

Does Your Marine Sanitation Device Comply With the Latest IMO Rules?



Dana Casbeer, Marine & Offshore Product Line Manager

UNDERSTANDING
A VALUABLE RESOURCE



a part of Severn Trent Services

Water quality in the Gulf area has a direct affect on human and marine life in the region

- Water reuse, conservation and sustainability is paramount
- Water quality offshore can be directly linked to contamination of many inland water reserves
- Non compliant offshore sewage treatment systems will add to the destruction of sensitive coastal areas

Controlling the effluent discharges into the Gulf provides a healthier ecological environment



Pollution contributes to poor water quality

- Industrial and agricultural wastes introduced into coastal waters can lead to strain the ecosystem
- Sludge and solids waste disposal into ocean can cause septic conditions, rendering fish and shellfish unsafe to consume
- Pollutants could eventually render available aquifer reserves unsafe for consumption

To protect the region's natural waters it is important to implement treatment technologies that ensure effluent discharges from marine based installations meet IMO standards at a minimum.



Marine sanitation treatment systems treat sewage from offshore work installations to lessen environmental impacts

Methods of Marine Sanitation Treatment

Collection and Holding Tanks	Type III
Physical/Chemical Systems	Type II
Electrolytic Systems	Type II
Biological Treatment	Type II
No Visible Floating Solids	Type I
Note- Type I devices have the lowest degree of treatment	

New IMO discharge standards require specialized treatment equipment to comply

- MEPC.159(55) discharge standards are more stringent
- Previous technologies can not guarantee compliance

Measured Variable	IMO MEPC.159(55)	IMO Variables Prior to JAN 2010
BOD (mg/L)	<25 (down 50%)	<50
TSS (mg/L)	<35 (down 70%)	<100
Fecal Coliform (MPN/ 100 mL)	<100 (down 40%)	<250
COD (mg/L)	<125 (new measurable)	n/r
pH	Between 6-8.5 (new measurable)	n/r

Additional Ancillary Equipment

Careful evaluation of any offshore STP system should be performed before purchasing/installing the equipment.

Such as:

- Determining proper hydraulic waste loading into the STP system
- Allowable physical space available
- An exhaustive review of the sewage treatment system's solids/sludge handling techniques should be undertaken prior to installation to avoid potential health and safety issues.
- Proper solids waste handling duties and logistics of disposing of wastes.

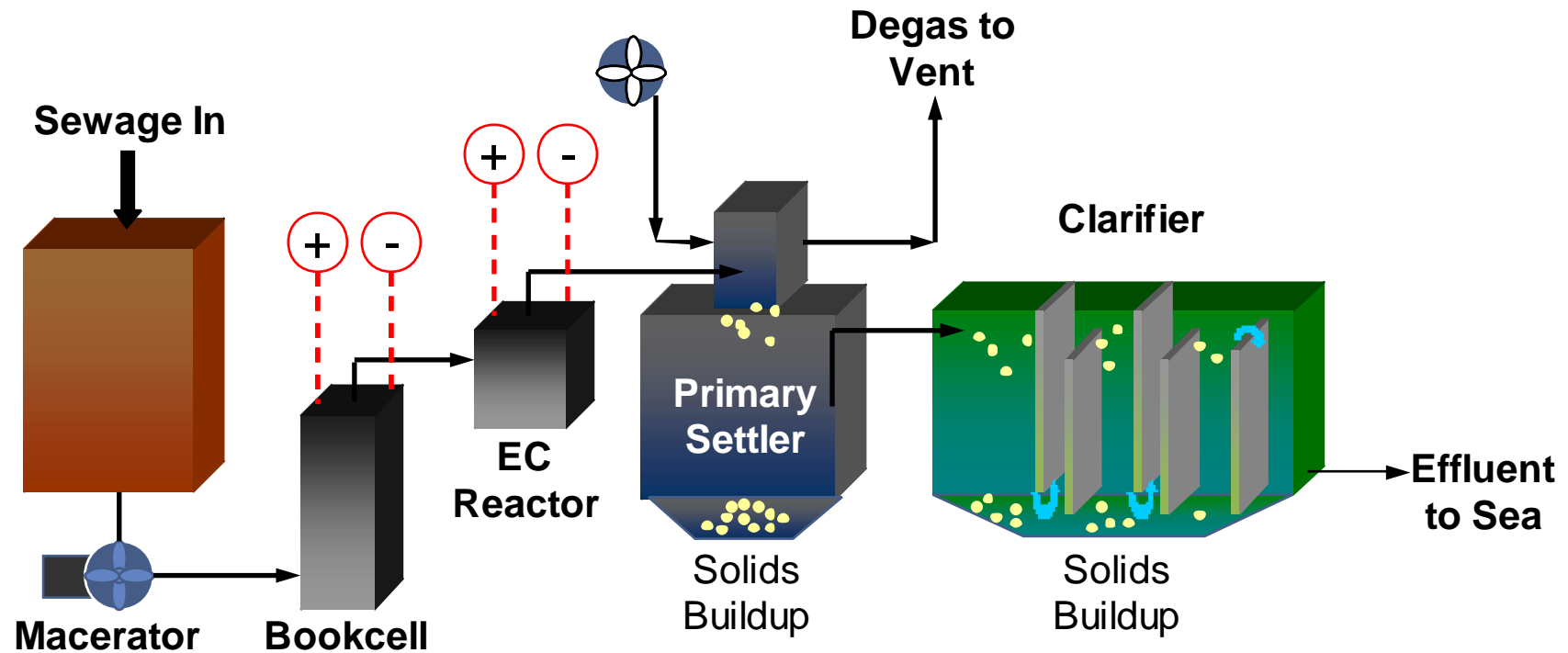
The OMNIPURE™ Series 55 electrolytic process ensures compliant effluent discharges

This technology utilizes a unique electrolytic treatment process, combined with electrocoagulation to both effectively treat marine wastewater and provide sanitary solids for handling.



Type Certified by Bureau Veritas to MEPC.159(55)
USCG Certificate of Approval to MEPC.159(55)

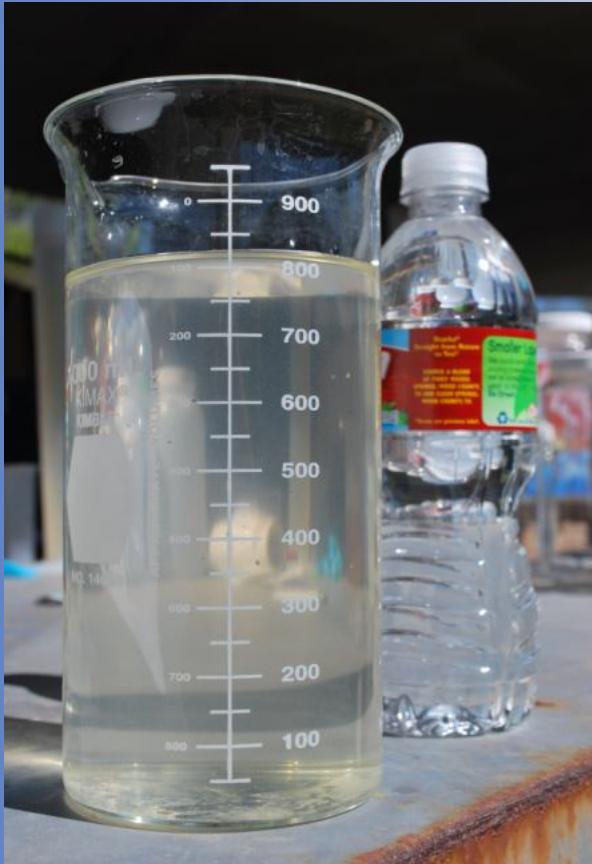
The OMNIPURE electrolytic process generates a powerful oxidant from seawater to effectively destroy sewage wastes



Proven Results per BV Field Testing

Table 1: Influent Stream							
Tal	Geo Mean	888.6	959.6	272.5	6.8		
Geo	Minimum	618.0	658.0	186.0	6.2		
Min	Maximum	1350.0	1376.0	366.0	7.3		
Max		TSS (mg/L)	COD (mg/L)	BOD (mg/L)	pH		
	MEPC 159 (55) standard Req.	Min. 500	n/s	n/s	n/s		
MEPC 159 (55) standard Req.		100	35	125	25	6 to 8.5	Max. 0.5

Proven Results per BV Field Testing



Measured Variable	IMO MEPC.159(55)	Bureau Veritas Cert. Values
BOD (mg/L)	<25	7.5
TSS (mg/L)	<35	16.3
Fecal Coliform (MPN/ 100 mL)	<100	8.7
COD (mg/L)	<125	30.3
pH	Between 6-8.5	7.0
Cl2 (mg/L)	0.5 (max)	.08

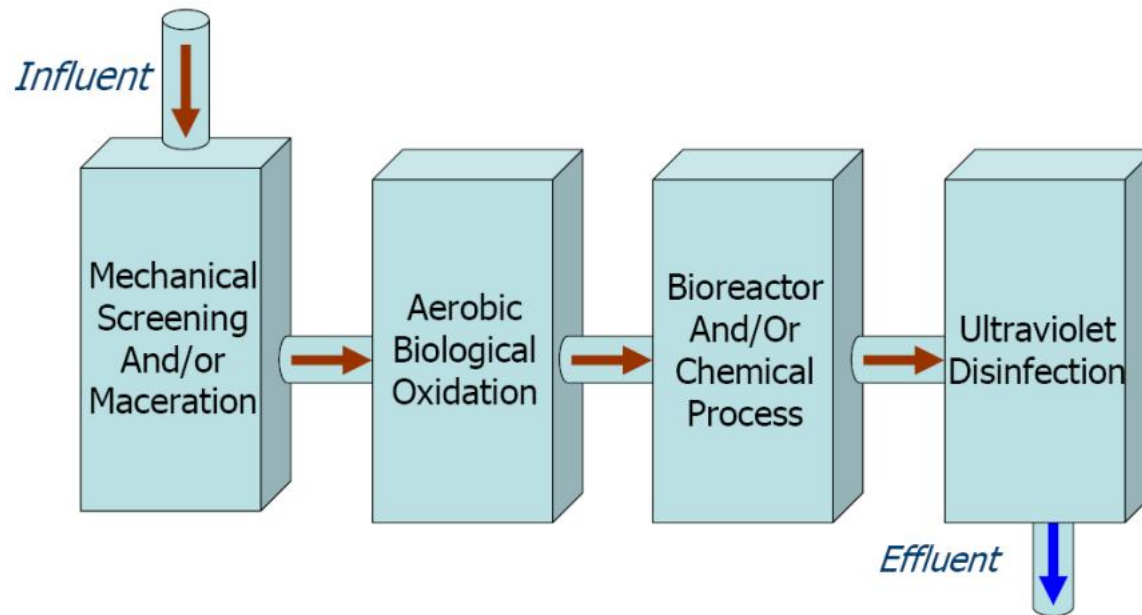
Removal of TSS

To achieve acceptable effluent, the TSS constituent must be reduced.

Cellulose fibers found in toilet tissues constitute a majority of the TSS variable. This cellulose is very difficult to destroy by conventional means.

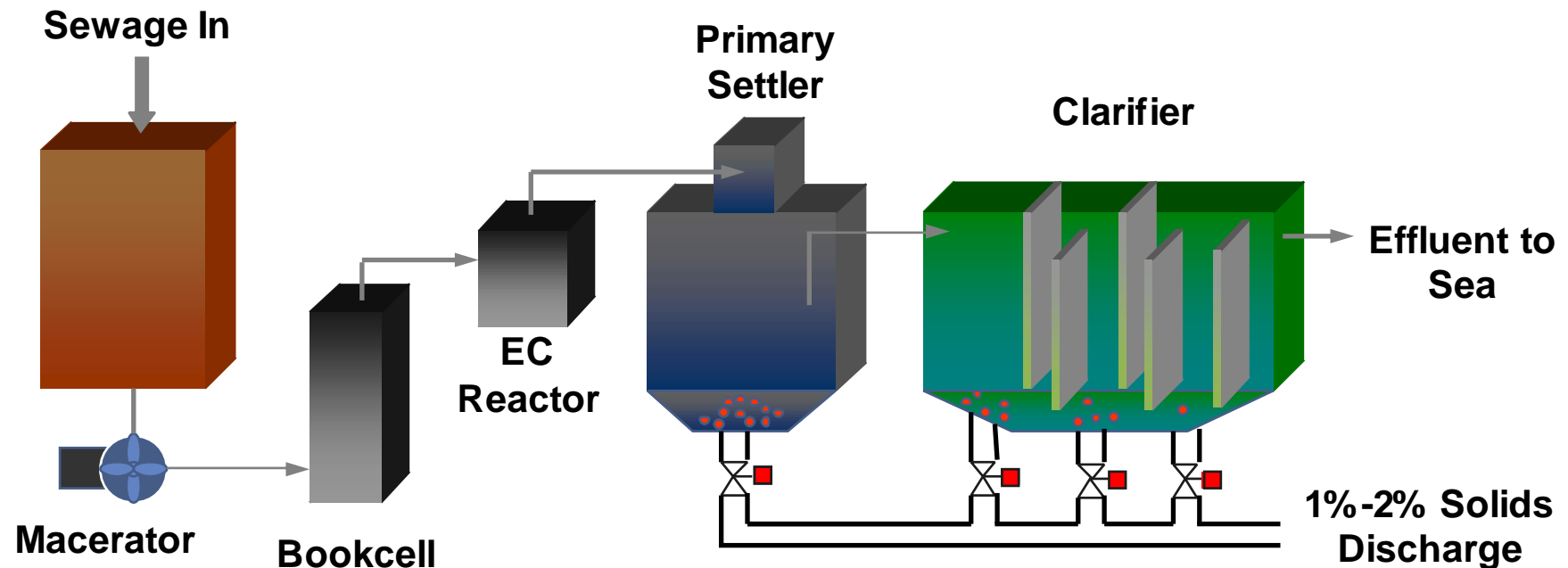
Effective solids management is imperative to STP systems since it directly affects effluent quality

- Low TSS requirement means very little solids allowed back into sea, solids must be physically removed
- Many STP technologies require solids removal prior to biological process; this can be unsanitary and a potential health hazard



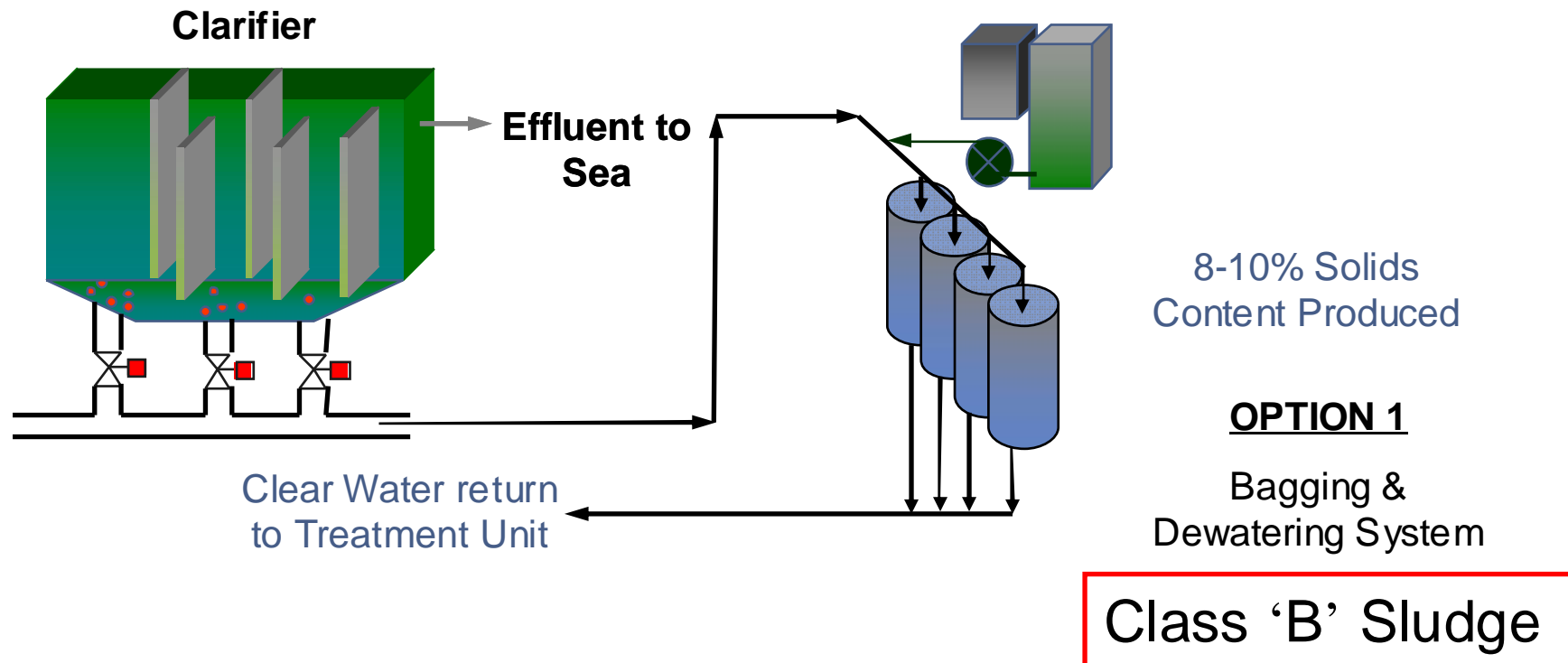
OMNIPURE process does not require handling of waste solids at raw, untreated influent side

- Our solids handling process is unique
- Automatically removes concentrated solids insitu to the treatment process



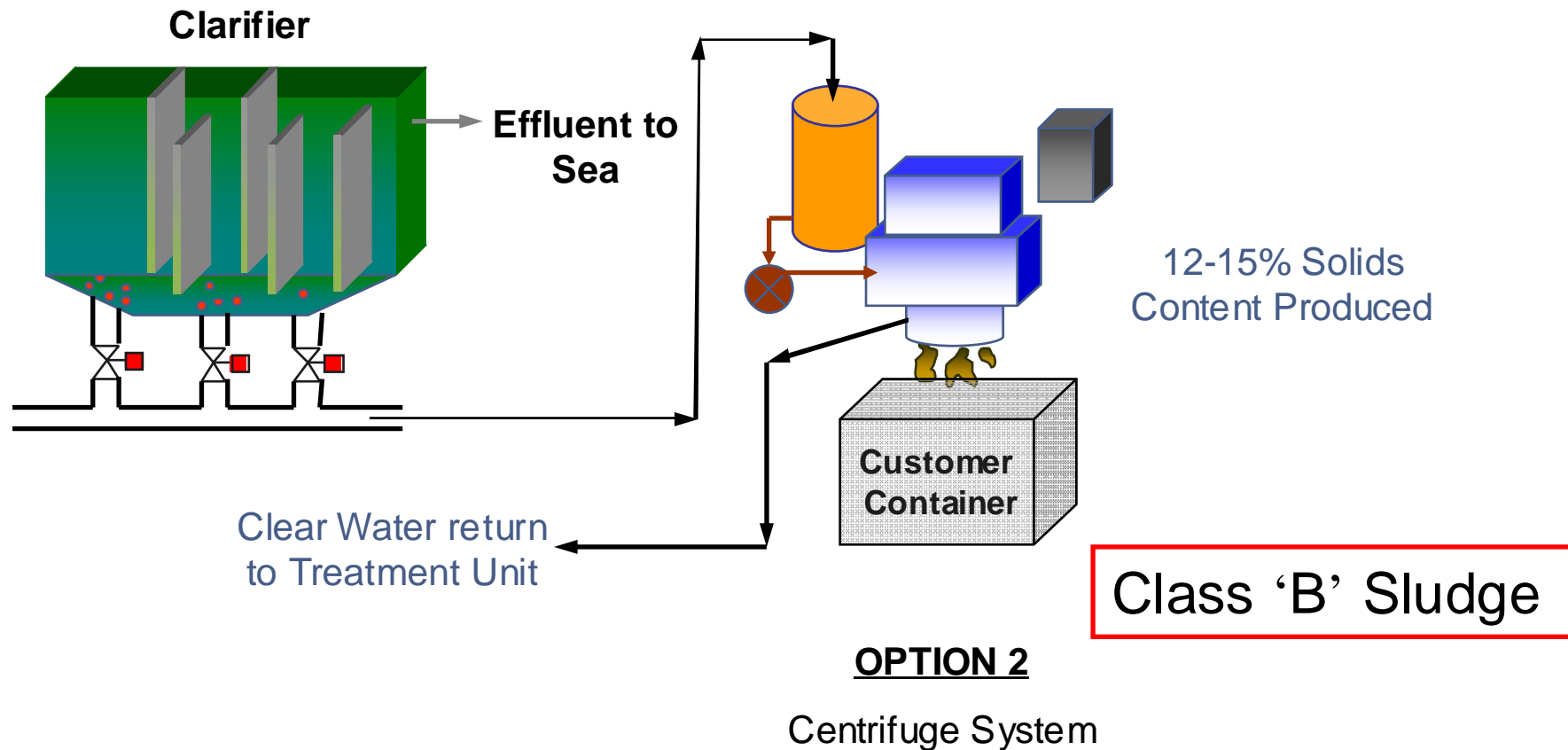
The process offers sanitary handling and discharge of the solids

- Two options to produce dry, dewatered solids
- Effectively handled and disposed of easily



The process offers sanitary handling and discharge of the solids

- Two options to produce dry, dewatered solids
- Effectively handled and disposed of easily



Conclusion

- Ensure all effluent discharge level are at or below IMO regulatory requirements to ensure sustainable water quality
- Examine new uses for dried solids masses removed from STP treatment units; agriculture, industry, etc...
- Utilize an STP system that offers safe and effective solids handling system to ensure safety of operators
- Aggressively institute checks for IMO compliance on production platforms, marine vessels and such where marine sewage treatment plants are installed

A world map is shown in a light blue color, serving as a background for the top and bottom sections of the slide. The map is centered and shows the outlines of continents and countries.

THANK YOU

OMNIPURE™ Series 55 Marine Sewage Treatment Systems

UNDERSTANDING
A VALUABLE RESOURCE



a part of Severn Trent Services