1.1 Coarse bar screen unit

- **General**

General	Description
Operating principle	Mechanical bar screen for removal of debris and other disturbing solids from the incoming Truck's wash wastewater.
Type	Inclined
Tag No.	
Dwg. No.	
Quantity	1
Site conditions	
Site elevation m	~ 25 m above sea level
Ambient temp. ºC min/nom/max	5/20/40
Humidity %	Approx. 85
Environment	Corrosive
Location/ erection	Outdoors, inside a rectangular channel
Operation	Continuous
Process	
Medium	Truck's wash wastewater
Operating temp. ºC min/nom/max	18/25/45
pH value	5.0 - 8.5
Organic concentration mg BOD5/l	800
Solid concentration mg TSS/l	1,500
Density kg/m3	1,045
Scope of supply	- screen bar - drives - Three removable rakes (With option to add two more rakes)) - Differential level sensor with connection to smart control - discharge hopper and chute - chain wheel protection - machine support frame and anchor bolts - air compressor for differential level control - automatic/ manual valves, all fittings, pipe, tubing and instrumentation required for the operation of the differential level control and the whole unit. - electrical and control panel with complete integrated control system for controlling the screen bar unit, cleaning cycle and all other needed equipment. - full automatic operation of the screen bar unit designed and built according to the attached specifications. - ProfiNet communication + GSDML configuration file for integration into the plant main PLC. - all parts required for on-site erection, ready for operation, including lubricant - electrical cables ending on the platform in a terminal box. - spare parts according to the manufacturer demand - Individual factory performance test. - O&M manuals and operating curves - 2D and 3D specific and detailed equipment drawing (in Autocad dwg. & STP format delivered within 15 days from tender wining date for client's pre-approval (comments by the client will be delivered within 1 week). - final 3D specific and detailed equipment drawing (in Autocad dwg. or STP format), data sheets, O&M manuals and operating curves delivered within 60 days from tender wining date. - an open (none password protected) copy of the PLC and HMI logic updated software. - a supreme installation supervision by the manufacturer representative that will execute a final installation approval certificate. - system start-up and training - warranty on the system and components for 12 months from start-up or 18 months from supply to site (whichever comes first). - additional requirements as described
Notes:	The manufacturer's proposal shall be accompanied with: - this specifications form, filled with all relevant details and required information (no blank spaces are allowed) - an appropriate 3D equipment drawing (in Autocad dwg. or STP format). - the required spare parts list for one year with added costs.

- **Coarse bar screen**

Manufacturer /Supplier	KUHN, MEVA, HUBER, SPIRAC
Type / model	
Coarse bar screen	
Type	Inclined
Installation angle (from horizon) deg.	80
System capacity m3/h	40
Screening bar spacing mm	8
Screening bar thickness mm	TBD
Max. hydraulic loss mm	150
Max. flow velocity between slots m/s	1.1 @ 0% blinding, 1.5 @ 30% blinding
Channel depth mm	1300
Channel width mm	800 (according to the attached plan)
Total screen depth mm	700
Total screen width mm	600
Total coarse bar screen length of footprint ("shadow") mm	<2000
Total rake width mm	TBD
Discharge height from top of channel mm	1500
Discharge height to channel bottom mm	2800
Screen bar profile	TBD
Number of rake bars	3-5 (See above)
Rake speed m/s	TBD (Operates in variable speeds)
Rake lifting capacity per cycle kg	90
Chain type	TBD
Chain max. breaking strength KN	112
Lower sprocket bearings	Self-cleaning, maintenance free
Control/ instrumentation	
Integrated control system	Control, monitoring and communication unit (to plant main control system)
Communication	ProfiNet + GSDML configuration file for integration into the plant main PLC
PLC manufacturer	Emerson, pac systems RX3i
HMI screen size inch	TBD
Screen drive direction reversal	Switch/ logic
Screen bar cleaning cycle	Control, (pre-determined time in case differential level rises above a set value)
Differential level control type	Bubble air
Rake position detector	Monitoring
Differential level	Monitoring
Emergency stop	On machine
Motor speed	Controlling
Materials of construction	
All components in contact with medium	SS 316L
Chain and sprocket wheels	SS 316L
Discharge hopper	SS 316L
Bushes, pins and rollers	Hardened stainless steel
Lifting lugs	SS
Bolts / nuts	SS
Dimensions (L x W x H) m	2 X 1 X TBD
Total weight Kg	TBD

- **Drives**

Manufacturer /Supplier	Coarse screen bar manufacturer
Type	Squirrel cage motor with shaft mounted gear
Corrosivity Category	
Rated power kW	
Power supply V/Hz	3 x 400 / 50
Rated current A	
Starting current A	
Starting method	VFD
Speed RPM	
Power input kW	
Power consumption kW	
Life time bearings (L10 life) hr	100,000
Insulation class	F
Protection class	IP65

Protective devices	Temperature switch, PTC-F
Drive efficiency	IE3