	500			1500
MGT 1500.3	500	500	500		1500
MGT 2000	1000	1000			2000
MGT2000.2	1500	500			2000
MGT 3000	1500	1500			3000
MGT 3000.2	1000	1000	1000		3000
MGT 4000	1500	1500	1000		4000
MGT4000.2	1000	1000	1000	1000	4000
MGT 5000	1500	1500	1000	1000	5000
MGT 5000.2	1500	1500	1500	500	5000



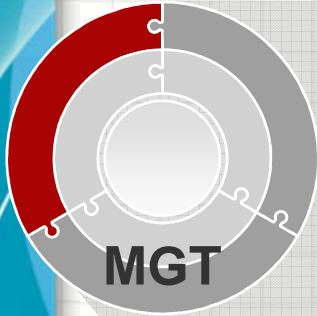
The multiple configurations allow ease of installation. Eg, a 1000 litre grease trap may be required, but the dimensions of a corridor may mean 2 x 500 litre MGTs are used

Modular Grease Trap

OH&S – Lighter weights mean safer handling



Money is saved as no heavy machinery is needed



Halgan MGT's are lightweight units designed for installation in all applications.

MGT's are narrow & easily lifted down alleyways & through doorways.

Installation costs are considerably reduced as cranes or heavy haulage equipment isn't needed.

Weather delays are less costly as they can be dropped on site.

- **MGT 500 – 60 kg**
- **MGT 1000 – 100 kg**
- **MGT 1500 – 140 kg**



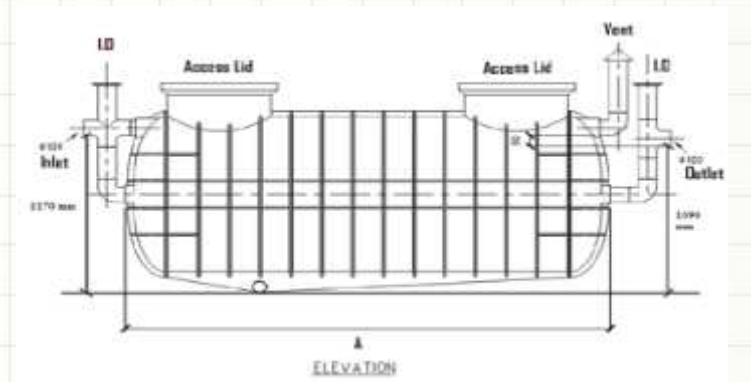
MGT “S” Series

The MGT S Series Grease Trap has been designed to incorporate features to not only, maximize performance, but to allow for enhanced servicing capabilities.

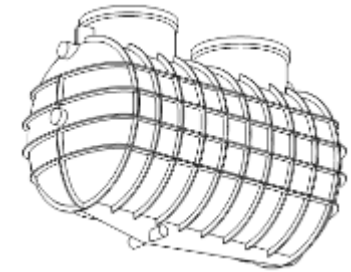


The design has been refined to a cylindrical, almost “submarine” type shape, whilst maintaining the strength that is required for below ground applications

The new shape allows for solids & sludge to be captured in a purpose built servicing channel, whilst utilizing the benefits of the existing Surge Control Device design.



Sizing



Modular Grease Trap Sizing

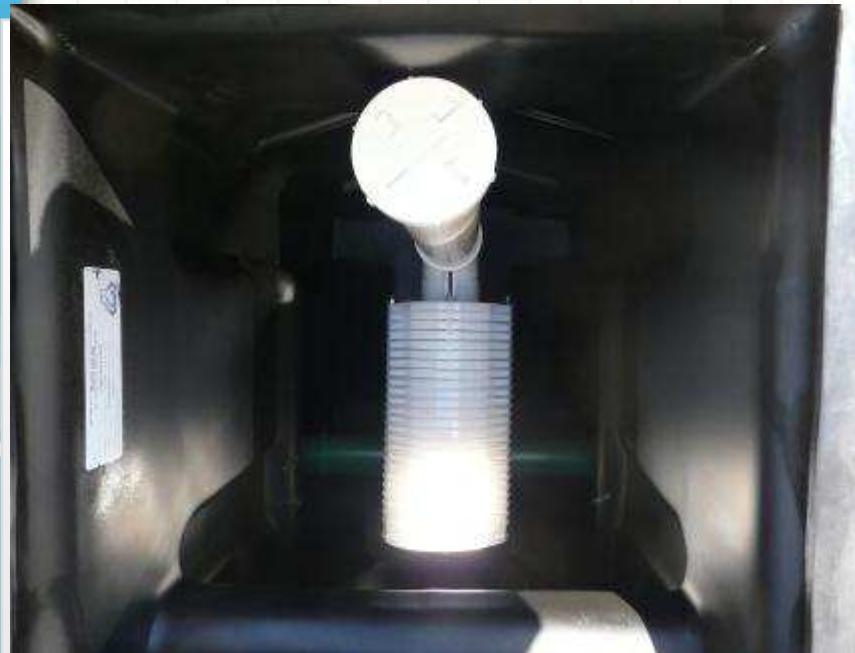
Model	1st tank litres	2nd tank litres	3rd tank litres	4th tank litres	5th tank litres	Total Liquid Capacity
MGT 1000S	1000					1000 litres
MGT 1500S	1500					1500 litres
MGT 2000S	2000					2000 litres
MGT 3000S	3000					3000 litres
MGT 4000S	2000	2000				4000 litres
MGT 5000S	3000	2000				5000 litres
MGT 5000S.2	2000	2000	1000			5000 litres
MGT 6000S	3000	3000				6000 litres
MGT 6000S.2	2000	2000	2000			6000 litres
MGT 7000S	3000	3000	1000			7000 litres
MGT 7000S.2	2000	2000	2000	1000		7000 litres
MGT 8000S	2000	2000	2000	2000		8000 litres
MGT 9000S	3000	3000	3000			9000 litres
MGT 10000S	2000	2000	2000	2000	2000	10000 litres



Product Suitability

SCD - Within each MGT and EGE is a surge control device to manage flow

The SCD



Operation of the SCD

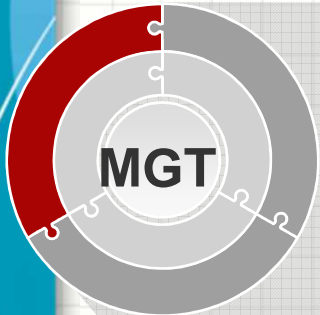
- The patented SCD (Surge Control Device) is designed to remove waterborne waste from trade, manufacturing and domestic sewage.
- SCDs combat surging flow rates & variable pollutant concentrations - the major causes of waste water treatment inefficiencies
- Stabilised surge promotes clean water to move out of the trap

Typically the design of available waste water treatment devices assumes a continuous process principle. In practice surges of flow rate result in inefficiencies. The SCD by virtue of its hydraulic backpressure design principle, addresses the fundamental engineering basic of a batch process



Product suitability

PERFORMANCE – You want a product which works best



Detention time increases over length

modular grease traps



As the effluent from the kitchen enters module 1, the heavy particles drop to the bottom and the lighter particles float to the top

Module 2 traps lighter particles and module 3 traps the lightest.

As module 1 starts to fill up with the heavier and lighter particles, the particles flow to module 2 and then module 3. Dirty water coming in, clean water going out

play

halgan

- Effluent from the kitchen enters module 1, where the heaviest particles drop to the bottom & the lighter particles float to the top
- Overflow from module 1 to 2 traps lighter particles & module 3 the lightest
- Dirty water coming in & clean water coming out



Product Suitability

MATERIALS - Polyethylene has a 50 + year projected life

Polyethylene Beads



Polyethylene Material Life

Polyethylene has a projected life of 50 + years. The polyethylene material is manufactured as per requirements of AS4766 UV Resistance using UV stabilizers such that the natural compound will retain 50% tensile elongation after 8000 h of exposure in a Xenon-Arc weatherometer when tested in accordance with ISO 4892-2 or ASTM 2565.

Manufactured from polymerised ethene, which is a by-product of natural production, Polyethylene may also be manufactured from the by-product of sugar cane as a renewable or bio plastic, adding to its green credentials.



Product suitability

MAINTENANCE - Concrete tanks need relining to maintain condition

Aggregate exposed in concrete



Polyethylene does not corrode

- ❑ Concrete & Glass Reinforced Concrete grease traps require regular special relining.
- ❑ Polyethylene is preferred for industrial & commercial fat & grease laden waste streams as it is chemically inert & non-porous – reducing potential for on-site soil contamination.

Concrete tanks are subject to micro biological attack as the binding agent in concrete is a food source to the microbes. This is overcome by costly lining & relining the concrete tanks, due to its inert nature, polyethylene does not need lining .



GREEN CREDENTIALS



Concrete Tanks v Polyethylene Tanks

Material	Water Consumption L/m3	Waste Water L/m3	Solid Waste to Land Fill Kg/m3	CO2 EMISSION Kg/m3
Concrete tanks	844	499	76	4100
Polyethylene Tanks	Nil	Nil	.05	1300

Air Pollutants manufacturing cement and concrete tanks:

- Cement Dust
- Sulphur
- Sulphuric Acid
- Nitrous Oxide
- Carbon Monoxide
- Hydrogen Sulphide

Air Pollutants manufacturing PE and PE tanks:

- **Nil.** Gas reaction happens in sealed reactor with no vents.

Recycling:

Recycled concrete has limited applications. Usually used for fill or road base.

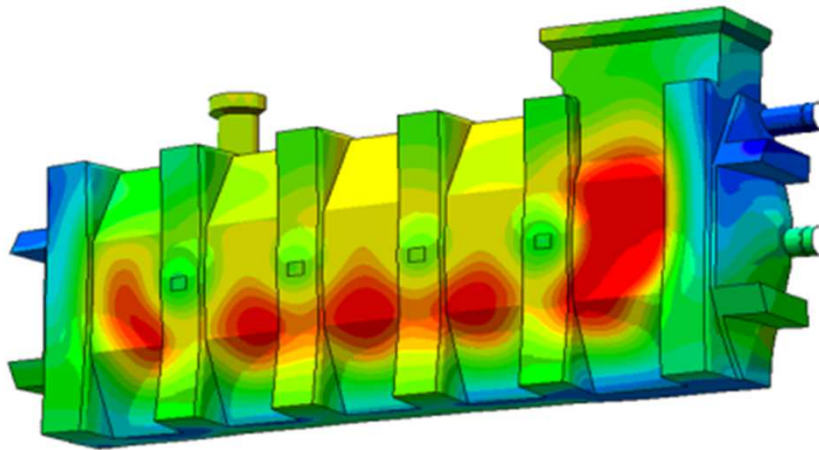
Polyethylene is **100 %** recyclable and is reused in production.



Product Suitability Buckle Load Factor (BLF)

STRENGTH - Finite Element Analysis Testing to AS 1546 Appendix H used

Light load is green & high load is red



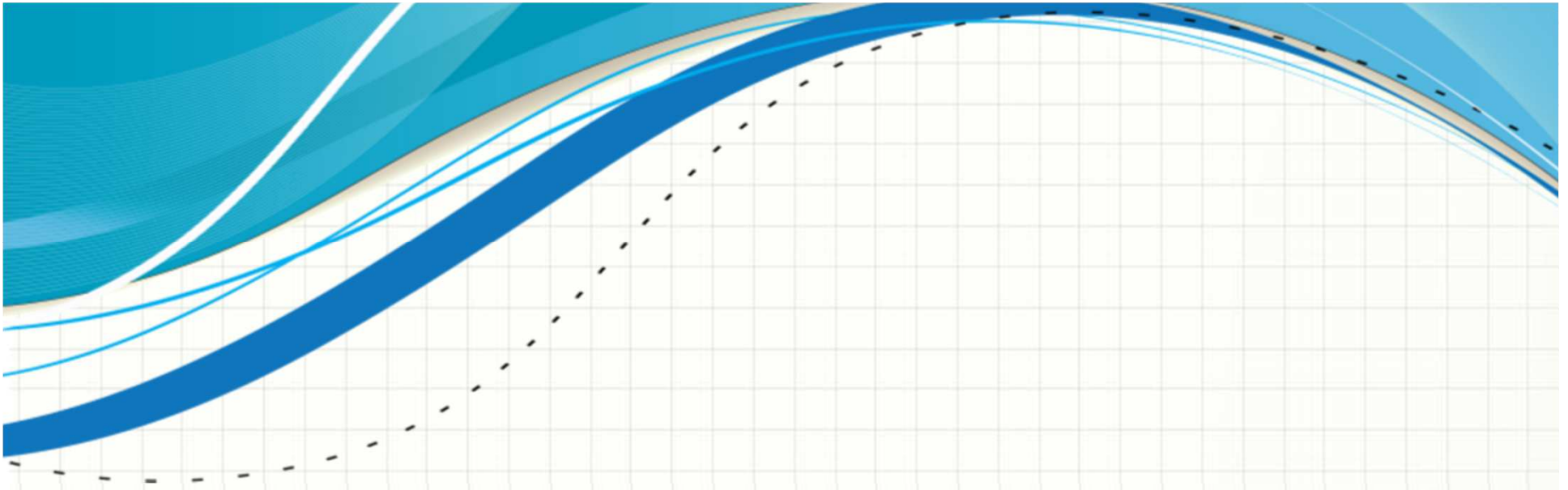
Halgan exceeds standards

- Using FEA computer modelling, structural engineers test assuming worse case soil conditions during installation, soil movement and hydrostatic pressure for extra safety
- Underground Grease Traps are designed to also withstand a top load of 5kiloNewtons kN (510kg)

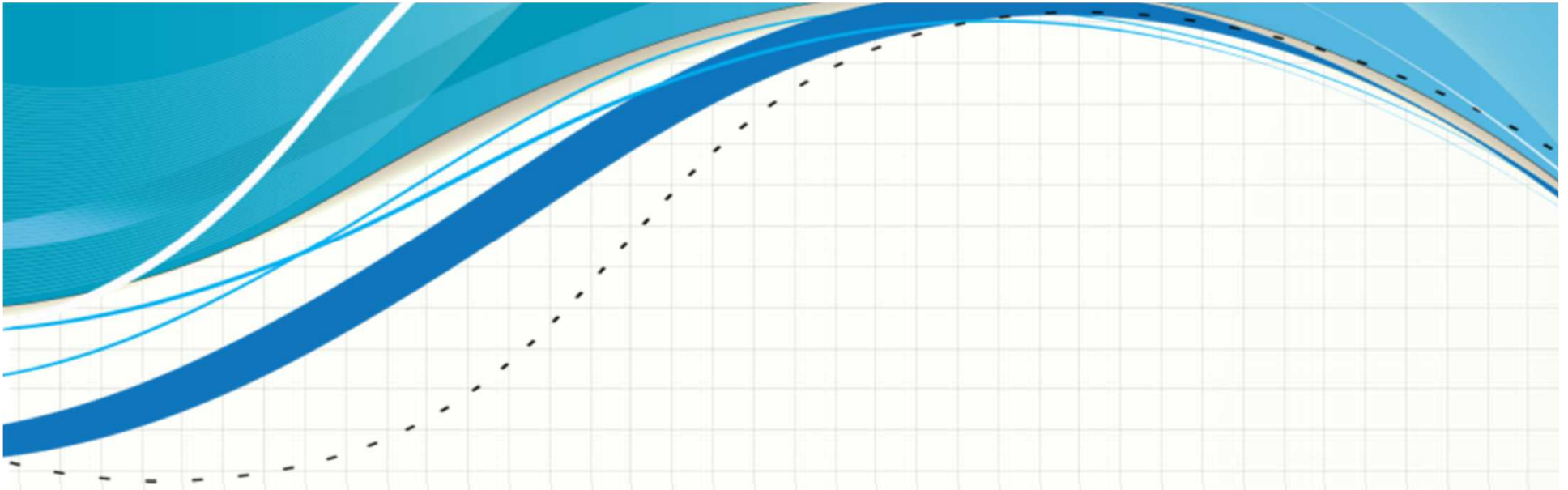
Where a BLF of 1 is the point a tank will buckle, the Australian Standard of 1.4 allows a 40% safety margin.

Halgan's Modular Grease Trap (MGT) achieved a BLF of 3 which allows for a 500% safety margin (200/40)





SERVICING



QUESTIONS?