

### FOR OIL FIELD AND PRODUCED WATER

Over the last two decades AATech, Inc. has supplied water treatment systems to oil field operations, both locally and nationwide. The ever present need for increased oil recovery necessitates the supply of extremely low hardness waters for steam and caustic flood recovery techniques. Downstream softening systems require oil removal down to 1-5 ppm. An ideal filtration system to obtain this low oil effluent is a nut shell filter. AATech's nutshell filters are an excellent choice for pre-treatment prior to softening because of their trouble free operation.

This line of packaged water treatment equipment was developed mainly for oil field steam flood water treatment. The units are virtually trouble free as there are no moving parts and there are no VOC emissions due to leaking seals or stuffing boxes as are associated with external mixers.

Our unit remains on line while an external scrub tube is serviced resulting in no loss of production. A quick change scrub tub screen allows for fast service if plugging does occur. Our under drain system is proven to take high differential pressure without the worry of screen collapse or loss of media. This under-drain system also provides excellent distribution during cleaning so that there is no solids or oil hide-out in the media bed.

Operation in service is same as a conventional down flow filter with no additional internals or moving parts inside the filter. During cleaning, media is transferred through an external scrub tube with straight through operation. There are no sharp turns or annular area to cause media blockage as compared to other external scrub tube designs.

The AATech Nutshell Filters offer many features as standard that may be optional by other equipment manufacturers. Many years of valuable field experience allows AATech to provide a system designed to our high standards for unattended service with a minimum of routine maintenance. AATech Nutshell Filters are an excellent choice for any boilers, heaters, or generator pretreatment where oil and solids removal is required.



#### STANDARD FEATURES

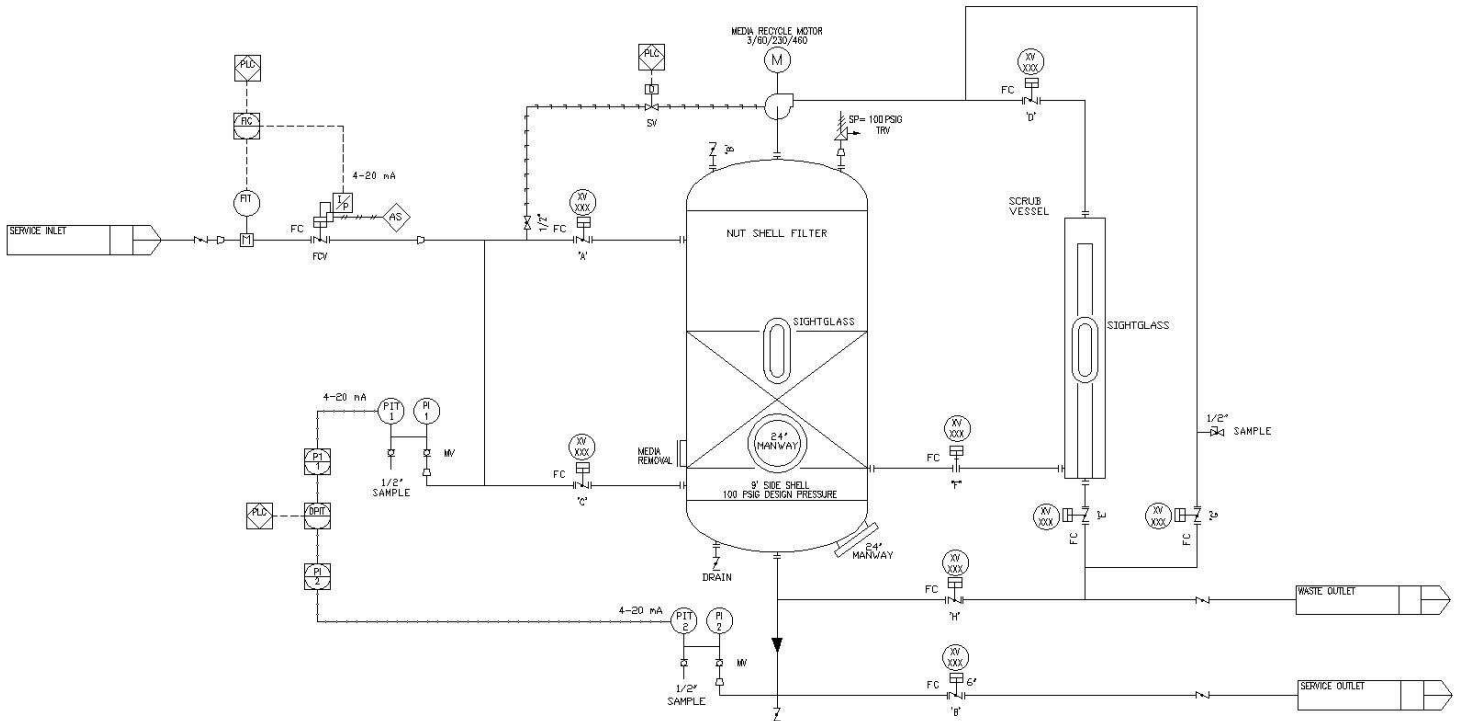
- Skid mounting, minimizing field costs
- Recirculation Pump
- External Scrub Tube
- Sample cocks for water testing
- Viewports to verify media level during service
- 100 PSI ASME code vessels/epoxy lined
- ASME B31.3 carbon steel face piping
- Polyurethane coated exterior for corrosion control
- 316SS non-lined wetted materials
- Solenoid operated automatic valves actuated by local programmable controller
- Class 1, Division 2, Group C or D area usage

#### OPTIONAL FEATURES

- Corrosion Allowance
  - Polymer Injection System
  - Epoxy Lined Piping
  - Oil Analyzer
  - Custom PLC controls
  - Human machine interface screens
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## SPECIFICATIONS

MODEL NUMBER (1000 BPD)	VESSEL DIAMETER (INCHES)	MAXIMUM CAPACITY (GPM)	APPROXIMATE SHIP WEIGHT (LBS)	LENGTH (FEET)	WIDTH (FEET)	IN/OUT PIPE SIZE (INCHES)	MINIMUM POWER (HP)
NSF-2	30	70	8,000	13'-0"	9'-0"	2	3
NSF-3	36	100	12,000	13'-6"	9'-6"	2	5
NSF-5	48	150	14,000	14'-6"	12'-0"	3	7.5
NSF-8	60	250	16,000	15'-6"	14'-0"	4	10
NSF-10	66	300	17,000	20'-0"	16'-0"	4	15
NSF-15	78	450	18,000	23'-0"	16'-6"	6	20
NSF-20	96	700	20,000	25'-0"	18'-0"	6	30
NSF-30	108	860	24,000	26'-0"	19'-0"	6	40
NSF-35	120	1000	28,000	27'-0"	20'-0"	8	40
NSF-40	132	1300	32,000	28'-0"	21'-0"	8	50
NSF-50	144	1500	36,000	30'-0"	22'-0"	8	60
NSF-60	156	1800	38,000	31'-0"	23'-0"	10	75
NSF-70	168	3200	42,000	32'-0"	24'-0"	10	100



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