TREATMENT
PRODUCTS
CORPORATION

Wastewater Treatment & Recovery Systems

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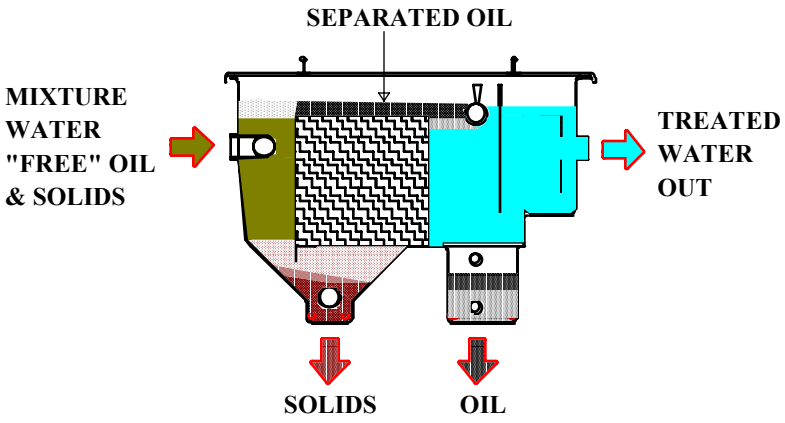
COALESCING OIL WATER SEPARATORS



BACKGROUND

Gravity Separation of non emulsified oil water mixtures is a common practice. To separate emulsified oils chemical pretreatment for emulsion breaking must precede the separator. The oil, solids and water phases have different specific gravities and will rise and settle at different rates. Applying Stokes Law we can predict the separation characteristics and required retention times. To increase the efficiency of separation and to allow the removal of fine oil droplets smaller than 150 micron a Coalescing Media is recommended.

By placing an oleophilic (oil attracting) material in the waste stream the efficiency of separation can be dramatically improved. The fine oil droplets are attracted to and impinge on the media surface. The fine droplets on the media surface coalesce or agglomerate to form larger droplets. The droplets continue to grow in size until they are large enough and buoyant enough to break free and rise to the liquid surface where they are skimmed or decanted. The coalescing process enables the removal of smaller oil droplets than it is possible to remove with a conventional gravity separator.

The effectiveness of the coalescing media is dependent upon the media shape, media surface area, liquid and oil density, bulk liquid velocity and direction of flow. The media must also be designed to facilitate the removal of suspended solids and sludges.

OPERATION

The feed stream enters the Inlet Chamber and is evenly dispersed by a non clogging inlet distributor. Large or Heavy suspended solids fall out of suspension in the Inlet Chamber and collect in the Sludge Thickening And Storage Chamber. The bulk liquid flows across the Sludge Thickening And Storage Chamber through the coalescing media in the separation chamber.

The coalescing media creates a uniform cross-sectional resistance and the back pressure helps to evenly distribute the flow through the media. The bulk liquid flows through the coalescing media promoting intimate contact with the oil droplets and the media surface. The coalesced oil takes the least restricted path to exit and rises or floats through the media to the top of the bulk liquid surface. The separated oil accumulates on the bulk liquid surface and displaces the water. The oil layer continues to grow until it spills over an adjustable rotary pipe skimmer and into an integral oil reservoir from which it can either flow by gravity or be pumped to disposal or storage.

Solids entering the coalescing media encounter a 60° angle of inclination which is the optimum to promote the agglomeration of the fine particles and settling. The agglomerated solids slide down the inclined surface of the coalescing media and collect in the Sludge Thickening And Storage Chamber. The walls of the Sludge Thickening And Storage Chamber are sloped at 45° to ensure easy complete removal of the sludge.

The “oil free” effluent flows under a baffle over the effluent weir and into the effluent chamber. The treated effluent can either flow by gravity or be pumped to disposal or post treatment.

MATERIALS OF CONSTRUCTION

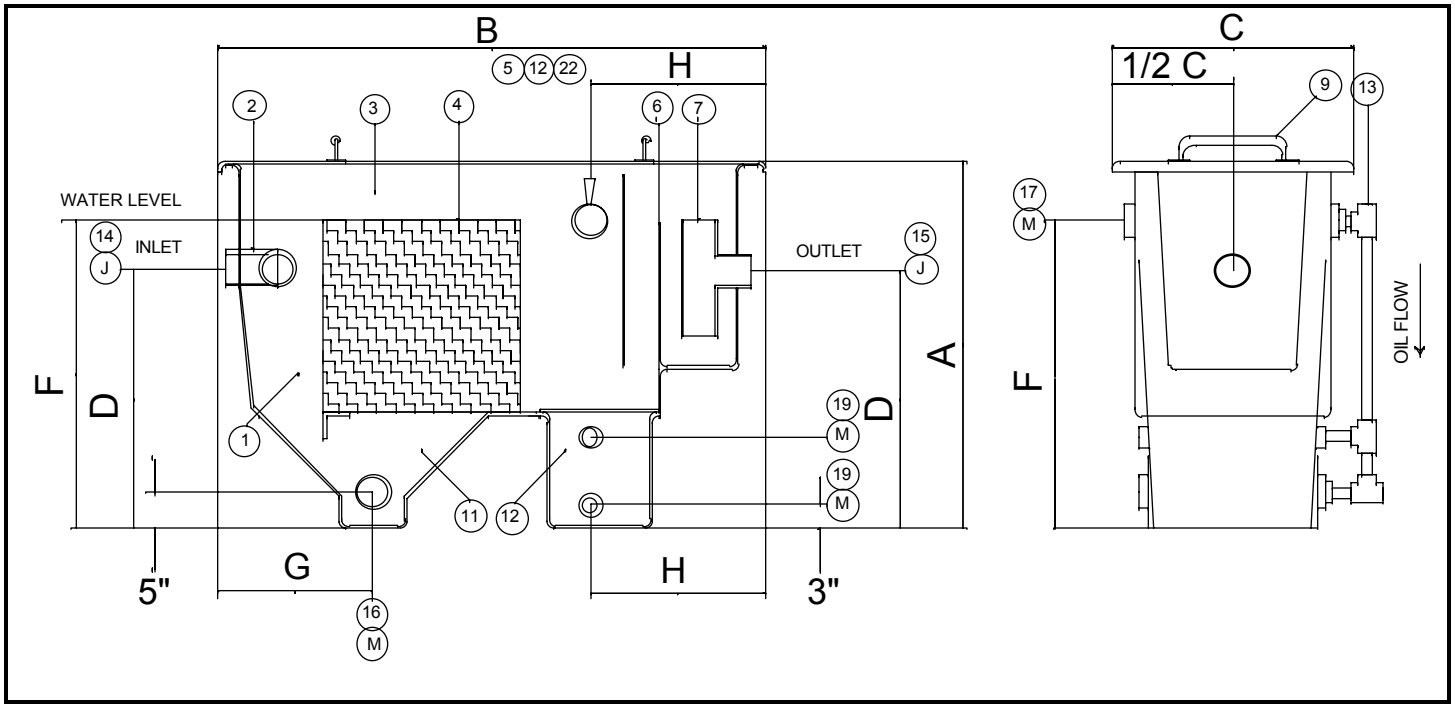
1. The tank shell, baffles and lid are fabricated of fiberglass reinforced polyester resin. The exterior surfaces are covered with a continuous layer of chemical resistant, ultraviolet stabilized polyester gelcoat. All wetted fittings are of molded fiberglass construction and are an integral part of the separator.

2. The standard coalescing media pack is constructed of PVC. Optional media packs are available constructed of CPVC or Polypropylene.

3. All unit piping is of corrosion resistant PVC construction

APPLICATIONS:

- Automotive Maintenance
- Bus terminals
- Chemical plants
- Electro Plating
- Glass factories
- Lens grinding
- Oil fields & Refineries
- Pulp and paper mills
- Rolling mill quench oil
- Steel Mills
- Tramp oil separation
- Wire drawing operation
- Airports
- Bulk plants
- Cosmetic industry
- Metal Fabrication
- Grinding and Honing
- Military bases
- Petroleum plants
- Railroad yards
- Steam cleaning
- Textile mills
- Utility companies
- Wash racks
- Truck maintenance terminals



ITEM	QTY	DESCRIPTION
1	1	INLET CHAMBER
2	1	INLET DISTRIBUTOR
3	1	SEPARATION CHAMBER
4	1	COALESCING MEDIA
5	1	ADJUSTABLE OIL SKIMMING WEIR
6	1	EFFLUENT WEIR
7	1	EFFLUENT SHEEN BAFFLE
8	1	EFFLUENT CHAMBER
9	1	REMOVABLE LID WITH HANDLES
10	1	ROTARY PIPE SKIMMER

ITEM	QTY	DESCRIPTION
11	1	SLUDGE COLLECTION CHAMBER
12	1	OIL RESERVOIR
13	1	SIGHT GLASS ASS'Y (OPTIONAL)
14	1	INFLUENT
15	1	EFFLUENT
16	2	SLUDGE OUTLET
17	2	OIL OUTLET
18	2	OIL RESERVOIR INLET
19	2	OIL RESERVOIR OUTLET

	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	PROJECTED MEDIA SURFACE AREA			WEIGHTS (lbs)		(gal) SLUDGE	(gal) SEPARATION	(gal) OIL
	H	L	W		WL			DIA	DIA	(sq. ft.)					CHAMBER	CHAMBER	CHAMBER
MOEL #	A	B	C	D	F	G	H	J	M	#16	#21	#34	SHIPPING	OPERATING	CAPACITY	CAPACITY	CAPACITY
COWS-2	34	64	31	18	21	13.5	22.5	2	2	30	42	68	75	840	16	54	15
COWS-4	37	76	31	21	27	20	22.5	2	2	60	84	136	150	920	16	69	13
COWS-8	49	76	31	33	39.5	20	22.5	2	2	120	168	272	250	1760	16	137	13
COWS-12	49	76	43	33	39.5	20	22.5	3	3	180	252	408	350	2720	26	206	28
COWS-16	49	76	55	33	39.5	20	22.5	3	3	240	336	544	450	3650	36	274	42
COWS-24	55	88	55	39	46	32	22.5	4	3	360	504	816	750	4970	70	334	59
COWS-36	67	88	55	48	57	26	22.5	4	3	540	756	1224	1000	6740	70	501	59

For further information contact.

Represented By:

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