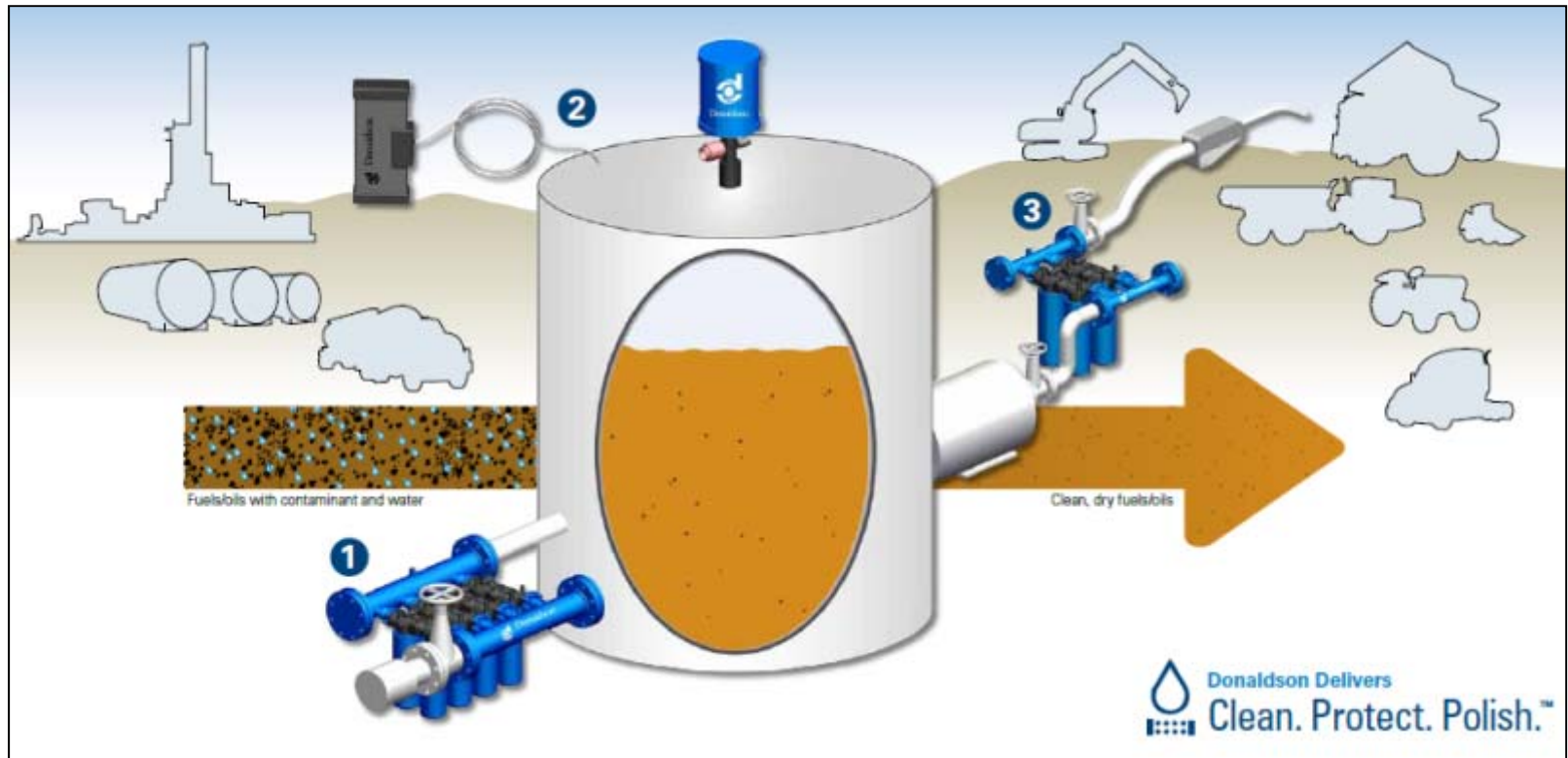


# Clean Solutions Winning Strategy

Prevent problems before they occur

Protect your infrastructure investment



1 Clean at Inlet

2 Protect in Tank

3 Polish at Outlet

# Things to identify @ Site

- Check tank size(18,000L, 20,000L & etc...)?
- How many tanks?
- Check current flowrate @ inlet & outlet?
- Pump Specs?
- Types of liquid stored?
- Liquid Specs(Diesel, Hydraulics or Lube)?
- Problems faced(Sludge, water or dirt)?
- Types of equipment used on-site? Tier 4? Tier 5?
- On-site photos?

**DO NOT RECOMMEND ONLY STAGE 1 & 2 or STAGE 2 & 3.  
It will not work effectively! All stages must be installed to  
achieve the targeted ISO cleanliness.**

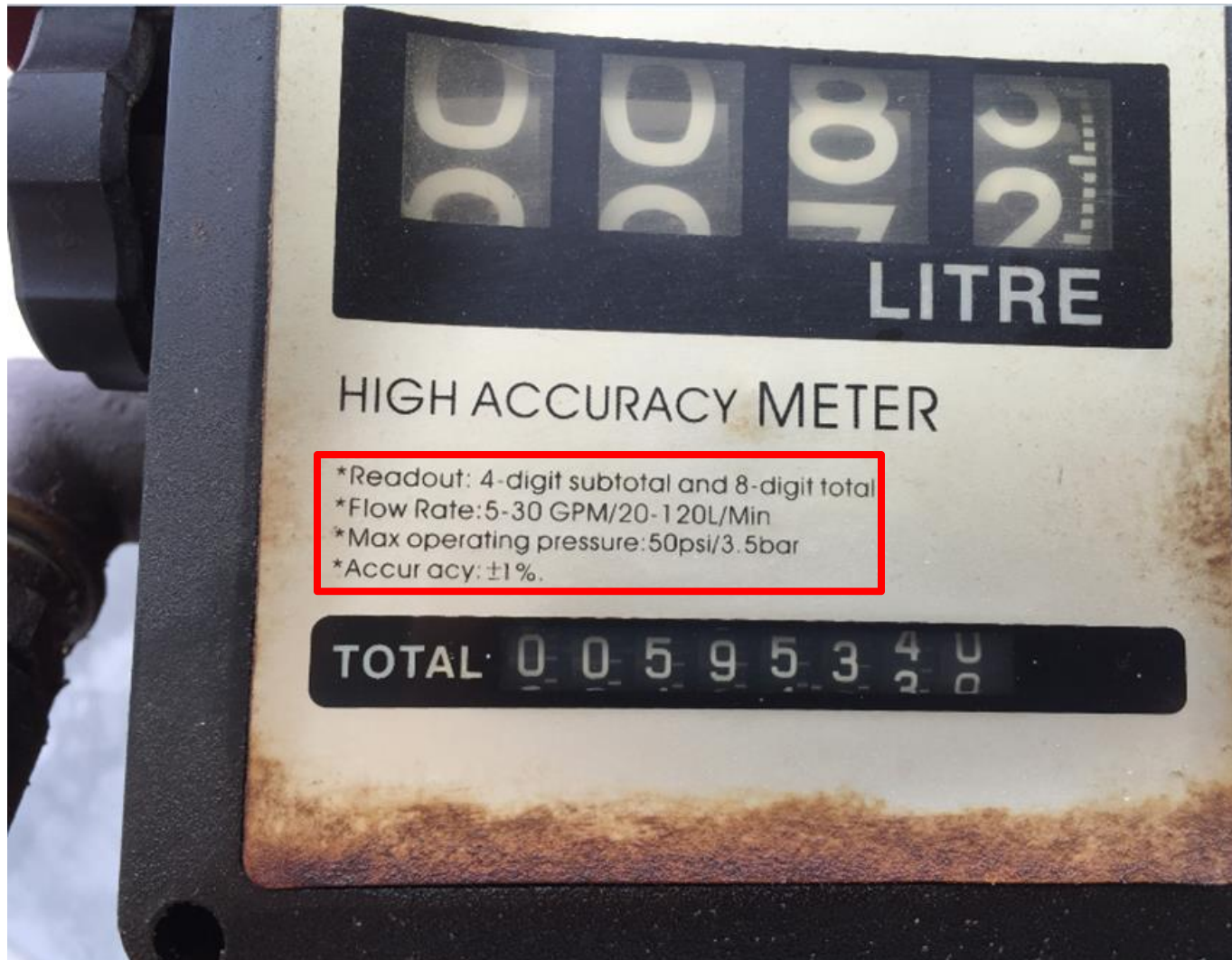


# Examples @ Site



**Tank Size: 20,000L**

# Examples @ Site



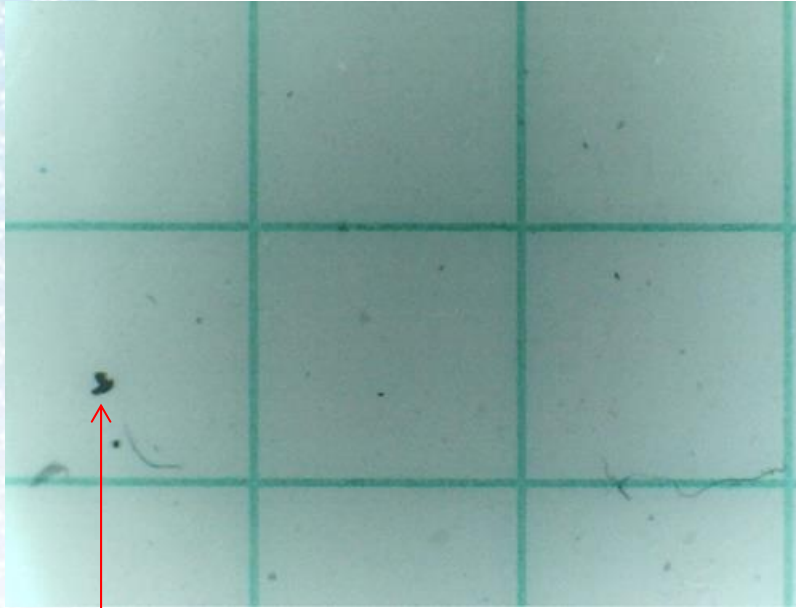
**Flowrate(Pump Specs): 5-30 GPM/ 20-120L/Min**

# Examples @ Site

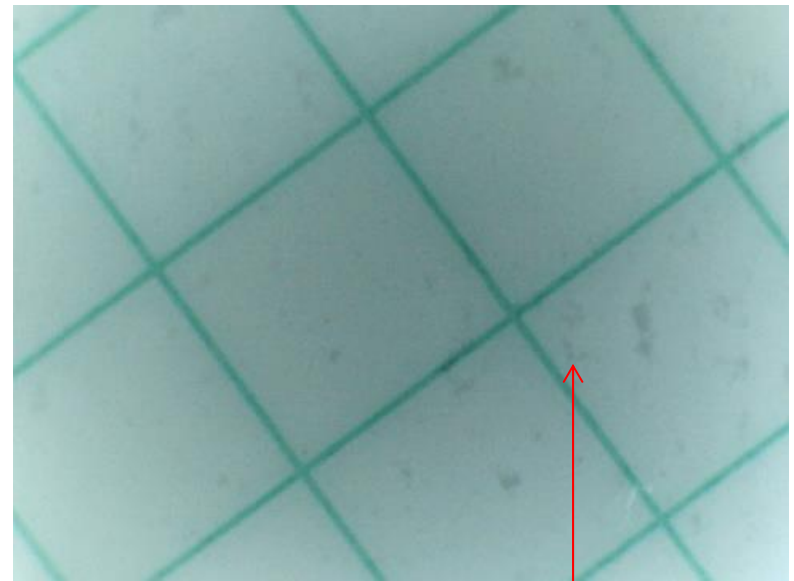
## MARINE DISTILLATE FUEL – MGO

Characteristic	Unit	MGO Guideline Van Oord	Limit ISO- F DMA ISO 8217:2005	Test method
Density at 15C, max.	kg/m <sup>3</sup>	860.0	890.0	ISO 3675 or ISO 12185
Viscosity at 40C, max. Viscosity at 40C, min.	mm <sup>2</sup> /s	5.0 2.5	6.00 1.50	ISO 3104
Flash point, min.	°C	60	60	ISO 2719
Pour point, max. winter quality * Pour point, max. summer quality	°C	-6 * 0 *	-6 * 0 *	ISO 3016
Sulphur, max. Sulphur, min.	% mass	1.00 ** 0.1	1.50 ** -	ISO 8754 or ISO 14596
Cetane Index min.		45	40	ISO 4264
Micro carbon residue, max. (10% distillation bottoms)	% mass	0,20 ***	0.30 ***	ISO 10370
Ash, max.	% mass	0.01	0.01	ISO 6245
Appearance (visual inspection)		Clear and bright	Clear and bright	
Total sediment, existent max.	% mass	0	-	ISO 10307-1
Water max.	% volume	0	-	ISO 3733
Vanadium, max.	mg/kg	0	-	ISO14597-IP501- IP470
Aluminium + Silicon, max.	mg/kg	0	-	ISO10478-IP501- IP470
Strong acid number (SAN)	mg KOH/g	0	-	ASTM D974
Used lubricating oil (ULO), max.	mg/kg	nil	nil	Fuel is free of ULO if:
Zinc, max.	mg/kg	0	-	IP501 or 470
Phosphorous, max.	mg/kg	0	-	IP501 or 500
Calcium, max.	mg/kg	0	-	IP501 or 470
Distillation: 50% recovered max.	°C	285	-	ASTM D86
Distillation: 90% recovered max.	°C	350	-	ASTM D86
Recovered at 350 °C min.	% vol	85	-	ASTM D86

# Examples @ Site



Big Particles



Sludge



**Using Patch Test Kit X009329 to identify the Problems**

# Examples @ Site



**Identify Inlet & Outlet**