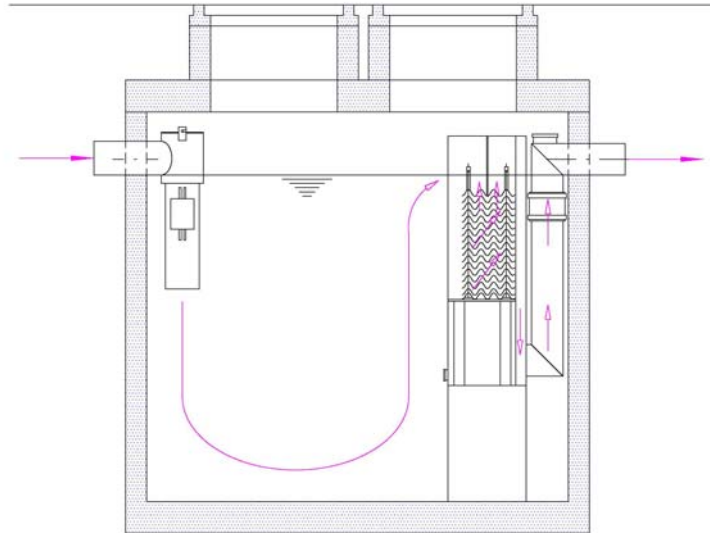


OIL SEPARATOR

OIL SEPARATORS ACCORDING EUROPEAN STANDARD EN858:

EREVOLIT

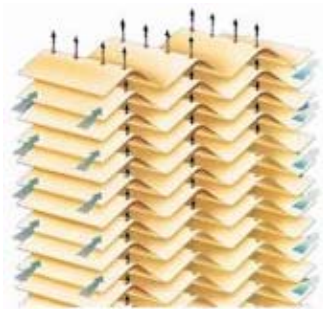
OIL-WATER SEPARATOR



according EN 858

OIL-WATER SEPARATOR

More than 5000
units in operation!



COALESCENT PLATES



PLATE PACKS

HYDROCARBONS AND RESIDUAL OIL-WATER SEPARATOR

OIL CONTENT IN EFFLUENT WATER AFTER SEPARATOR LESS THAN 5 ppm

CAPACITIES : from 3 litres/second to 600 litres/second



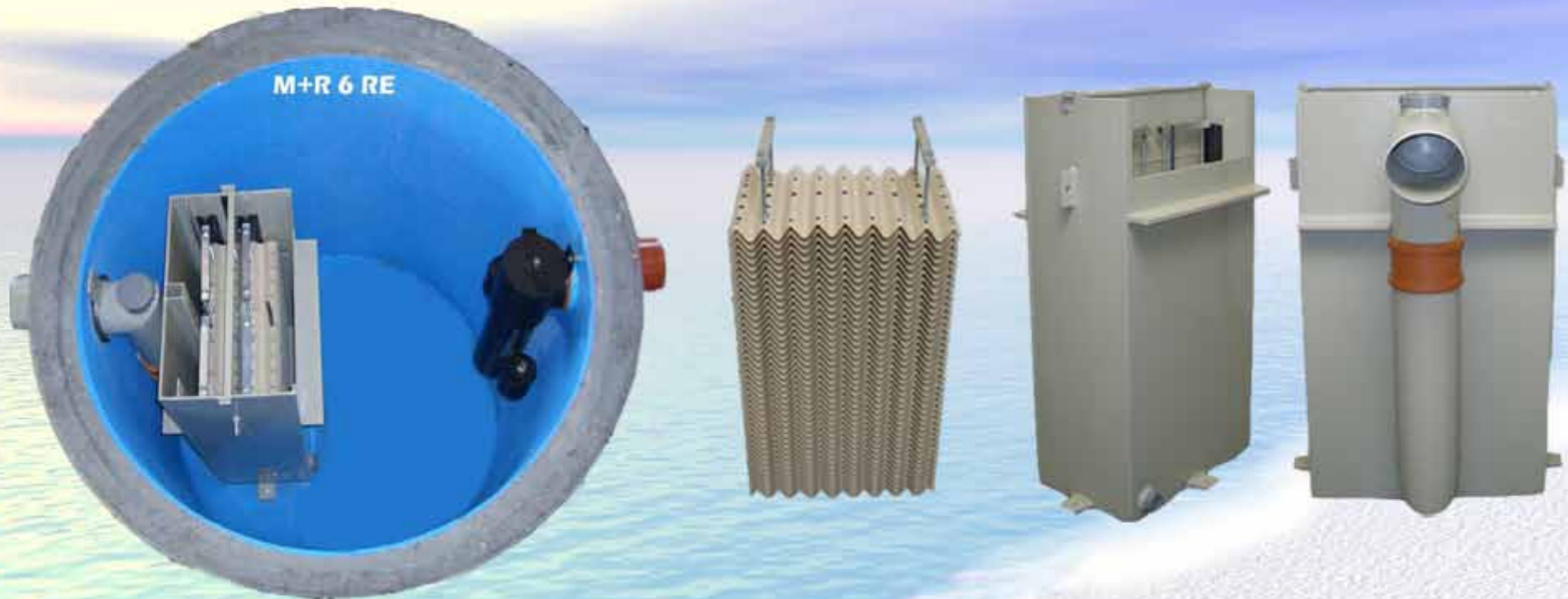
FREYLIT

UMWELTECHNIK GmbH

OIL SEPARATOR INSTALLATION KITS

CONFORMING TO EUROPEAN STANDARD ACCORDING TO EUROPEAN NORM EN858

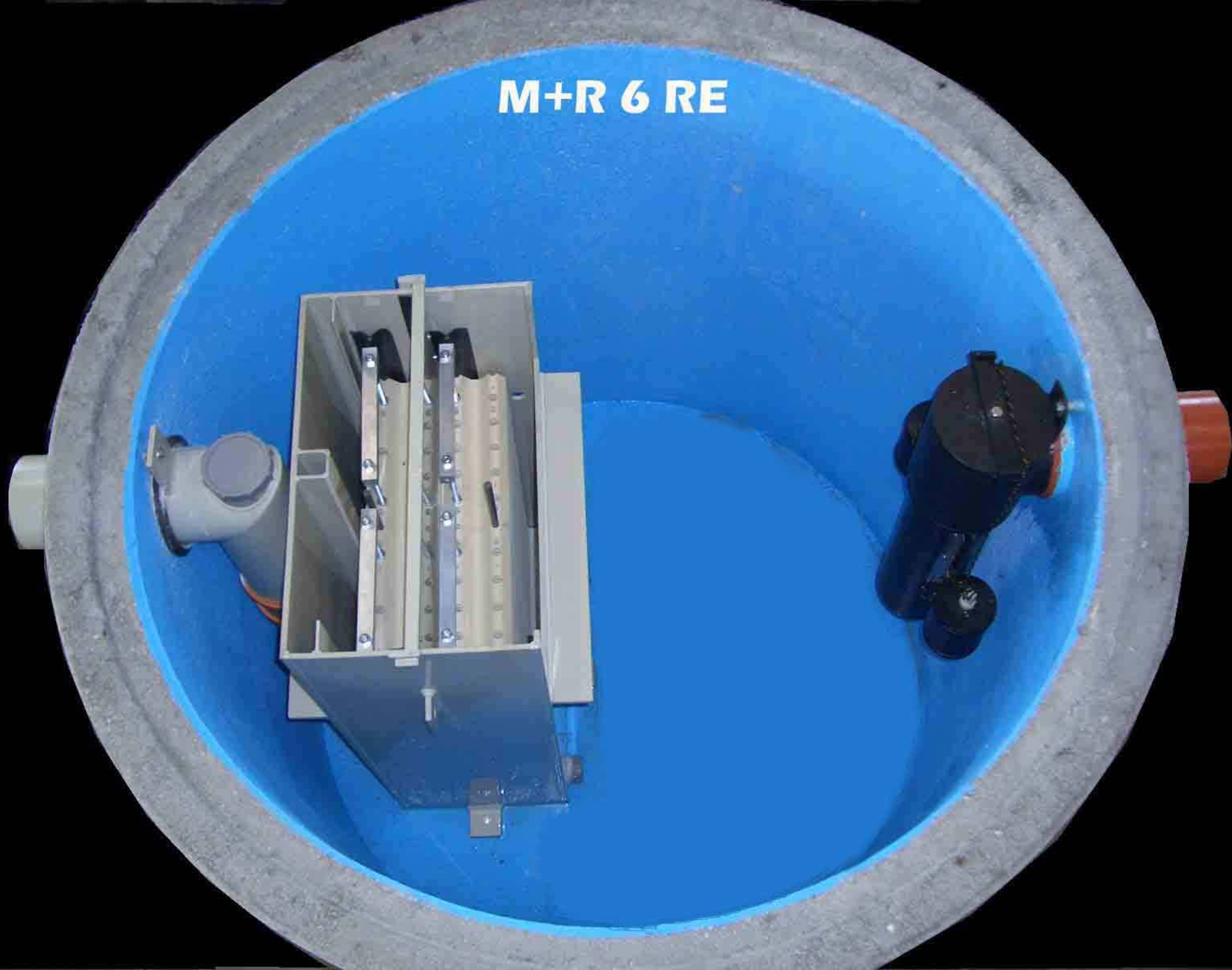
ALSO FOR ADAPTING EXISTING OIL SEPARATORS



THESE OIL SEPARATOR INSTALLATION KITS FIT INTO ALMOST ANY

STANDARD OR EXISTING TANKS / CONCRETE PITS , OR CAN BE CUSTOMIZED ON REQUEST.

M+R 6 RE

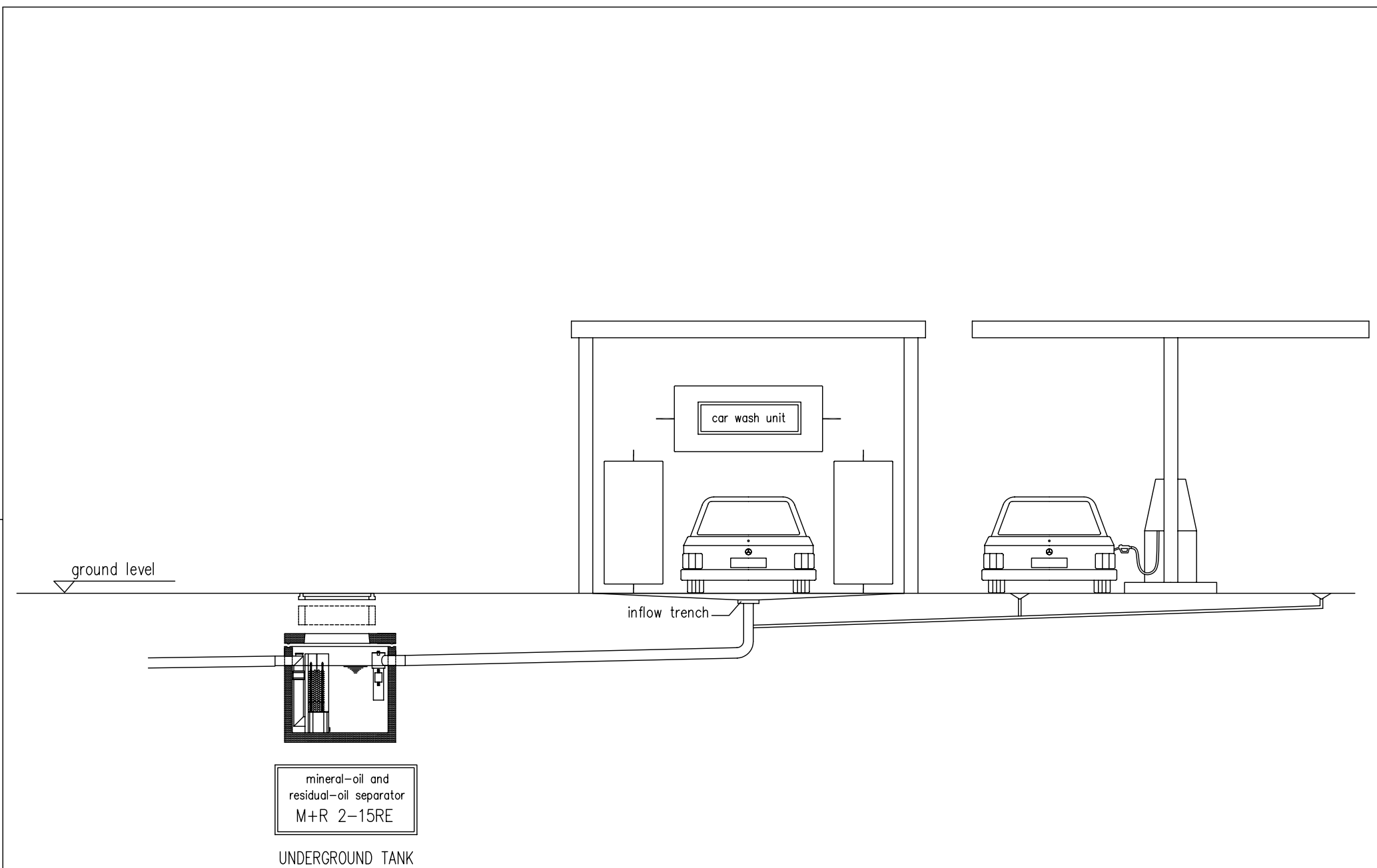



FREYLIT

UMWELTECHNIK GmbH

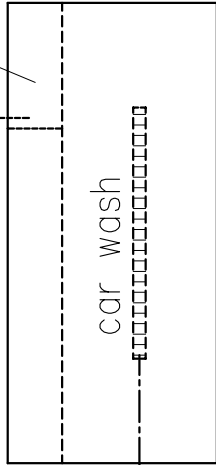
M+R - RE





 pipe connection plan	type:
	drawing no.: TsSeite
	date: 08.03.05

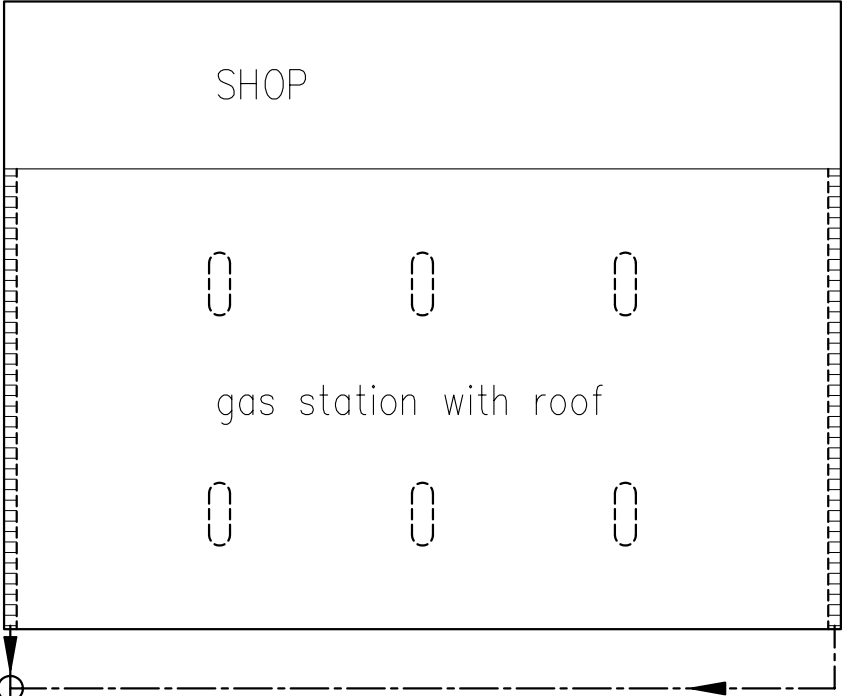
Recycling unit



Storage tank for recycling unit

sampling point in the oil water separator

oil separator M+R 2-15RE
sewage



SHOP



gas station with roof



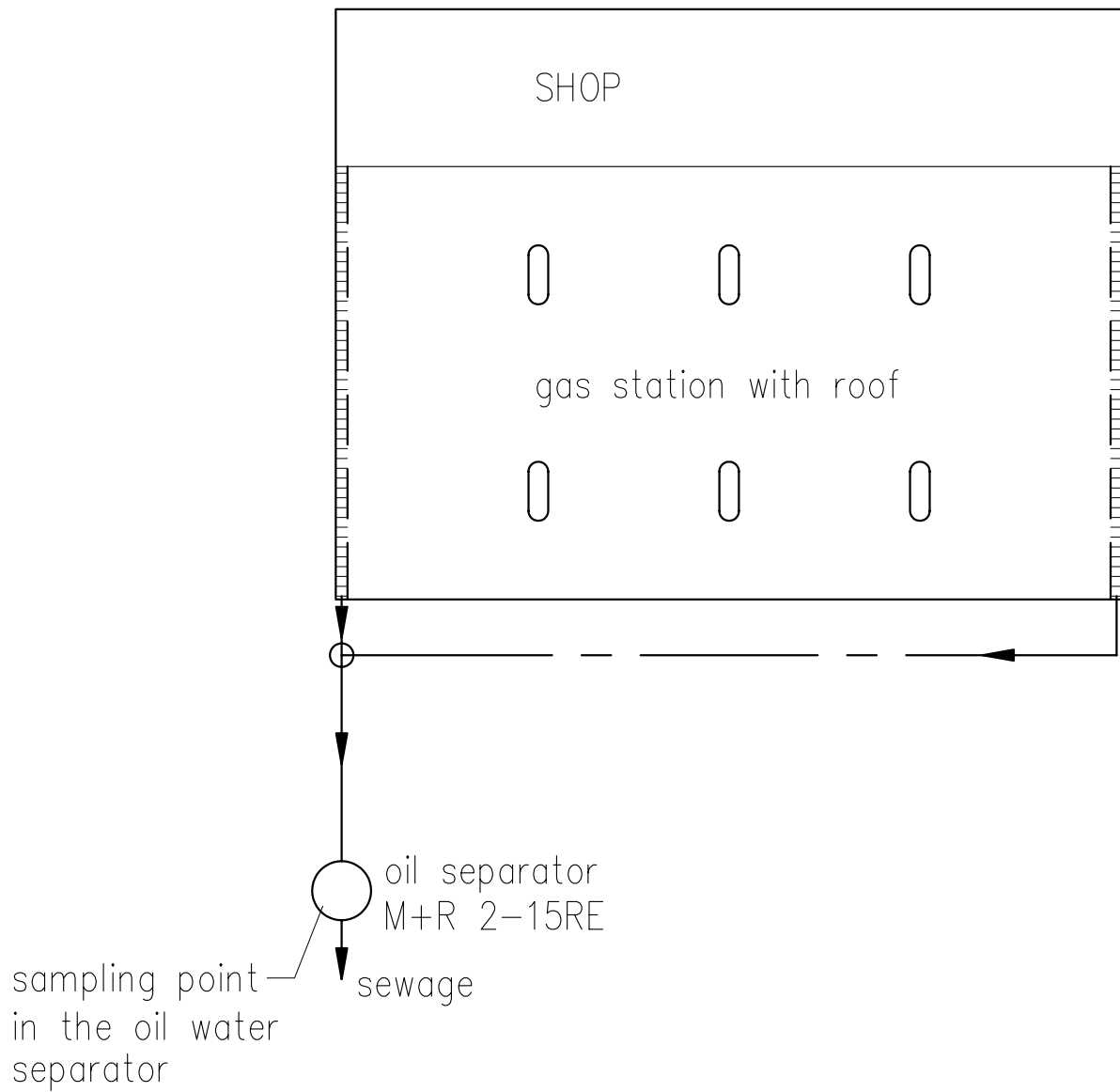
	date:	name:
constr.	11.03.98	Mei
contr.		



type:

oil water separator for car wash system and rain water from the gas station

drawing no.:	53.99.525		
modif.	c	d	e
date:	22.5.98	5.10.98	8.03.05



	date:	name:	PREVLIT	type:			
constr.	11.03.98	Mei		drawing no.: 53.99.526			
contr.							
	oil water separator for rain water from the gas station			modif.	c	d	e
				date:	22.5.98	5.10.98	8.03.05

Calculating the size of Mineral Oil Separators according to European Norm EN858

1) Oil Separators for service station forecourts and manual (HP) car washes

Design Assumption : **No car washing will take place when it is raining.** Definition of "forecourt area" is ground area where hydrocarbons (fuel, oil, etc.) can spill or drip within the containment boundaries of the waste-water gutters used to drain these areas.

Pos 1) Calculating the flow rate of wash water

For the FIRST HP washing device 2 l/sec
for every additional HP washing device 1 l/sec
multiplied by factor 2 (constant)

For example :
a site has 3 manual wash bays, therefore,

First HP washing device..... 2 l/sec
Second HP washing device.....1 l/sec
Third HP washing device..... 1 l/sec
.....
Total..... 4 l/sec ..x factor 2 = **8 litres/second**

Pos 2) Calculating the size of oil separator for rainfall conditions

a) For open forecourt areas (without canopy)
calculate **1.5 l/sec flow rate of oil separator for every 100m²** of containment area.

For example
Open forecourt areas(without canopy) = 300 m² = 3 x 1,5 = 4,5 l/sek(NG)

b) For forecourt areas covered by a canopy use the following formula :

$$\text{Calculation area} = \frac{C (\text{circumference of canopy}) \times H (\text{height of canopy})}{2}$$

For example :

Long: 30 m
wide: 20 m
high: 6 m
 $U = 100 \text{ m} \times h = 6 \text{ m} = 600 : 2 = 300 = 3 \times 1,5 = \mathbf{4,5 \text{ l/sek (NG)}}$

Pos 2a)..... 4,5 l/sek(NG)
 Pos 2b). 4,5l/sek(NG)

Pos 2)..... = 9,0 l/sek(NG)

The correct choice of flow rate and nominal size of oil separator (NG) in the above example is the LARGER of Pos 1) and Pos 2) (rain OR washing).
 In this case Pos 2) "rain" and an oil separator with nominal size **NG9 and flow rate 8 l/sec** is therefore required.

Calculating the size of the SILT CHAMBER = NG x 200

2) Oil Separators for Automatic car washes, manual (HP) car washes, Truck washes and service station forecourts

Design Assumption : No car washing will take place when it is raining. Definition of "forecourt area" is ground area where hydrocarbons (fuel, oil, etc.) can spill or drip within the containment boundaries of the waste-water gutters used to drain these areas.

Pos 1) Calculating the flow rate of wash water

For the automatic car wash 2 l/sec
 for every additional HP washing device 1 l/sec
 multiplied by factor 2 (constant)

For example :

A site has one automatic car wash and two manual wash bays, therefore,

for automatic car wash2 l/sec
 First HP washing device..... 1 l/sec
 Second HP washing device.....1 l/sec

.....
 Total 4 l/sec x factor 2 = **8 litres/second**

Pos 2) Calculating the size of oil separator for rainfall conditions

A service station has a total forecourt area of 700m², on which a canopy is standing

a) **canopy area** : Long: 30 m , wide: 20 m = **600 m²**

For forecourt areas **covered by a canopy** use the following formula :

$$\text{Calculation area} = \frac{C (\text{circumference of canopy}) \times H (\text{height of canopy})}{2}$$

Canopy area :

Long: 30 m
wide: 20 m
high: 6 m

$$U = 100 \text{ m} \times h = 6 \text{ m} = 600 : 2 = 300 = 3 \times 1,5 = 4,5 \text{ l/sek (NG)}$$

b) For remaining open forecourt area :

$$\text{total forecourt area of } 700\text{m}^2 - 600\text{m}^2 \text{ (covered by a canopy)} = \\ = 100\text{m}^2 \text{ remaining open forecourt}$$

For **open forecourt areas (without canopy)**

calculate **1.5 l/sec flow rate of oil separator for every 100m²** of containment area.

$$\text{Open forecourt areas (without canopy)} = 100 \text{ m}^2 = 1 \times 1,5 = 1,5 \text{ l/sek(NG)}$$

Pos 2a)..... **4,5 l/sek(NG)**

Pos 2b). **1,5l/sek(NG)**

.....
Pos 2)..... = 6,0 l/sek(NG)

The correct choice of flow rate and nominal size of oil separator (NG) in the above example is the LARGER of Pos 1) and Pos 2)(rain OR washing). In this case washing, and an oil separator with nominal size **NG8 and flow rate 8 l/sec** is therefore required.

Calculating the size of the SILT CHAMBER :

1) Automatic car wash 5000 l

2) If, in addition to the automatic car wash, manual car washes are also used then the size of the silt chamber is calculated by multiplying the nominal size of the HP washing devices (NG) by **factor 200** and adding the result to 5000l (for the automatic car wash).

Example :

Automatic car wash 5000l

2 HP washing devices 2 x 1 l/sec x **factor 2** = 4 l/sec x **factor 200**..... 800l

.....
Total volume of silt chamber 5800l

3) If only HP washing devices are used, without automatic car wash, calculation should be as follows :

a) HP device for passenger cars..... resulting nominal size (NG) x **factor 200**

b) **HP device for trucks.....resulting nominal size (NG) x factor 300**

4) Calculating the silt chamber for rain water = nominal size (NG) x factor 200

Design Assumption : No car washing will take place when it is raining.