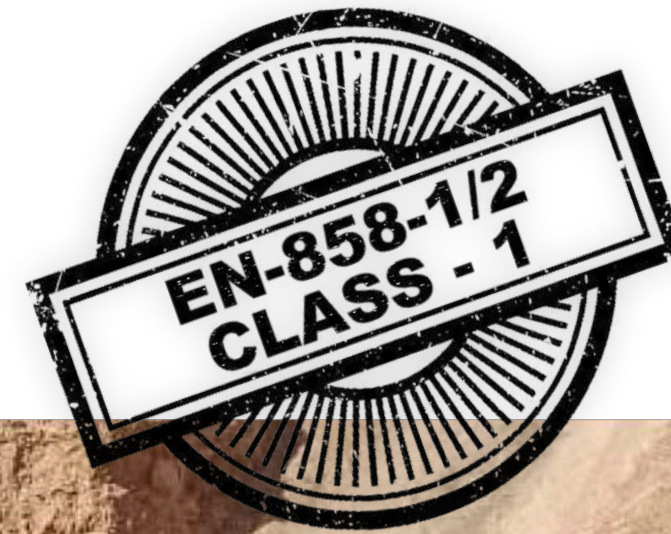
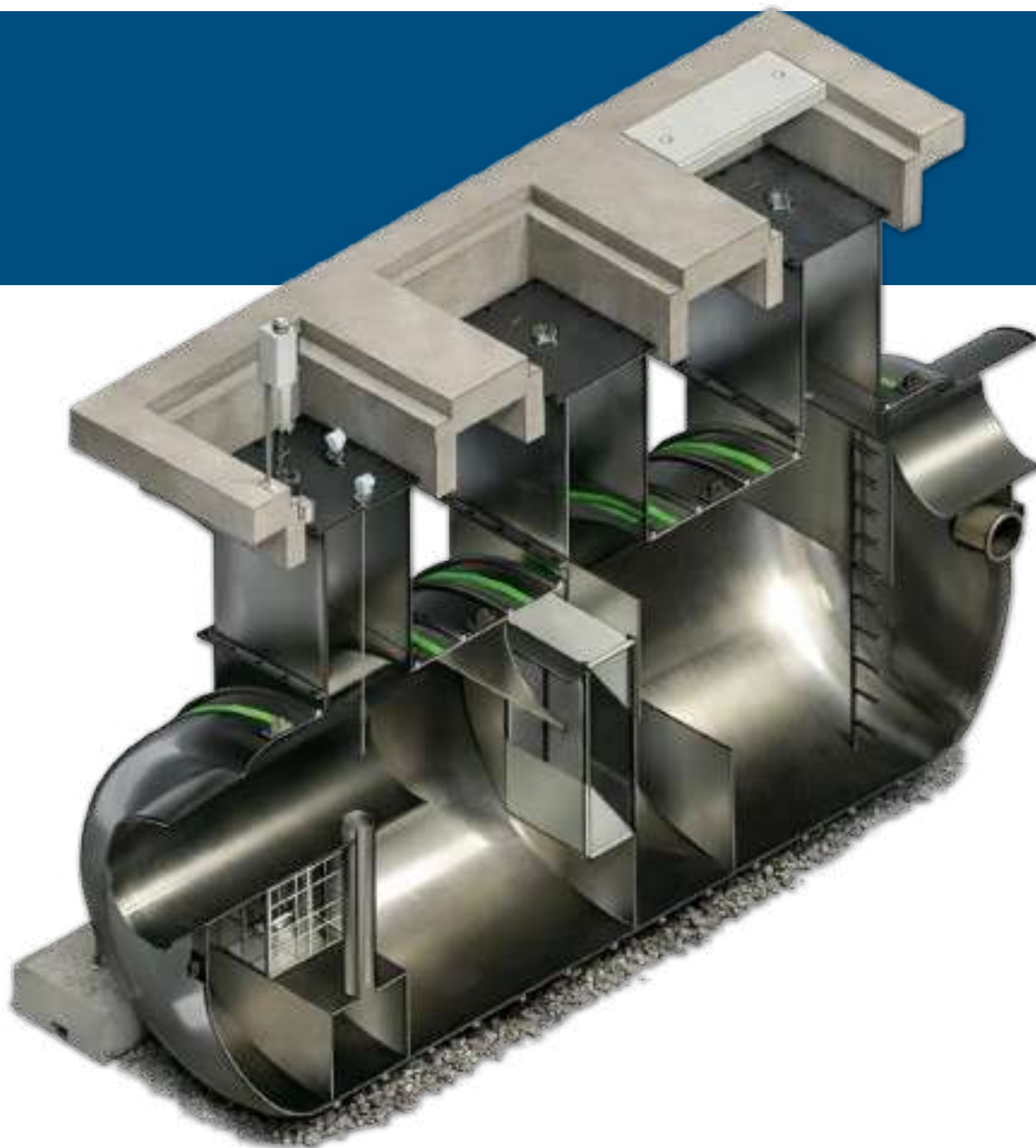


BPOWS+

**BYPASS UNDERGROUND
OIL/ WATER SEPARATORS - FRP**



BPOWS+ OIL/ WATER



BPOWS+ The Bypass Oil Water Separators are engineered to collect sand, grit, grease and free oil (hydrocarbons and other petroleum products) from storm water runoff, spills and vehicle maintenance operations. They are equipped with internal bypass to direct peak flow without disturbing the collected grit/ dirt and oil inside the separator.

FUNCTION:

The Oil/ Water Separator is a stationary underground, stormwater treatment vessel, filled with water. Internal baffles and inclined parallel plates plus additional cartridge coalescers to accelerate the oil/ water separation process. Waste accumulates within the separator while effluent is discharged by gravity. The system is designed for access from above for observation, maintenance and cleaning.

OUR EXPERIENCE

We offers customized Oil Separator Tank packages for the reduction of oil and gas in storm and drainage water. Our company maintains project management and quality assurance standards that are in compliance with the requirements of the leading oil and petrochemical companies across the globe.

We optimized process design and comprehensive project management can produce a cost-effective package.

CHARACTERISTICS:

- Designed according to API Standard and EN 858-1/2
- Outlet parameters lower than 5 ppm (Class 1) - Can drain to surface water.
- Includes a dedicated sand and solids settling chambers.
- Includes Inclined Parallel Plates in Stainless Steel.
- Oil and hydrocarbon separation and solids settling chambers.
- Tanks are constructed in first quality materials to BS 3532, BS 3691/BS 2782 or equivalent.
- Engineered to the highest standards BS 4994/BS EN 976.
- Accumulation of oil and hydrocarbon on water surface.
- Coalescing Cartridges in Stainless Steel with large specific surface: 433 m²/m³.
- Polishing coalescing cartridge on final stage.
- Oil removal by upper manhole.
- Internal Bypass to direct Peak Flow during storm to outlet of tank without affecting accumulated dirt and oil.
- Level sensors for oil interface layer (option)
- Design life of over 50 years in accordance with BS EN 976.
- 25 year warranty against internal corrosion or structural failure.
- Rigorous quality control procedures at all stages of manufacture for each serial numbered tank.
- Quick and simple installation procedures.
- Detailed instructions with each tank.

PARAMETER	PERFORMANCE BPOWS+ MODEL
EN 858 1/2	✓
Class I (Oil < 5 ppm)	✓
Stokes' Law	✓
ASTM D-4201	✓
UL 1316	✓
API 421	✓
USCG 46CFR 162.050	✓
UL 2215 - Oil Separators	✓
Intermittent Flow	✓
Continuous Flow	✓

BPOWS+ Bypass Oil/ Water Separators are unparalleled in performance, structural strength, product compatibility, and corrosion resistance. With hundreds of high-performance separators in commercial operation throughout the world, Our patented oil/ water separators have a proven record of reliability.

BPOWS+ Bypass Oil/ Water Separators handle a wide range of oily discharges from paved surfaces at petroleum, industrial, military, commercial, and municipal facilities. Most common applications include facilities with vehicle fueling, repair/ maintenance areas and wash pads.

BPOWS+ Oil/ Water Separators come in a variety of capacities and designs, available in either a cylindrical or rectangular vessel. Single and double-wall construction is available for both underground and aboveground applications.

Our engineers have designed a functional means of primary separation that not only meets the international and national oil and grease discharge limitation requirements, but also surpasses them. And unlike other oil/ water separators, Our separators are easy to operate and maintain!

Each Oil/ Water separator is backed by our tank's professional design, engineering, fabrication, delivery and service. **BPOWS+** separators come directly from UIHT's manufacturing facilities. This practice ensures complete quality control, from expert design to timely delivery by our experienced drivers. Construction and performance certification of the separator in strict accordance with Underwriters' Laboratories Subject SU-2215 is also available.



INTERCEPTORS

BPOWS+ Oil/ Water Separators are used specifically for the removal of free floating oil, grease, and settleable oily coated solids from oil/ water discharges associated with many types of industrial facilities. Designed to remove oils with a specific gravity less than 0.95, high performance separators from 2,000 ppm oil/ grease discharge (**BPOWS+**) down to 5 ppm.

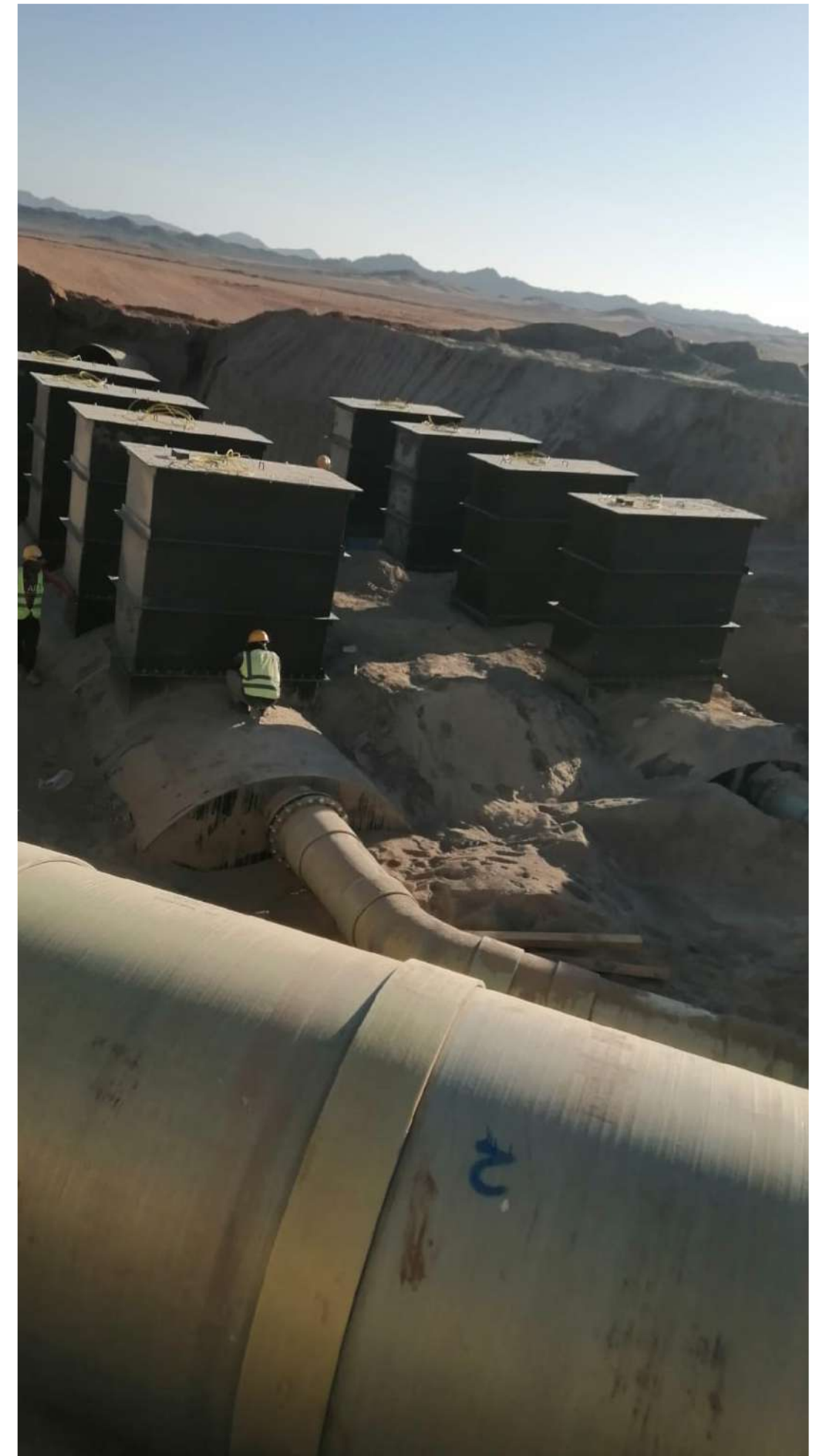
APPLICATION

Oil drippings and spills from parking lots, driveways, oil terminals, airplane aprons, runways, and other vehicular traffic surfaces are being washed into our water supplies by rainwater, creating serious environmental concerns.

BPOWS+ Oil/ Water Separators are designed to meet EPA and local Saudi Arabian guidelines for rainwater runoff control.

ELECTRONICS

Oil/ Water Separator monitoring and control systems can be configured to satisfy a wide range of customer requirements. Control panels, sensors, probes and gauges are available for double-wall and single-wall oil/water separator systems as well as for single-tank or multiple-tank installations. We carry a full line of pump controls, inlet and outlet pumps, and waste oil pumps. We can package the right model with the proper electronics so when the tank arrives the only thing left to do is connect the piping.



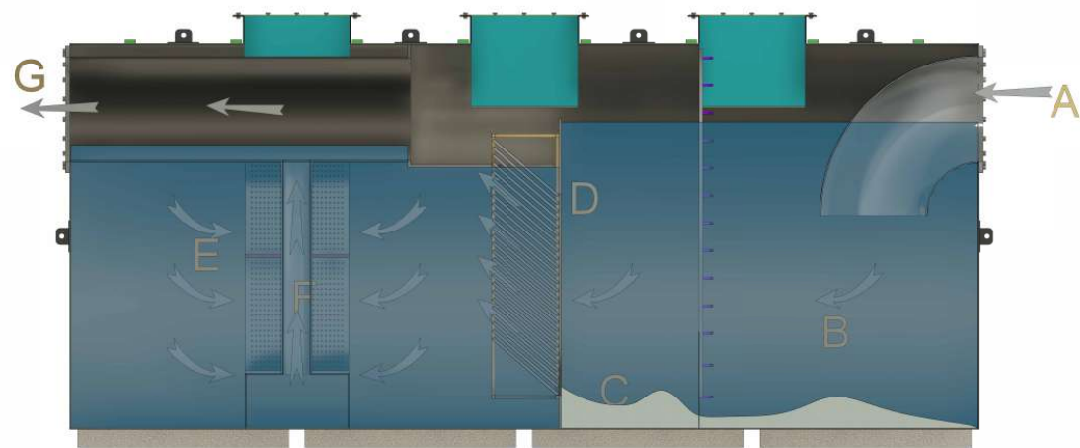
BPOWS+ Oil/ Water Separators are competitively priced and are readily available from a network of knowledgeable regional factory representatives and distributors. In addition, we provide a wide array of support information, including an engineering manual with detailed information, specifications, and engineering drawings for selecting and specifying oil/water separators and accessories. You can depend on us to provide you with environmentally safe and structurally sound oil water separator solutions well into the 21st century and beyond.

In addition, all protected **BPOWS+** Oil/ Water Separators carry a 30-year limited warranty against corrosion and structural failure.

From the solid heavyweight construction to the patented design and operating simplicity, a **BPOWS+** Oil/ Water Separator is a product of experience, backed by a company with 15+ years of private ownership and management.

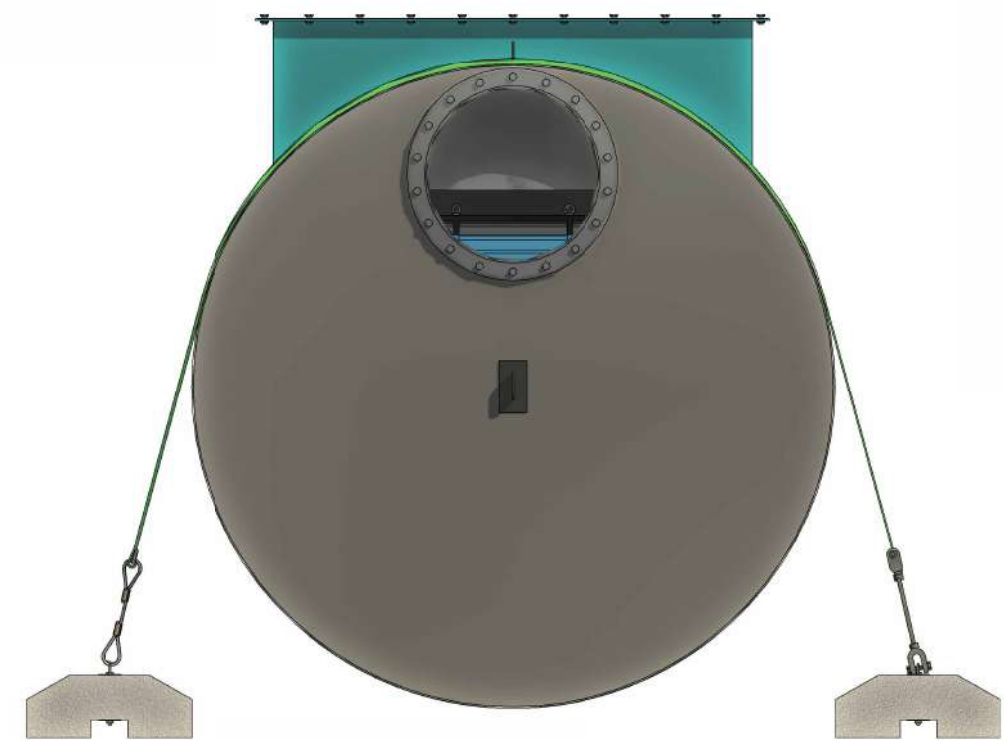
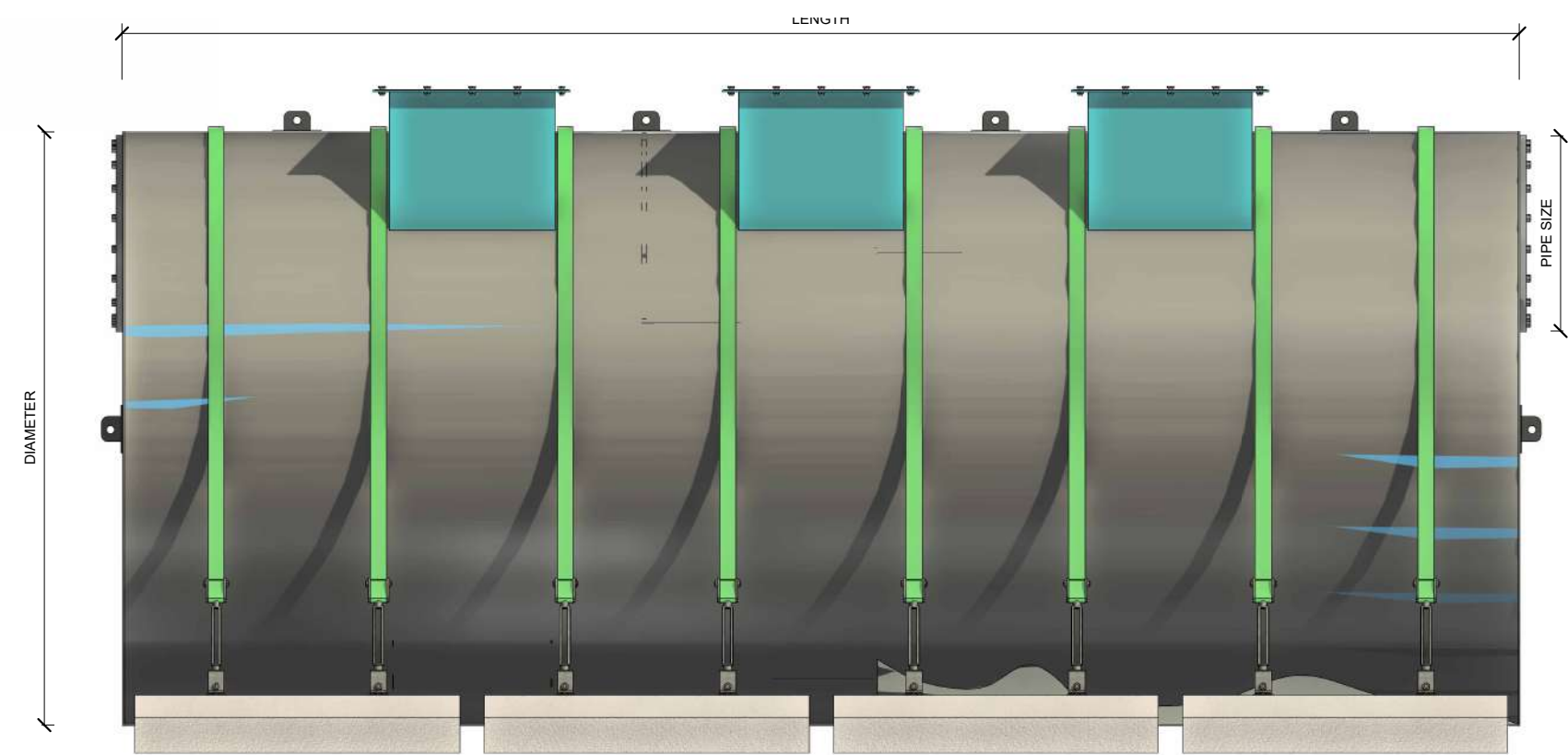
ADDITIONAL OPTIONAL FEATURES:

• Oil and Hydrocarbon Detection Alarm. • Oil maximum level alarm. • Maximum Solids level alarm to avoid clogging.	• Cross-Flow Baffle • Coalescer Plate Packs • Oil Stop Valve	• Anchor Straps • Deadman Anchor System • The unique cross flow design of the BPOWS+ model results in the most efficient use of the parallel plate pack.	• Mechanical skimmer for separated oil removal. • Single-wall, Double-Wall Separator • Manway Extension • Tank Sump
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BASIIA MODEL BPOWS+ CLASS-1 BYPASS OIL WATER SEPARATORS

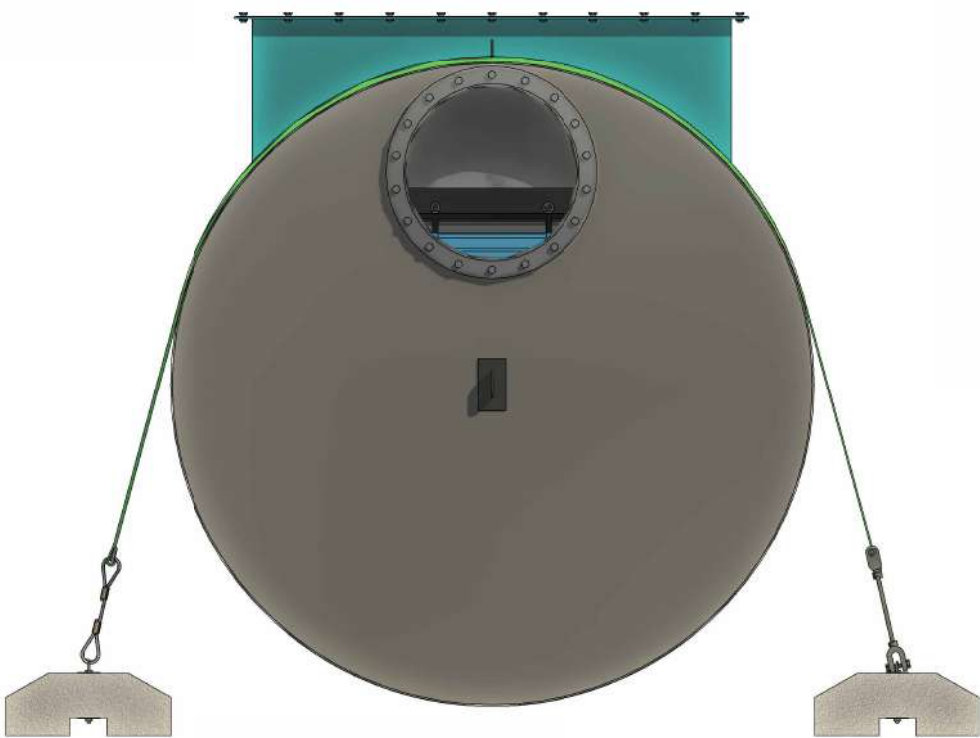
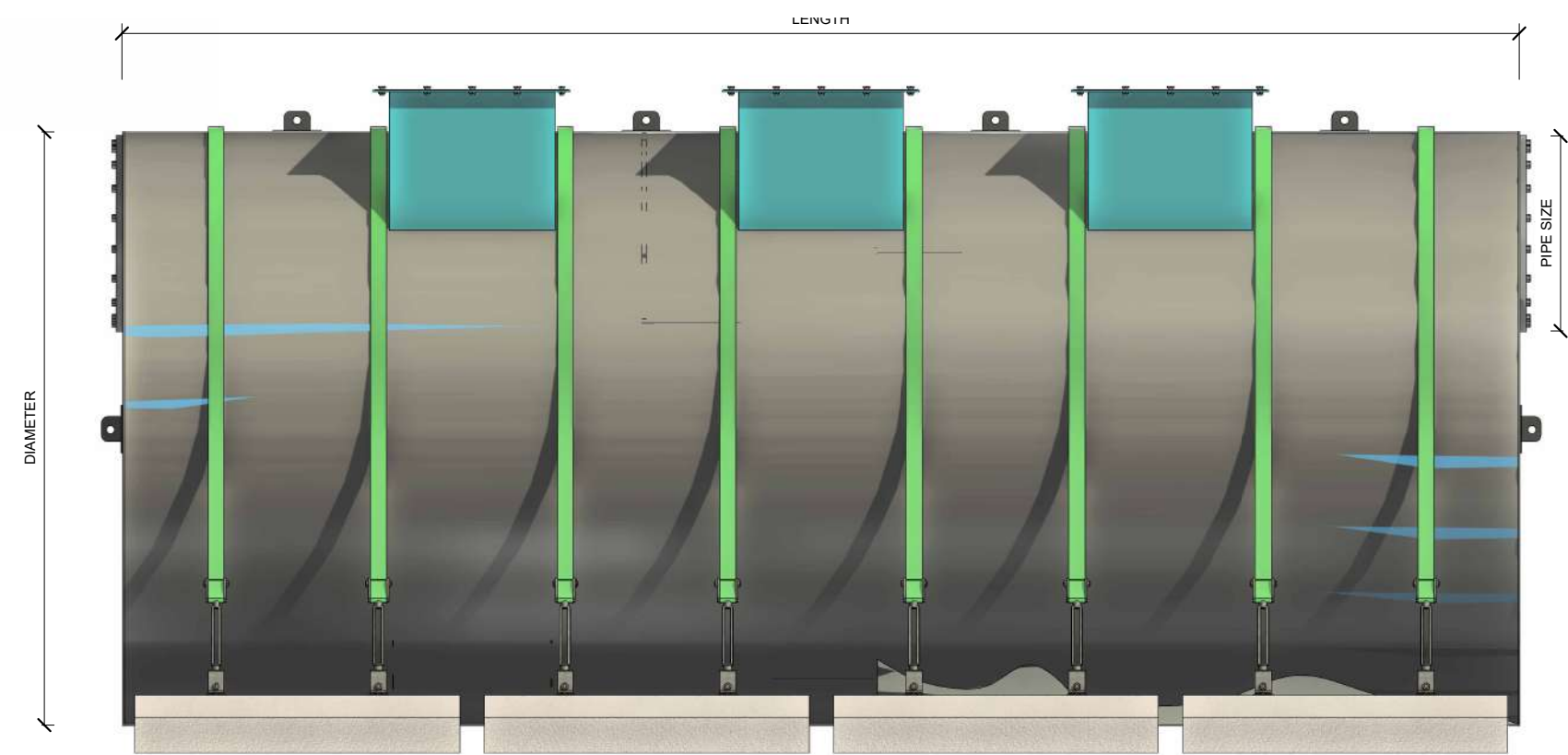
Compliant to the European Standard SALES@BASIIA.COM EN 858-1:2002, the Environment Agency’s Pollution Prevention Guidelines PPG3 and the Construction Production Regulations



Model	Nominal Size (NSB) Flow (LPS)	Peak Flow (LPS)	Oil Storage (Liters) NSBx15	Silt Storage (Liters) NSBx100	Diameter (mm)	Length (mm)	Volume (m3)	Retention Time (Minutes)	Inlet/ Outlet (DN) (Max)
DIAMETER: 1800MM									
BPOWS-1875-030	30	300	450	3,000	1,800	5,400	13.73	7.63	550
BPOWS-1875-035	35	350	525	3,500	1,800	6,300	16.02	7.63	550
BPOWS-1875-040	40	400	600	4,000	1,800	7,200	18.31	7.63	550
BPOWS-1875-045	45	450	675	4,500	1,800	8,100	20.60	7.63	550
BPOWS-1875-050	50	500	750	5,000	1,800	9,000	22.89	7.63	550
BPOWS-1875-055	55	550	825	5,500	1,800	9,900	25.18	7.63	550
DIAMETER: 2250MM									
BPOWS-2250-060	60	600	900	6,000	2,250	6,750	26.82	7.45	650
BPOWS-2250-070	70	700	1,050	7,000	2,250	7,875	31.30	7.45	650
BPOWS-2250-080	80	800	1,200	8,000	2,250	9,000	35.77	7.45	650
BPOWS-2250-090	90	900	1,350	9,000	2,250	10,125	40.24	7.45	650
BPOWS-2250-100	100	1,000	1,500	10,000	2,250	11,250	44.71	7.45	650
BPOWS-2250-110	110	1,100	1,650	11,000	2,250	12,375	49.18	7.45	650

BASIIA MODEL BPOWS+ CLASS-1 BYPASS OIL WATER SEPARATORS

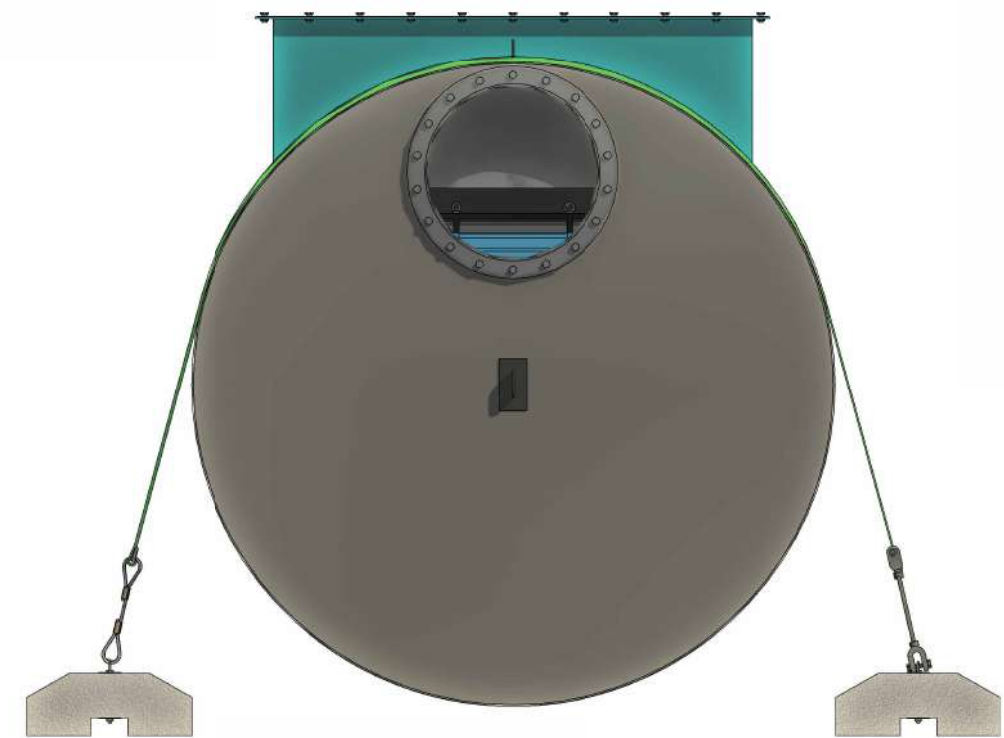
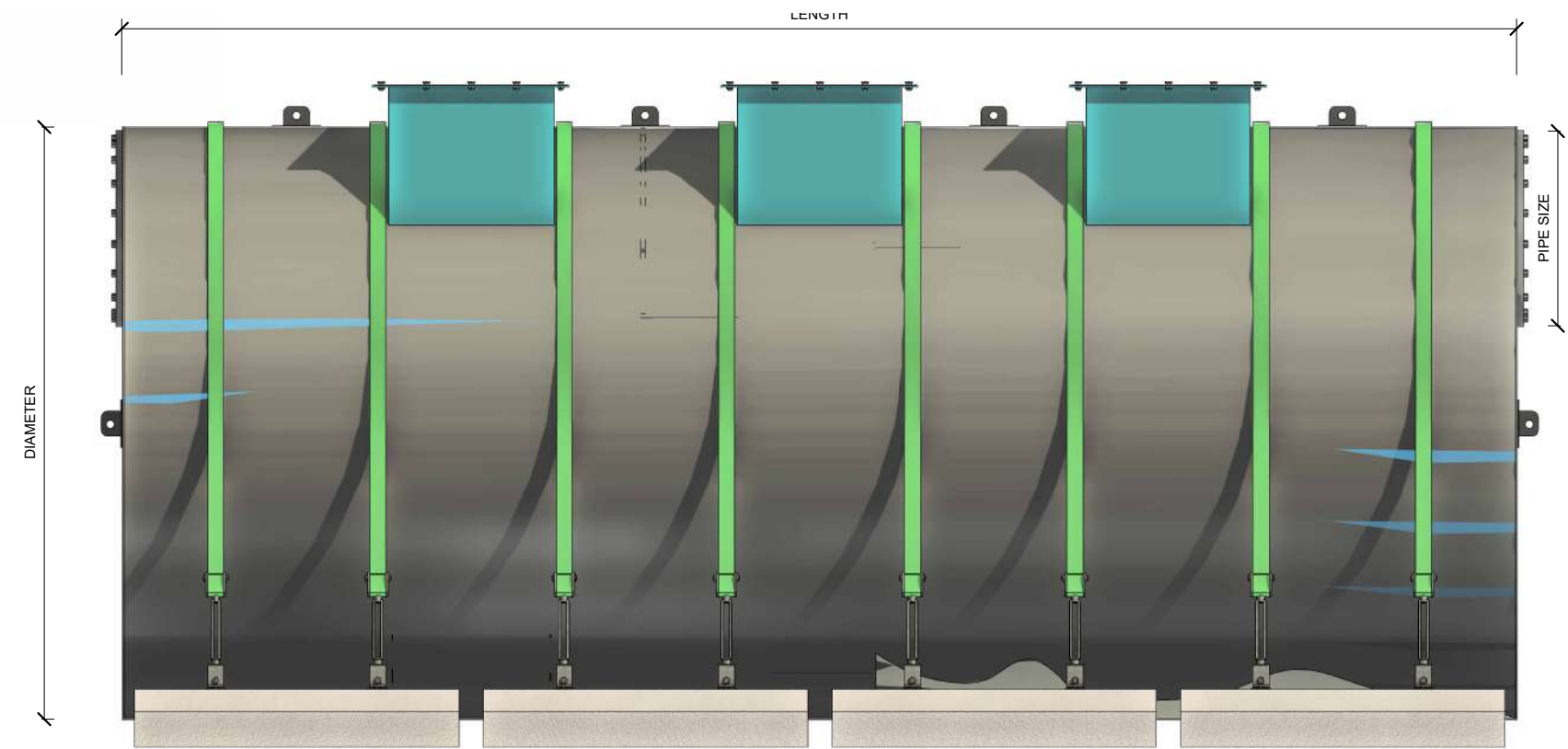
Compliant to the European Standard SALES@BASIIA.COM EN 858-1:2002, the Environment Agency’s Pollution Prevention Guidelines PPG3 and the Construction Production Regulations



Model	Nominal Size (NSB) Flow (LPS)	Peak Flow (LPS)	Oil Storage (Liters) NSBx15	Silt Storage (Liters) NSBx100	Diameter (mm)	Length (mm)	Volume (m3)	Retention Time (Minutes)	Inlet/ Outlet (DN) (Max)
DIAMETER: 2700MM									
BPOWS-2700-100	100	1,000	1,500	10,000	2,700	8,100	46.35	7.73	800
BPOWS-2700-120	120	1,200	1,800	12,000	2,700	9,450	54.08	7.51	800
BPOWS-2700-140	140	1,400	2,100	14,000	2,700	10,800	61.80	7.36	800
BPOWS-2700-160	160	1,600	2,400	16,000	2,700	12,150	69.53	7.24	800
BPOWS-2700-180	180	1,800	2,700	18,000	2,700	13,500	77.26	7.15	800
BPOWS-2700-200	200	2,000	3,000	20,000	2,700	14,850	84.98	7.08	800
DIAMETER: 3600MM									
BPOWS-3650-250	250	2,500	3,750	25,000	3,600	10,800	109.87	7.32	1,100
BPOWS-3650-290	290	2,900	4,350	29,000	3,600	12,600	128.19	7.37	1,100
BPOWS-3650-340	340	3,400	5,100	34,000	3,600	14,400	146.50	7.18	1,100
BPOWS-3650-380	380	3,800	5,700	38,000	3,600	16,200	164.81	7.23	1,100
BPOWS-3650-420	420	4,200	6,300	42,000	3,600	18,000	183.12	7.27	1,100
BPOWS-3650-460	460	4,600	6,900	46,000	3,600	19,800	201.44	7.30	1,100

BASIIA MODEL BPOWS+ CLASS-1 BYPASS OIL WATER SEPARATORS

Compliant to the European Standard SALES@BASIIA.COM EN 858-1:2002, the Environment Agency’s Pollution Prevention Guidelines PPG3 and the Construction Production Regulations



Model	Nominal Size (NSB) Flow (LPS)	Peak Flow (LPS)	Oil Storage (Liters) NSBx15	Silt Storage (Liters) NSBx100	Diameter (mm)	Length (mm)	Volume (m3)	Retention Time (Minutes)	Inlet/ Outlet (DN) (Max)
DIAMETER: 4150MM									
BPOWS-4150-380	380	3,800	5,700	38,000	4,150	12,450	168.32	7.38	1,400
BPOWS-4150-450	450	4,500	6,750	45,000	4,150	14,525	196.37	7.27	1,400
BPOWS-4150-520	520	5,200	7,800	52,000	4,150	16,600	224.43	7.19	1,400
BPOWS-4150-590	590	5,900	8,850	59,000	4,150	18,675	252.48	7.13	1,400
BPOWS-4150-660	660	6,600	9,900	66,000	4,150	20,750	280.53	7.08	1,400
BPOWS-4150-720	720	7,200	10,800	72,000	4,150	22,825	308.59	7.14	1,400

PERFORMANCE ADVANTAGES

- Consistently removes large quantities of non-emulsified organic contaminants to non-detectable levels or levels meeting regulatory codes.
- Especially effective in removing oil and grease, total petroleum hydrocarbons, and dissolved hydrocarbons.
- Eliminates or reduces waste volume, mobility and toxicity.
- Uses no anthracite coal fillers
- Enhanced coalescer system is comprised of oleophilic plates to maximize separation and minimize maintenance.
- Removable plates simplifies routine cleaning.
- Removes free floating oils and settleable solids for oil/ water mixtures to achieve 5 ppm effluent quality
- Includes a 25-year internal/ external corrosion and structural warranty.

SEPARATOR DESIGN & SIZING

Since each site is unique, the most effective approach is to analyze each situation and design the system accordingly. Our engineering staff can help determine the best fit for your technical considerations and site specific needs:

- Inlet flow rates
- Inlet/ Outlet Concentration
- Effluent Quality
- Specific Gravity of Contaminants

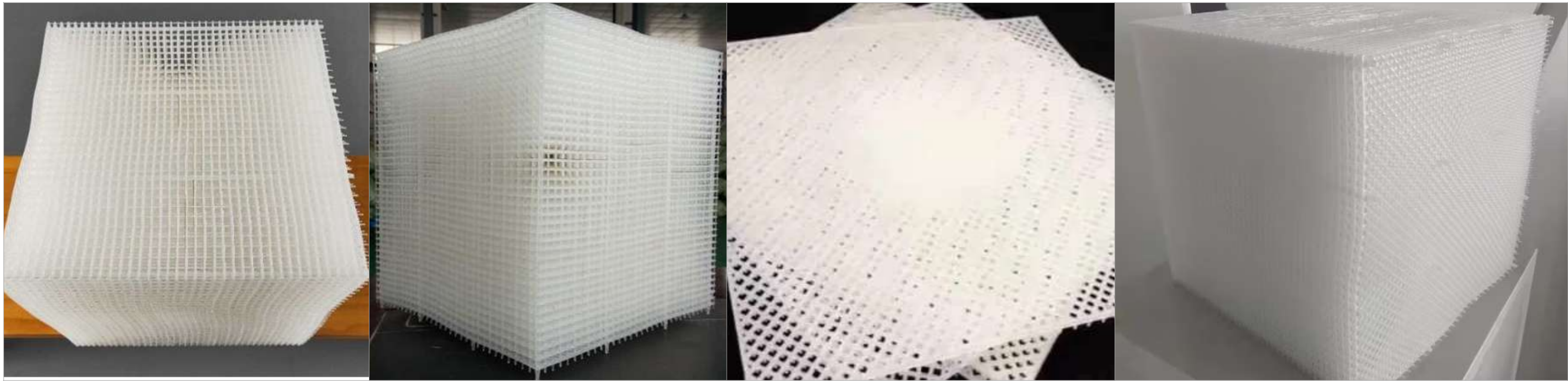


BPOWS+ separators are sized primarily on flow rates. A complete list of flow rate plate pack options are available. Contact your our representative for more information.



PARALLEL PLATE PACK

This type of equipment uses gravity separation similar to the skim vessels, but in addition it promotes the coalescence of oil droplets. Bigger droplets flow faster to the phase interface. These devices resemble skim vessels retrofitted with the plate interceptors. Corrugated Plate Interceptors (CPI) and cross-flow devices are the most effective plate coalescer that are able to separate oil droplets down to sizes of 30-50 μm . The main difference between CPI and cross-flow devices is that the plate axes of the corrugations are parallel to the direction of flow in CPI and are perpendicular in the cross-flow devices.

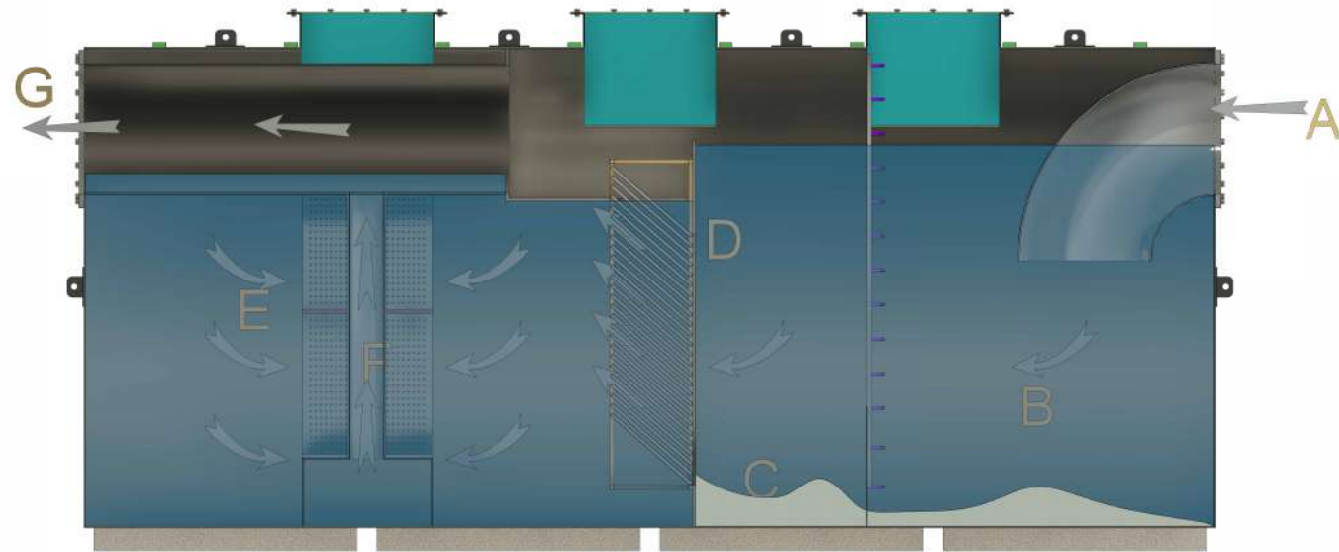


COALESCING SEPARATION MEDIA

When certain materials are placed in the wastewater flow, removal efficiencies of oil increase due to impingement on their surface. Plastic media is particularly effective because of its oleophilic (oil attracting) characteristics. As fine oil droplets impinge upon or pass close to the plastic surface, they are attracted to it and adhere. Additional droplets continue to be attracted and coalesce or merge with previous droplets to produce much larger droplets. At a point, the droplets are large enough to break free and rise rapidly to the surface where they are skimmed or decanted. This coalescing action allows removal of smaller droplets than is possible with a straight gravity separator.

The effectiveness of any particular coalescing media is governed by several variables: density, available surface area, velocity, and direction of flow and shape of the media. All of these variables influence the potential contact area, so it becomes of particular importance to form the media properly to maximize contact while minimizing blinding. "The media pack was designed with consideration of all these factors. "The media pack provides greater coalescing and solids separation area than any other media currently available. "LATINO" patented shape and specific spacing of the plates provides maximum protection from blinding, while providing a tortuous path through which the water must pass. This continuous change of direction insures a high level of oil droplet contact on the cube surface with resultant coalescence and oil removal.

BPOWS+ SYSTEM PROCESS

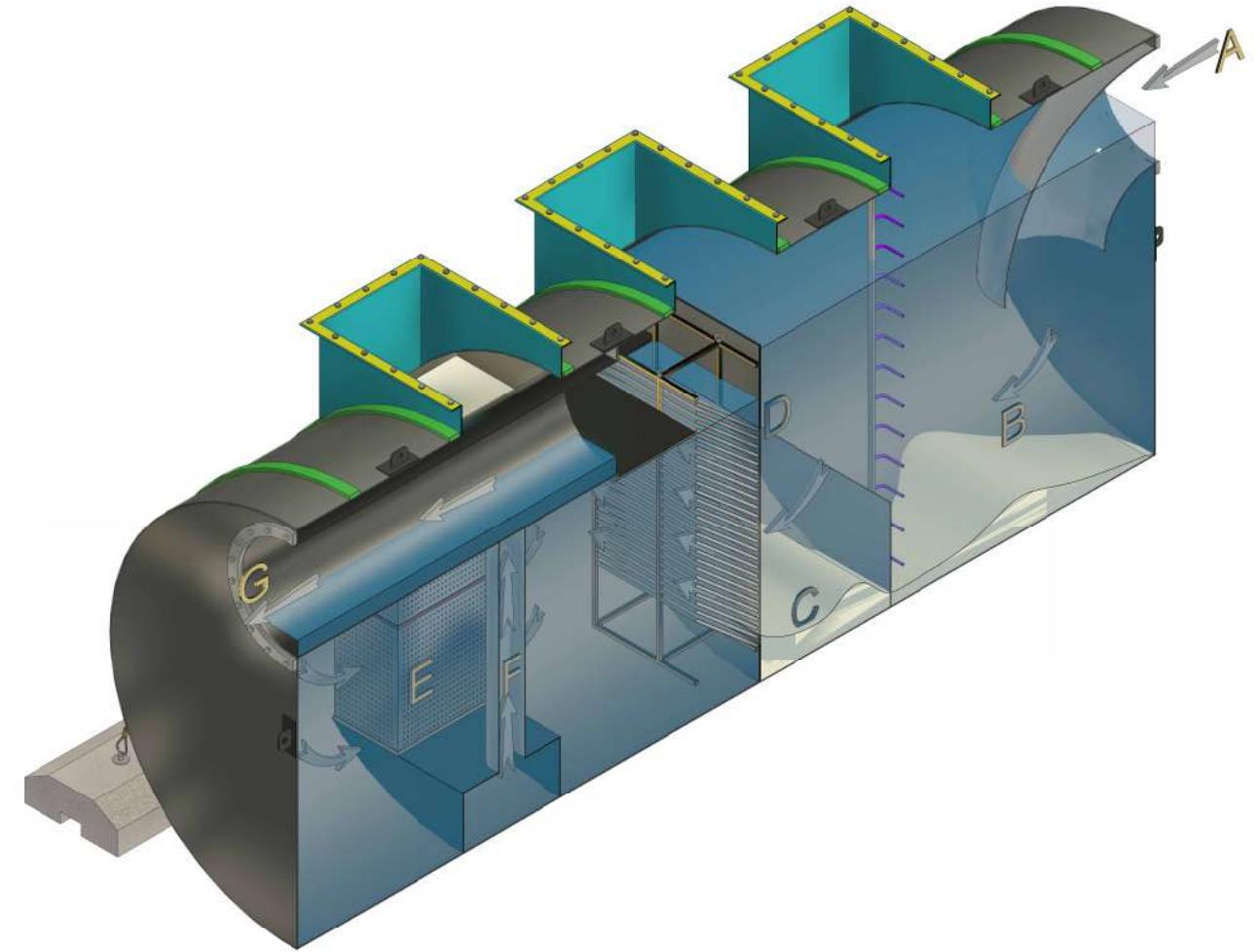


Diffusion Baffle (B)

- The water flow inside the vessel through pipe (A). The velocity head diffusion baffle (B), located near the inlet of the separator, is designed to serve four basic functions:
 - To dissipate the velocity head, thereby improving the overall hydraulic characteristics of the separator.
 - To direct incoming flow downward and outward maximizing the use of the separator volume.
 - To reduce flow turbulence and to distribute the flow evenly over the separator's cross-sectional area.
 - To isolate inlet turbulence from the rest of the separator.

Monitoring Systems

Gravity displacement discharges the effluent through the outlet at a lower point in the tank chamber. Separator systems can also be equipped with electronic monitoring with high oil level alarms, oil stop valve, and control panel. For easy and efficient operation and maintenance, an oil level sensor can sound an alarm at high oil levels so waste oil can be removed from the separator. Double-wall separators can be furnished with a leak detection system for the interstitial space. Additional monitoring equipment is available for oil or water level sensing, alarm and pump-out control.



Internal Chambers

In the sediment chamber (C), heavy solids settle out, and concentrated oil slugs rise to the surface. As the oily water passes through the parallel corrugated plate coalescer (D) (an inclined arrangement of parallel corrugated plates) the oil rises and coalesces into sheets on the underside of each plate. The oil then creeps up the plate surface, and breaks loose at the top in the form of large globules. These globules then rise rapidly to the surface of the separation chamber where the separated oil accumulates. The water with large oil globules, passes through the coalescent packing (E), where oil globules increases further in size and rise to the surface. The configuration of the packs efficiently coalesces or joins oil droplets together forming larger masses of oil that rise to the surface where it accumulates and can be removed.

Water passes downward to the water collection chamber under the coalescent and rise through the upward pipe (F) to the outlet pipe (G), where it is discharged by gravity displacement from the lower regions of the separator.

Storm Water Bypass

In case of peak flow, the water flow that exceeds the nominal flow jumps over the corrugated baffle to the outlet pipe. The water does not come in contact with the oil layer collected already in the coalescent chamber.

ACCESSORIES FOR OIL/ WATER SEPARATORS

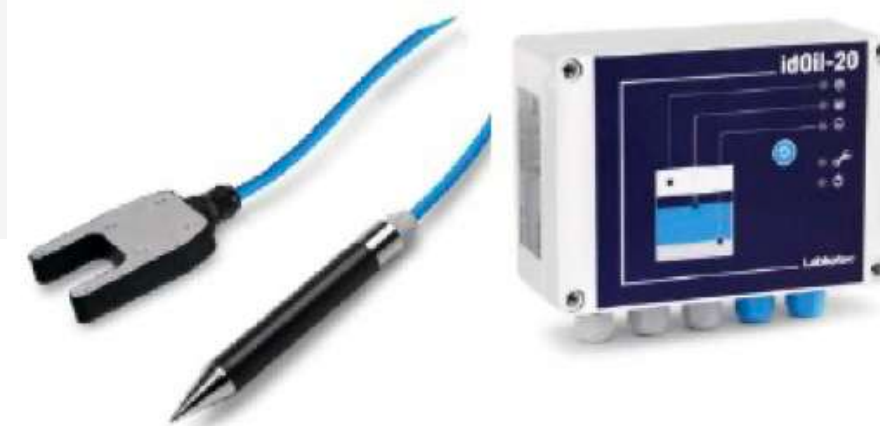
HYDROCARBON LEVEL DETECTION ALARM

- Equipment of level detection of hydrocarbon, oil and grease to install in grease and oil/ water separators with working temperatures (-20 to 50°C).



HYDROCARBON, SAND AND SOLIDS DETECTION ALARM

- Combined alarm system for oil, hydrocarbon, sand and solids.



HYDROCARBON, SAND AND SOLIDS DETECTION ALARM

- Detection of maximum level of oil and hydrocarbon on the water surface. To be installed in civil construction tanks or open top tanks.
- The probe is placed on three floats and detects an hydrocarbon layer up to 15 mm thick.





SAMPLE PROJECT:

- PROJECT: AMAALA AIR PORT FIELD
- CAPACITY: 315 LPS



SAMPLE PROJECT:

- PROJECT: QIDDIYA
- Capacity: 220 LPS



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