



Clarisep

Solids & Oils Removal

The Clarisep clarifiers are designed for high rate solids settling and oil separation in a compact footprint.

Pan America Environmental Clarisep Series, Solids & oils clarifiers are a high performance, Lamella plate and Flopak coalescing design for removal of settleable solids and oils/fuels in a variety of wastestreams.

The Clarisep's compact footprint design requires less installation space than conventional or tube type clarifiers. The SPC design incorporates slant plate settling surfaces pitched at a 55° angle from the horizontal with uniform plate spacing.

Due to plate angle and high coalescing surface the solids slide down the plates into the sludge hopper below the plate pack and oils readily attach to the media surface for high performance separation. The simple, inexpensive design, combined with no moving parts and/or a sludge auger makes the Clarisep easy to install, operate and maintain.

Chemical pretreatment often improves solids removal efficiencies by increasing size and density. The use of chemical flocculants is based on system efficiency, application, contaminant characteristics and cost. Commonly used chemicals include trivalent metallic salts of iron, such as $FeCl_2$ or $FeSO_4$ or aluminum, such as $AlSO_4$. Organic and inorganic polymers (cationic or anionic) are often used to enhance the settling process. The most commonly used inorganic polymers are the polyacrylamides.



Standard Features:

- A36 carbon steel construction
- Water collection trough
- Influent chamber
- Effluent trough
- Sludge chamber/hopper
- Oil separator section
- NPT/flanged fittings
- Slant plate pack
- Influent diffuser
- Flopak coalescing media pack

Typical applications:

- Groundwater remediation
- Mobile clarifier system
- River water treatment
- Power plant water treatment
- Manufacturing process water
- Aircraft wash racks
- Plating waste
- Mining wastewater
- Air scrubber water treatment
- Membrane Filter pre-treatment
- Snack food processing plants
- Trench water treatment
- Pulp & paper effluent
- Filter backwash



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Clarifier & Oil Water Separator

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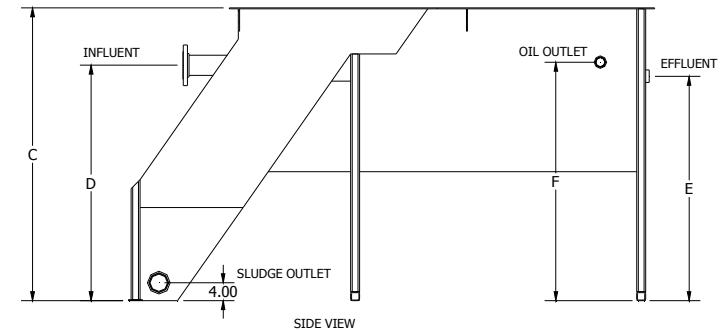
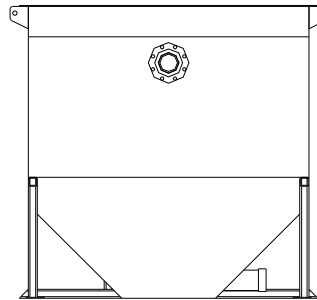
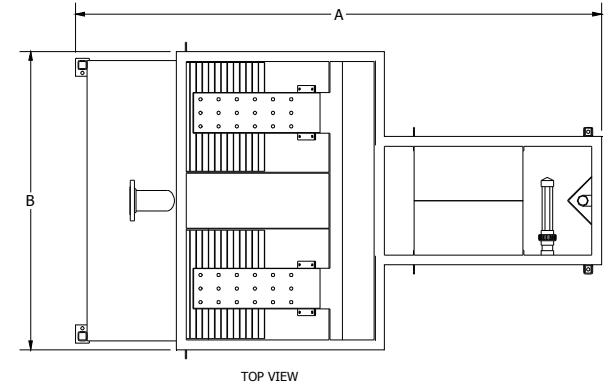
Solids & Oils Removal



Model	L	W	H	Inlet	Outlet	Oil Outlet	Sludge Volume Gal.	Inlet Size	Outlet Size	Sludge Outlet Size	Area				Coalescing Area Ft2	Empty Weight	Oper. Weight	Flow Rate GPM
											1"	1.25"	1.5"	2"				
Pyramid Bottom	A	B	C	D	E	F												
CS-202	8'-4"	2'-4"	4'-3"	3'-4"	3'-1"	3'-3"	15	2"	2"	3"	20	16	13	10	138	600	1542	5
CS-404	8'-11"	2'-4"	4'-3"	3'-4"	3'-0"	3'-0"	21	2"	2"	3"	40	32	26	20	276	724	2295	10
CS-608	9'-10"	2'-4"	4'-3"	3'-4"	3'-3"	3'-6"	32	2"	2"	3"	60	48	40	30	552	936	3625	15
CS-8012	9'-10"	5'-6"	5'-5"	4'-4"	4'-0"	4'-4"	59	3"	3"	3"	80	64	53	40	828	1850	6860	20
CS-15016	11'-0"	5'-6"	5'-5"	4'-4"	4'-0"	4'-4"	125	3"	3"	3"	150	120	100	75	1104	2420	9842	40
CS-20024	14'-2"	5'-6"	5'-9"	4'-8"	4'-3"	4'-8"	184	4"	4"	3"	200	160	133	100	1656	2806	11595	50
CS-30036	14'-0"	5'-6"	7'-5"	6'-3"	5'-11"	6'-4"	136	4"	4"	3"	300	240	200	150	2484	3502	14869	75

Dimensions, design and capacities not for construction and subject to change without notice. Larger sizes available. Oil outlets are 2" to the CS-808 and 3" for larger units. Flow rate basis: .25 GPM/Ft2. Standard plate spacing for this model and flow rate is 1" other plate spacing reduces flow rate.

The Clarisep is a unique combination of Slant Plate Clarifier and oil water separator integrated into a single tank. The design allows mixing and matching of different sized separator sections to clarifier sections to more precisely match the system to a particular project needs. Oil removal to 10 mg/L 30 micron non-emulsified oil droplet at discharge.



2 Clarisep Oil & Solids Separator





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Clarisep Options

Influent Feed System Air operated, diaphragm or centrifugal pump with air controls, sump level switches & NEMA 4 control panel, base mounted, 115/230/460V power offered. Electric diaphragm pumps available.

Sludge Pumpout System Air operated, diaphragm pump with air controls & NEMA 4 control panel, auto on/off timer, base mounted, 115V/1ph/60Hz power required. Progressive cavity pump system also available. 1 - 100 GPM.

Effluent Pumpout Centrifugal pump with level switches & NEMA 4 control panel, base mounted, 115/230/460V power offered. Effluent tank is provided to accommodate pumpout.

Chemical Pretreatment Systems Pretreatment systems to coagulate, flocculate, flash flocculate, pH adjust prior to the SPC. Contact Pan America to determine proper system needs for your application.

pH Adjustment Systems pH adjustment systems can be provided to maintain pH levels prior to or after the SPC. Contact Pan America to determine proper system needs for your application.

Sludge Auger SPC-20 – SPC-240 sludge hopper can be provided with a sludge auger. System consists of stainless steel shafts with coated steel screw auger driven by a slow speed gear motor drive assembly. The auger extends the full length of the solids hopper and conveys solids to the sludge outlet. A NEMA 4 on/off control box is provided, power required: 230 or 460V/3ph/60Hz.

Elevation Platform Epoxy coated steel legs are provided to elevate tank to desired level. Full platforms & walkways with ladders or stairways can be provided where required or desired. Designed per OSHA guidelines. Pan America Environmental, Inc. 2309 N. Ringwood Rd. Ste G McHenry, IL 60050 USA 815.344.2960 panam@panamenv.com www.panamenv.com ©1991-2019 Pan America Environmental, Inc.

Alternate Media Construction Standard Flopak media is PVC. HPVC, polypropylene, glass-coupled polypropylene and 304/316 stainless media is available. Contact PAE to determine proper media type for your

Sight Glass Two automatic, brass valves with tempered sight glass and protection rods mounted in sludge hopper. If glass is broken check ball stops outflow.

External Storage/Feed Tanks A wide variety of tank volumes can be supplied for your water, product and sludge holding needs. Flat bottom and cone bottom designs constructed in polyethylene, fiberglass, steel & stainless steel can be provided.

Effluent Filter Systems Solids filter systems can be provided to remove filterable solids from the SPC effluent. Contact Pan America to determine proper filtration needs for your application.

Carbon Filtration Systems (GAC) GAC carbon filters can be provided to remove contaminants after the SPC. Contact Pan America to determine proper system needs for your application.

Level Sensors Level sensors can be provided to detect water and other conditions. One or more sensor points can be provided to perform various functions such as high level, low level, pump on/off based on liquid levels and level detection for DCS controls or other functions based on your needs.

High Temperature Design system designed for temperatures up to 200° F.

Tank Construction 304 and 316 stainless steel tank construction can be provided.

Plate Construction Alternative plate materials can be provided in place of the standard PVC construction.

Cover A multi-section, vapor/odor retaining cover with hardware & gasketing can be provided for complete closure of the tank. Inspection hatches can also be provided for localized access/inspection.

Vent Scrubber SPC head space vapors can be extracted and scrubbed prior to discharge to atmosphere to remove VOC and other content.

Class 1 Div 1 & 2 Systems can be designed for use in a class 1 div 1 or 2 environment. Controls, components and wiring are changed to meet the needs of these environments. Intrinsically safe relays are also used for level sensors.

Field Skid Mounting SPCs can be mounted to a mobile skid with leveling for quick field mobilization.

Skid Mounted System SPCs can be combined with our other treatment equipment and options into a fully integrated, custom designed system completely mounted, plumbed and wired to a system skid. To simplify your need to do the wiring and plumbing on site, reducing your time frames and on site costs, we design around your requirements.

System Containerization SPC systems with any options can be installed in a 20 or 40' shipping container(s) to simplify system provision and field implementation. System would include the complete mounting, piping and wiring of the system in one or more container as required by the project.

Trailer Mounting SPCs can be mounted on a trailer for system mobilization. Trailer design generally includes corner leveling jacks, bubble levels, walkway, toolbox, electric or hydraulic brakes, piping and wiring of options.

Freeze Protection Immersion heaters mounted through tank wall. Each heater has an independent thermocouple.

