

OILY WATER TREATMENT - DESIGN BASIS

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- The feed conditions and the treated water discharge requirements are critical OWS design parameters.
- An OWS design cannot be completed without this information and the Purchaser is responsible for this information.
- If the Purchaser has not provided this information, Ultraspin can make assumptions to develop a preliminary design. Our assumptions may have been highlighted below.
- No datasheet, process design, equipment selection, performance curve, quotation, or other information Ultraspin provides can be taken as firm or binding until the Purchaser confirms and accepts that the information below is correct.

A: Oil Water Feed Conditions (Purchaser to Complete or Confirm)

A1	End Use Customer:				
A2	Oily Water Description:				What is the origin of the oily water coming from? Sources. Nature etc.
A3	Design Mean Oil Droplet size:	micron			Measure at OWS feed.
A4	Average Oil Density:	kg/m ³			ASTM 2520: Measure at OWS feed. Assuming weathered oil with suspended solids attached
A5	Water Density	kg/m ³			ASTM 2520
A6	Water Dissolved Solids:	mg/L			ASTM 2540
A7	OWS feed pH:	pH	Max	Min	ASTM 4500: Measure at OWS feed.
A8	Water Temperature:	°C	Max	Min	ASTM 5540C: Measure at OWS feed.
A9	Average Suspended Solids Density:	kg/m ³			ASTM 2520: Measure at OWS feed.
A10	Design Suspended Solids Concentration:	mg/L			ASTM 2540 A, B, C, D, E, and F: Measure at OWS feed.
A11	Average Solid Particle size:	micron			Measure at OWS feed.
A12	Raw Feed Inlet Design Oil Spill load:	L			The Oil Spill Load is the instantaneous oil spill upstream of the effluent collection pits under normal operating conditions. Oil Spills larger than shown here will be treated as an incident and managed separately.
A13	OWS Design Oil Spill Load	L			Oil Spill load at OWS Feed.
A14	Design Oil Feed Concentration:	mg/L			APHA 5520 A-G; USEPA Method 1644; or ASTM Method D7066-04. Measure at OWS feed. At the pumped OWS Feed, not the pit inlet.
A15	Peak Hourly 'Dry' Process Inflow:	m ³ /h			At the feed / inlet to the collection pit(s)
A16	Peak Hourly Contaminated Rainwater Inflow:	m ³ /h			At the feed / inlet to the collection pit(s)
A17	Daily 'Dry' Process Inflow:	m ³ /day			At the feed / inlet to the collection pit(s)
A18	Daily Contaminated Rainwater Inflow:	m ³ /day			At the feed / inlet to the collection pit(s)
A19	Will Untreated Water be allowed to bypass the OWS? If so, how much of the total inflow?	%			
A20	Other fluid properties				Are there other fluid properties that might influence the equipment design? e.g. corrosive fluids, emulsifying materials.

Note:

1. Purchaser must specify where in the process the data described is measured.

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B: OWS Vendor Requirements: (Purchaser to Complete or Confirm)

B1	OWS Design Flow Rate	m ³ /hr		
B2	OWS Discharge Average Oil and Grease concentration	mg/L		APHA 5520 / USEPA Method 1644 / ASTM Method D7066-04. See notes below. Specify where this is measured.
B3	Average Discharge Petroleum Hydrocarbons concentration:	mg/L		APHA 5520 or USEPA Method 1644 or ASTM Method D7066-04. See notes below. Specify where this is measured.
B4	Average Discharge Suspended Solids concentration:	mg/L		ASTM 2540 A, B, C, D, E, and F. Specify where this is measured.
B5	Water colour, Water Density Salinity, pH, Temperature, Biological matter, Chemicals	The OWS is not required to change any of these parameters.		
B6	Oil Separation Efficiency % required at Design feed mean oil droplet size micron	%		Vendor is required to prove this capability, including position of equipment and staff capability to measure oil droplet size and concentrations.
B7	Factory Pre-Award Test, Guarantee	<ol style="list-style-type: none"> 1. Vendor must generate an oily water mixture in their factory like the conditions outlined in the feed conditions on this data sheet. 2. This emulsion must be tested on the actual design of equipment recommended. 3. An actual – as tested - oil droplet size Vs separation % performance curve must be provided by the Vendor. Typical or previous test date will not be accepted. 		

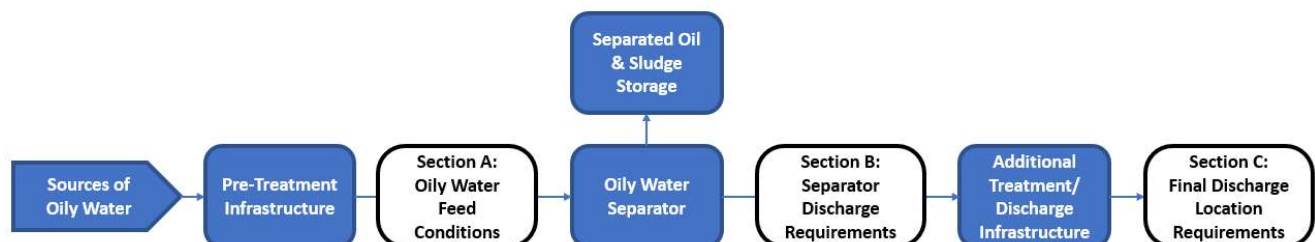
C: Final Discharge Location Requirements: (Purchaser to Complete or Confirm)

In many cases the OWS is not the final step in the treatment process, often evaporation ponds, aeration systems or large dams can further improve water quality before the water is needs to meet site specifications or license requirements.

C1	What is the ultimate Treated Water Discharge Location?			Where is the treated water going to be discharged?
C3	Average oil and grease concentration	mg/L		APHA 5520 or USEPA Method 1644 or ASTM Method D7066-04. See notes below.
C4	Average petroleum hydrocarbons concentration:	mg/L		APHA 5520 or USEPA Method 1644 or ASTM Method D7066-04. See notes below.
C5	Average suspended solids concentration:	mg/L		ASTM 2540 A, B, C, D, E, and F.
C6	Water colour, Water Density Salinity, pH, Temperature, Biological matter, Chemicals			

Important Note for all Feed and Discharge Conditions:

1. Some chemicals interfere with the oil and grease or hydrocarbon laboratory analysis. Some chemicals may be seen incorrectly as 'hydrocarbons' or 'oil & grease' in some laboratory analysis. Performance assessments will be determined after correcting and adjusting results to take account of all interfering substances with the relevant test standards.



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