

T e r r y R u d d y S a l e s

A division of 667762 Alberta Ltd.
9329 62 Avenue
Edmonton, Alberta T6E 0E1
Phone: 780-435-0324, Fax: 780-413-0090

Toll Free: 1-877-435-9690
E-mail: teer@telusplanet.net
Web Page: www.terryruddysales.com

February 02, 2007

Miramar Mining Corporation
300 – 889 Harbourside Drive
North Vancouver, BC
V7P-3S1

Attn. Mr. Larry Connell

Larry,

Enclosed is a photo and a operations/maintenance manual on a oily waste water process system. This system is currently being used at the Boston Camp in Nunaviut Territories.

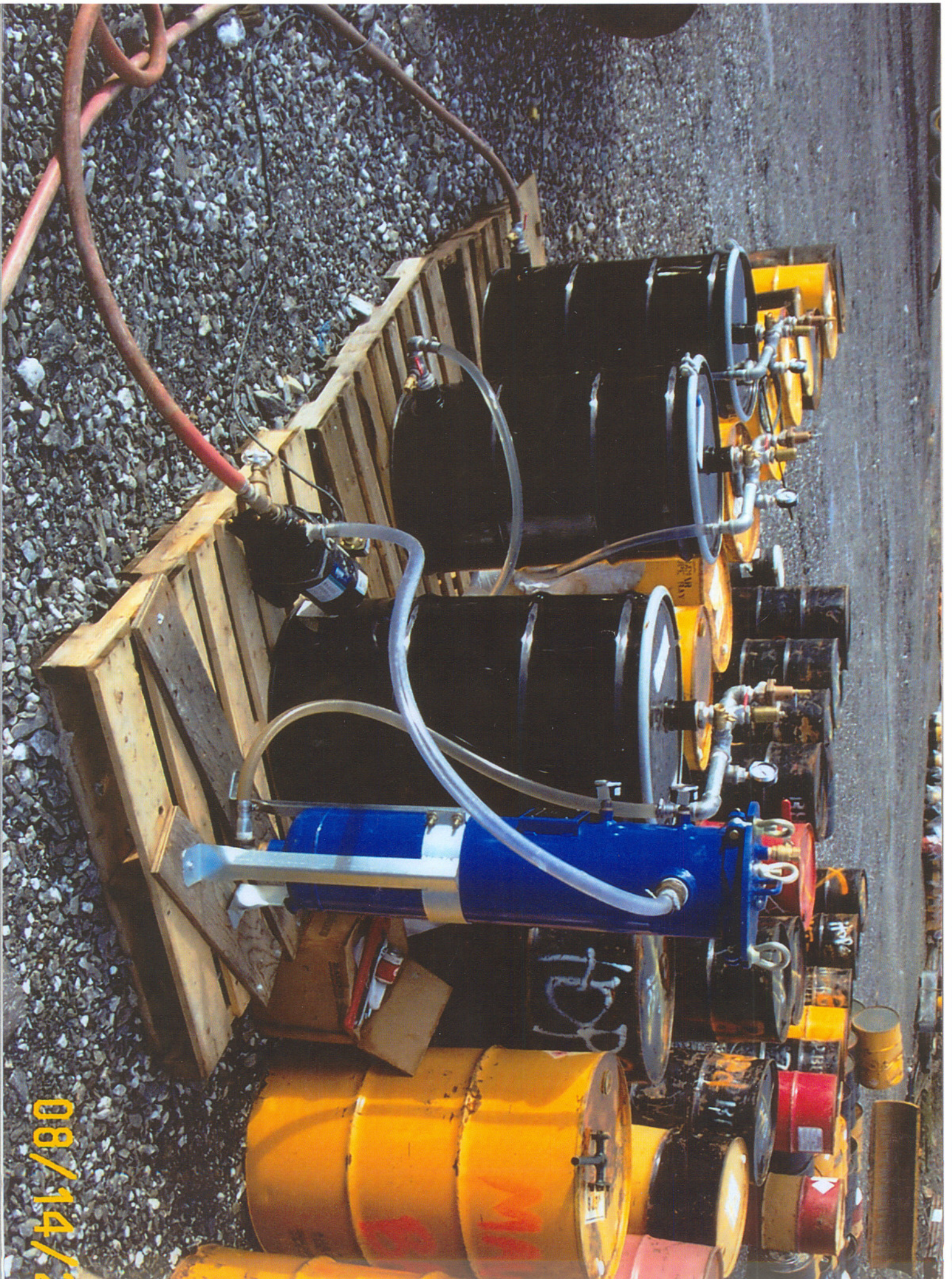
The system operates at 5 to 7 gpm. without supervision. In the first drum, a product known as technical minerals is used. This media will blind off when it reaches its absorbent capacity. The two drums following contain a water based carbon used for polishing. The discharge should read "non-detectable traces" on testing.

If you have questions, feel free to call out toll free number

Regards

Terry Ruddy





08/14/2

**OPERATING &
MAINTENANCE
MANUAL NO. C5121**

FOR

**Miramar Hope Bay Ltd.
Boston Camp**

**“FLOW & PLUG”
(Oil Absorption Equipment)**

**Model No: F11-C-180-TM-Cx2
Maximum Pressure: 10 PSI
Product: Oil Absorption Equipment**

**Sold & Serviced by:
Terry Ruddy Sales
9329 – 62 Avenue
Edmonton, AB T6E 0E1
Telephone – 780-435-0324
Fax – 780-413-0090**

Miramar Hope Bay Ltd. - Boston Camp

Flow and Plug System (Oil Absorption Equipment)

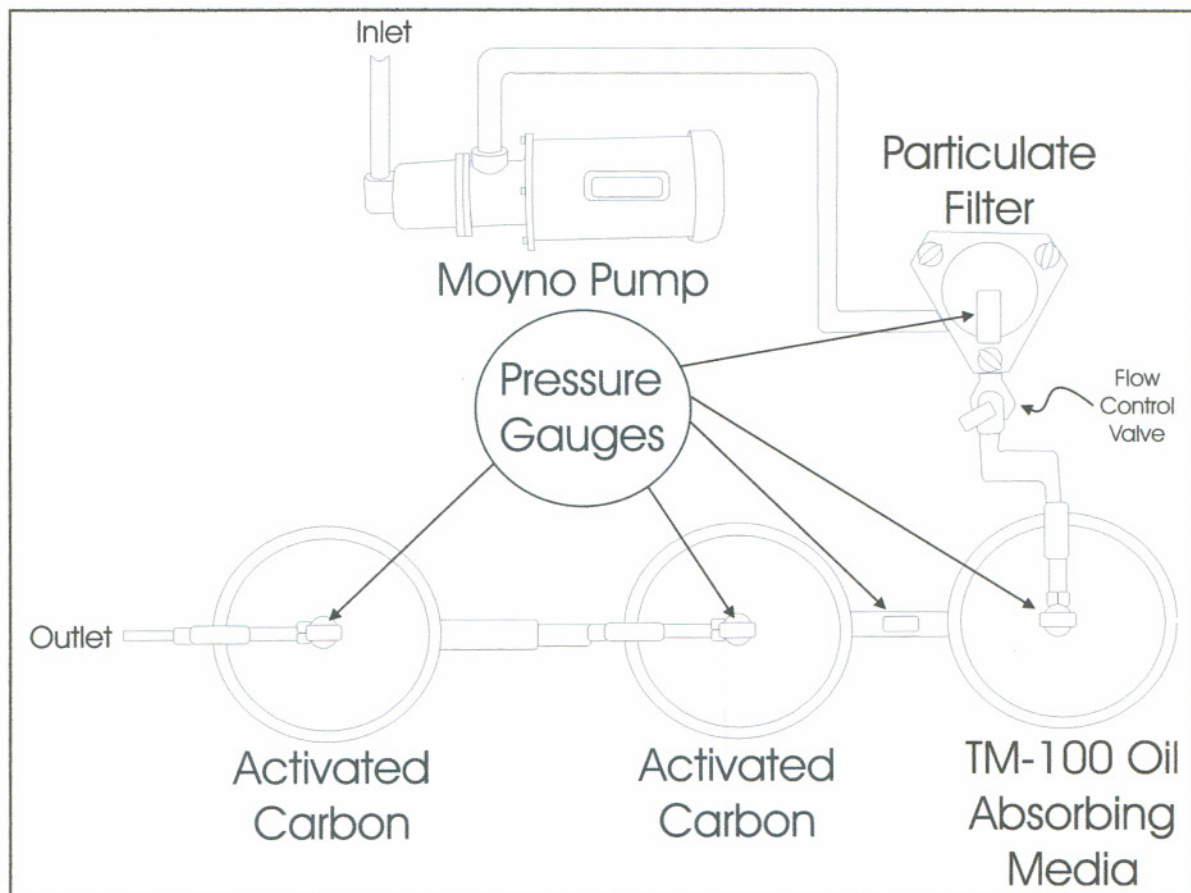
General Description

The F-1 "Flow and Plug" Oil Absorption System is the simplest, most efficient and versatile method of removing oil and grease in waste water streams to a level below 15 PPM as regulated by the Ministry of the Environment. (Not recommended for chemical Oil Emulsions).

The F-1 system consists of 4 basic units:

- 1) a Monyo self-priming electric pump,
- 2) a particulate filter,
- 3) the oil absorbing media,
- 4) two activated carbon media containers connected in series.

Figure 1 – Overview



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Overview

- 1) The Monyo self priming pump, * see separate pages covering installation, operation, trouble shooting and parts breakdown beginning on page
- 2) The Particulate Filter is a pre-filter to effectively remove any dirt and dust particles, which would prematurely plug the oil absorbing media. It is a bag filter system consisting of the pressure vessel, the micron rated disposable filter bag and restrainer basket (to support the bag filter).

The disposable filter bag is a triple layered bag having a filter rating of approximately 1 micron. It will hold 1-2 pounds of dry solids before becoming plugged.

Rapid access to the filter bag ensures a quick and easy clean-up of the vessel, since filtered out contaminants are trapped within the bag. "Spaghetti" (strips of oil absorbing polypropylene) is added into the clean filter bag to enhance the dirt holding capacity by up to 5 times.

- 3) The TM-100 Oil Absorbing Media is contained in a removable disposable drum. The drum is specifically coated with epoxy to make it both chemical and abrasive resistant. The TM Media absorbs oils and grease through a partitioning phenomena. A unique characteristic of the media causes a slight swelling of the bed as it removes the hydrocarbons from the contaminated liquid. At a maximum pressure of 8 PSI, stoppage of the pumping action through the system is required as the media is saturated and needs to be replaced thus eliminating the flow of unfiltered liquid into the environment.
- 4) Activated Carbon, GC 12 X 40, is a virgin activated carbon derived from bituminous coal. Granular in form, it is ideal for many liquid phase applications including the removal of organics from water streams. Its superior absorptive capacity and the surface area make it particularly attractive for use in waste water while its size makes it appealing where low pressure drop is needed.

The net result is oil/grease readings, in the output water, will be well below 15 PPM. Enabling the water to be sewerable.

The second Activated Carbon drum, similar to item 4, is added for further polishing the water

WARNING

THIS FILTRATION SYSTEM IS DESIGNED WITH DISPOSABLE F-1 FILTER PRODUCTS OF THE TYPE AND MODEL SPECIFIED IN THE OPERATION INSTRUCTIONS MANUAL AND DRAWINGS. SAFE OPERATION AND PERFORMANCE IS GUARANTEED USING THE SPECIFIC FILTERS. WE WILL NOT GUARANTEE THE PERFORMANCE AND FUNCTION OF THE SYSTEM WITH OTHER MAKES, MODELS OR TYPES. ANY ACCIDENTS OR DAMAGES CAUSED BY USING INCORRECT, NON-SPECIFIED FILTERS AND MEDIA ARE THE FULL RESPONSIBILITY OF THE OWNER OR USER.

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Installation

Remove the unit from the shipping crate, being careful not to damage any of the projecting connections.

Caution

Do not attach slings to any nozzles welded to the unit. Be sure not to place slings on the frame of the unit.

Important

Be sure to correctly identify the inlet and outlet connections of the unit to avoid piping the unit backwards. The filter will not perform if the connections are reversed.

Proceed with the required piping. Tighten all bolts evenly and securely. Check to make sure that the filter bag has been installed in the filter vessel before tightening the top cover bolts.

Drain piping should be led away from the unit. The water drain lines can be connected into any common drain system.

After all connections have been made and all bolts tightened securely, the unit is ready to be placed into operation.

Note – Leveling

The F-1 “Flow and Plug” system should be level to 1/8 inch per foot to be conducive to proper operation.

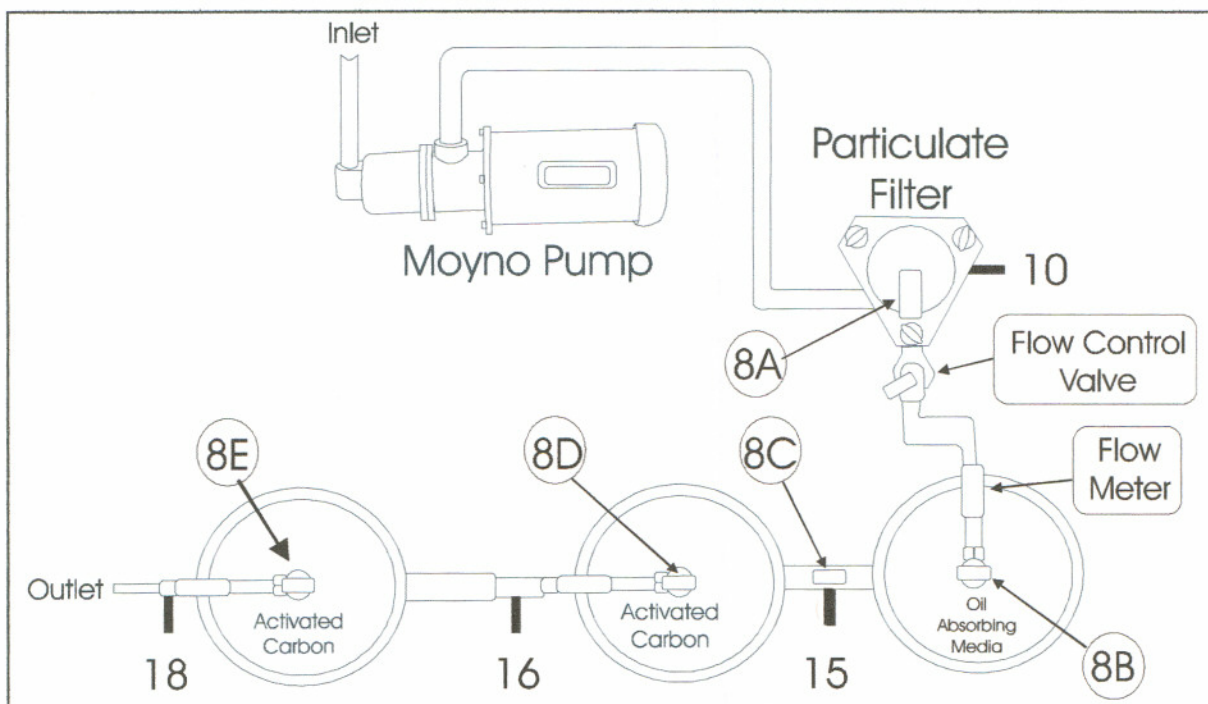
Operation

The system requires a minimum amount of attention after the initial installation. Differential pressure readings should be made and recorded on initial start-up.

Operating Limit Parameters

- 1) Pump must be properly electrically grounded. Read the separate operations and ownership manual starting on page ____.
- 2) When the differential pressure across the Particulate Filter vessel, as shown on pressure gauge (8A), reaches 15 PSI, the pump needs to be stopped and the filter bag and the “spaghetti” inside the filter bag should be changed.
See CHANGING THE FILTER BAG – Page 7 of these instructions
- 3) When the differential pressure across the oil absorbing drum (3), as shown by the gauge (8B), reaches 8 PSI, the pump should be shut off, because the absorbing drum is saturated and needs to be replaced.
See INSTRUCTIONS FOR CHANGING OIL ABSORBING DRUM – Page 9 of these instructions
- 4) Check flow meter (13) and if flow is greater than 19 LPM immediately adjust with flow control valves.

NOTE – If flow is greater than 19 LPM, treated water quality will worsen, due to speed of flow through system. If excessive flow and or pressure (greater than 15 PSI) is allowed, then damage to and leakage of drums will occur.

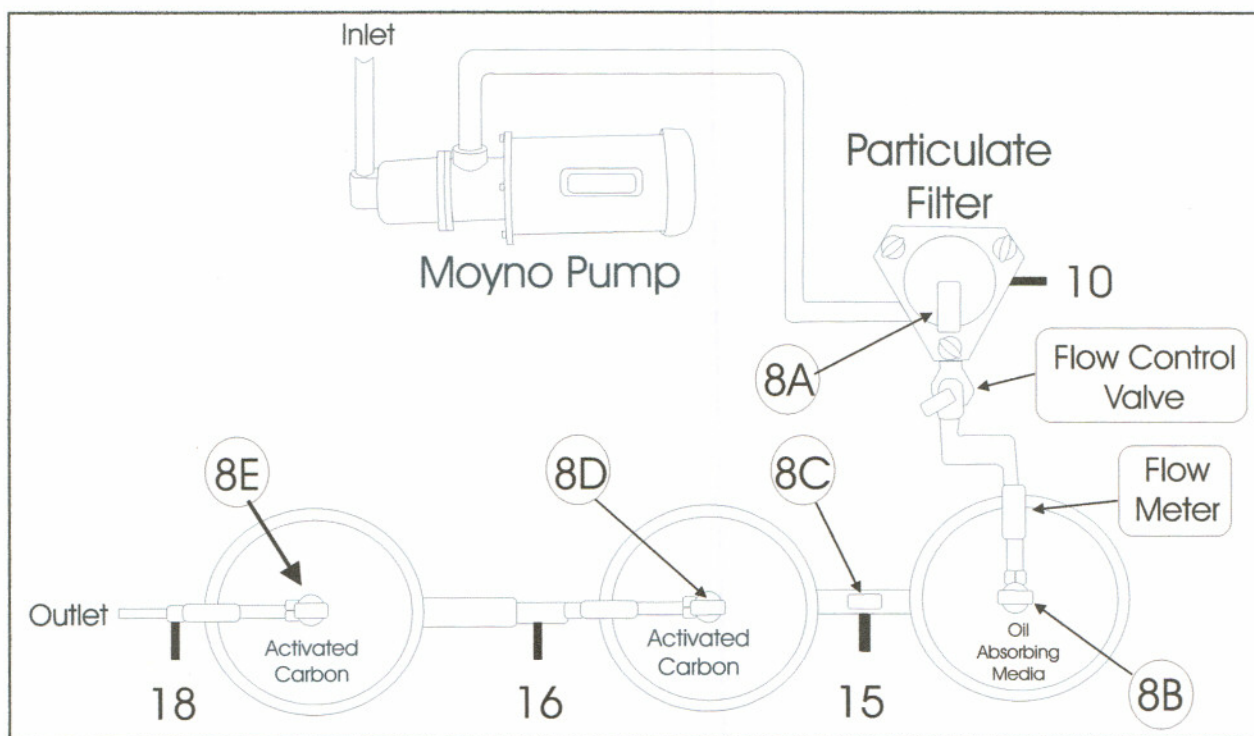


Initial Purging of Air From the Oil Absorption System

- 1) Connect drain hose to the final carbon absorbing drum (4B).
- 2) Close all drain valves (10-15-16-18)
- 3) Slightly Open flow control valve (11).
- 4) Allow water to fill the system to purge all air trapped in filters.
- 5) Allow water to flow approximately 15 minutes after system is filled to ensure all trapped air is removed from filters as well as small particulate matter in the TM-100 Media and Activated Carbon are removed.
- 6) Observe the pressure gauge readings (8A, 8B and 8C) and record pressures over bag filter, TM Media drum and Activated Carbon drum for further reference.
- 7) Samples of incoming water may be taken from sampling drain valve, samples of discharge water after filtration may be taken from sampling drain valves (15-16-18).
- 8) The system is now ready to treat your waste water.

NOTE

The unit should only be drained when changing filter elements OR when no longer in service. The oil absorbing media must be immersed in water to eliminate air pockets which would effect is oil absorbing capabilities.



Changing Filter Bag

**** CAUTION ****

The most important step in changing filter bags, is to make sure that the pressure in the filter vessel is relieved **prior** to opening the unit. This is accomplished by opening the drain valve at the discharge on the filter.

- 1) Check the pressure gauge (8A) on top of the particulate filter bag. Should this gauge register 15 PSI. or greater, the filter bag is plugged and change-out is required.

Particulate Filter



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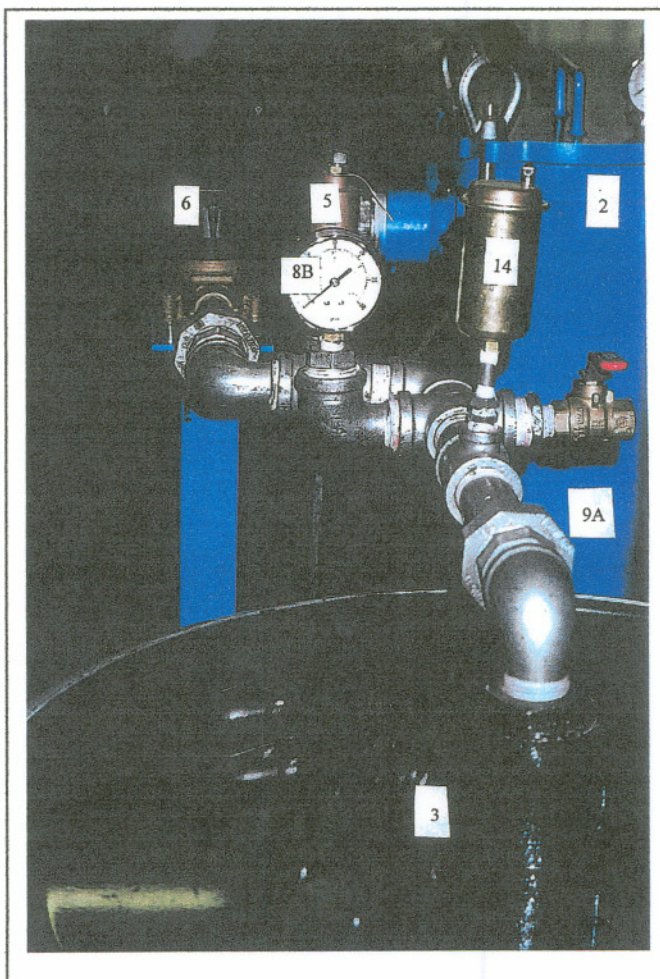
- 2) Shut the system off by turning pump switch (23) off.
- 3) Shut off valves before (11A) and after (11) the filter bag vessel
- 4) Open the filter bag drain valve (10). The product drained from the filter may contain oil and should be piped or collected accordingly. This will also relieve any internal pressure.
- 5) Wait 5 minutes to allow the water in the filter bag vessel to drain. Check pressure gauge (8A) to make sure there is no pressure in the system.
- 6) Loosen the bar knobs on the lid so that they are free and the eye bolt assembly can be swung away from the housing.
- 7) Remove "Spaghetti" from bag filter. Remove and discard saturated filter bag.
- 8) Insert the clean filter bag into the restrainer basket(already installed) and form the bag to the contours of the basket by pressing against the restrainer basket.
- 9) Insert new "Spaghetti". Take small handfuls and push firmly to the bottom of bag. Repeat until the filter bag is filled.
- 10) Check positioning of the O-ring which should be properly seated in the filter. The ring of the filter bag must be seated in the edge provided by the restrainer basket.
- 11) Replace the hold down device.
- 12) Close cover carefully. (Do not drop) Tighten the bar knobs evenly and securely. (Slight hand downward force is necessary to compress bag hold down device.)
- 13) Close the drain valve (10)
- 14) Partially open the flow control valve (11).
- 15) Re-open the main flow control valve slightly (11A).
- 16) Unit is ready to operate. Adjust the flow control valves (11, 11A) accordingly, to the correct flow rate of 5 to 7 gpm.
- 17) Record in the log book, the **Time/Date and Cubic Meters** processed for the bag filter change.

INSTRUCTIONS FOR CHANGING OIL ABSORBING DRUM

**** CAUTION ****

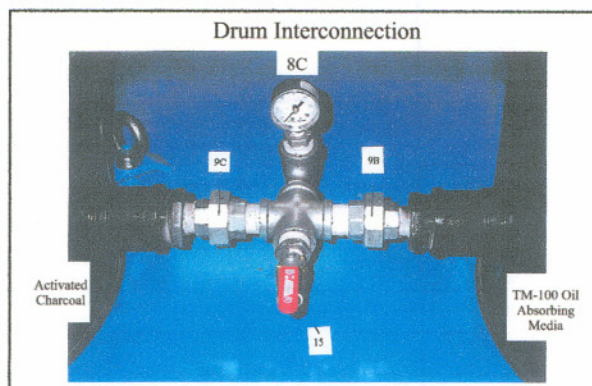
The most important step in changing the oil absorbing drum, is to make sure that the pressure in the drum is relieved **prior** to opening the unit. This is accomplished by opening the drain valves at the discharge on the .

- 1) Check pressure gauge (8B) to confirm the oil absorbing drum (3) is plugged and requires change-out (8 PSI. maximum).
- 2) Turn off the electricity to the pump.
- 3) Close the flow control valve (11A) located at the inlet on the bag filter.
- 4) Open the drain valve (10) at the bottom of the bag filter to relieve internal pressure
- 5) Open the sample valve (15) between the T-M drum and the carbon drum (4A) to remove any water which may remain in the drum.
- 6) Wait 10 minutes to allow any drain water to escape.



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- 7) Undo the union (9A- illustrated on previous page) on the inlet and (9B – illustrated below) on the outlet of the spent drum.



- 8) Release the drum hold down devices by unscrewing the eye nuts at the base of the drum.

**** CAUTION ****

NOTE the saturated weight of the drums and media is approximately 500 pounds. The drums need to be handled with proper lifting equipment to remove them from the skid.

- 9) Remove the spent drum.
- 10) Replace with the new drum.
- 11) On the new drum - Remove the 2 inch coupling cap seals on the top centre and bottom side.
- 12) On the spent drum - Remove the top centre threaded inlet and install this inlet on top centre of the new drum.
- 13) On the spent drum - Remove the bottom threaded outlet and install this outlet connection to the bottom of the new drum.
- 14) On the spent drum - Install the 2 inch coupling cap covers which were removed in step 11, above.
- 15) On the new drum - Install and retighten the unions (9A) on the inlet and (9B) on the outlet of the newly installed TM-100 Oil Absorption Media Drum.
- 16) Tighten all the drum hold down devices by tightening the eye nuts at the base of the drums.
- 17) Close the drain valves (10) and sample valve (15).
- 18) Open the flow control valve (11).
- 19) Restart the pump. Ensure that the flow rate is at or below 19 LPM. If not adjust the flow control valve accordingly.
- 20) Record in the Logbook the Time, Date and Cubic Meters processed at the time of this TM-100 Oil Absorption Media change out.

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Instructions for Changing the Activated Carbon Drums

**** CAUTION ****

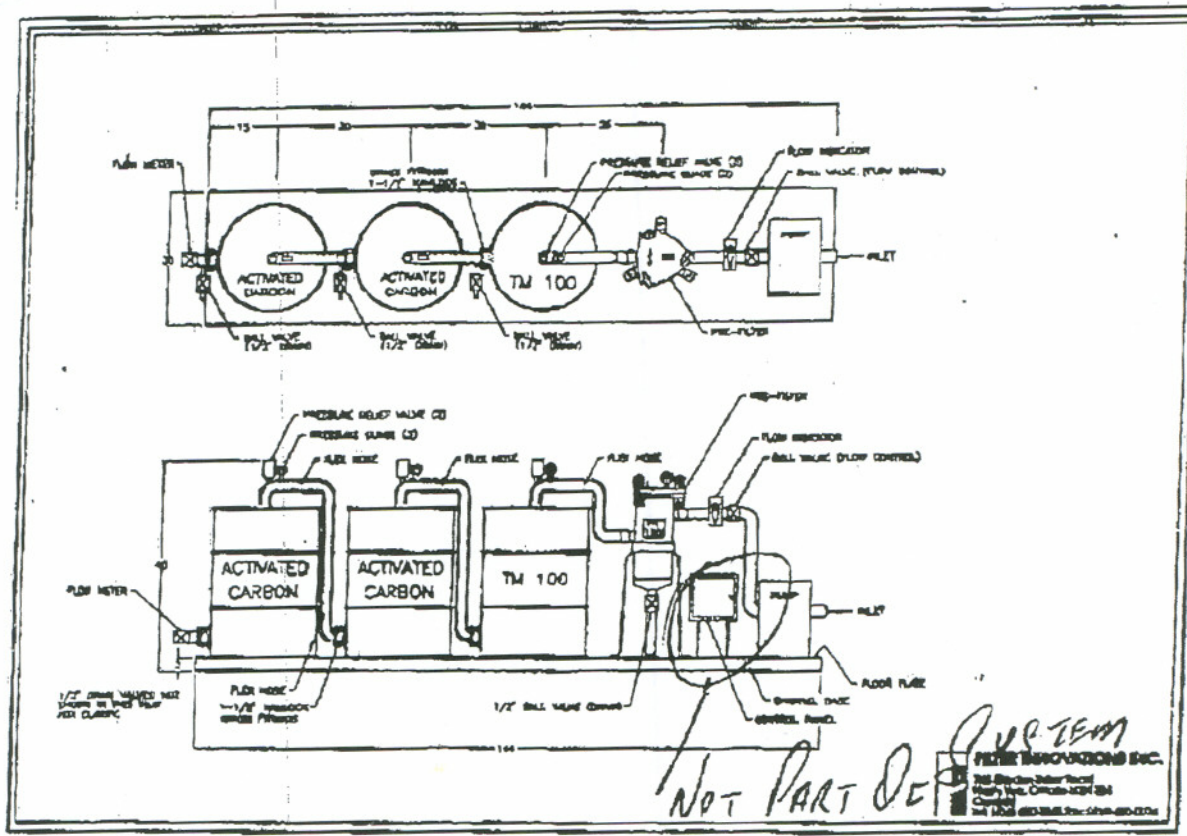
The most important setp in changing the Activated Carbon Drum is to make sure that the pressure in the system is relieved prior to removing the drums. This can be accomplished by opening the sample valve at the inlet to the Activated Carbon Drum

- 1) Check the water sample from the sampling valve (16 and 18) If the water quality is the same then the carbon drum (4A) is saturated and needs to be replaced.
- 2) Turn off the electricity to the pump.
- 3) Close the flow control valve (11) prior to the inlet of the TM-100 Oil Absorption Drum.
- 4) Open the Sample Valve (15) at the bottom of the TM-100 drum to relieve any internal pressure and remove any water which may remain in the drums. Wait 15 minutes to allow any drain-water to escape.
- 5) Undo the union (9C) on the inlet and (9D) on the outlet of the first Activated Carbon Drum.
- 6) Release the drum hold down devices by unscrewing the eye bolts.
- 7) Undo the union (9E) on the inlet and (9F) on the outlet of the second carbon drum.
- 8) Remove the discharge hose.

**** CAUTION ****

NOTE the saturated weight of the drums and media is approximately 250 pounds. The drums need to be handled with proper lifting equipment to remove them from the skid.

- 9) Remove the first Activated Carbon Drum (4A)
- 10) Move the second Activated Carbon Drum (4B) to the position of the first drum (4A).
- 11) Install a new Activated Carbon Drum in the place left by the just moved drum.
- 12) Exchange drum lids between the spent drums and the new carbon drum that is now in position two. The inlet connections are now in position on the new drum and the spent drum is now ready to be sealed for safe transportation.
- 13) Retighten the drum hold down lids securely.
- 14) The new drum, which has the newly placed inlet lid and outlet connection, is now ready for hook-up.
- 15) Replace the outlet piping and union (9F) on the second carbon drum.
- 16) Retighten the union (9F).
- 17) Transfer the piping between carbon drums one and two.
- 18) Replace and tighten the union (9E) on the inlet of the second carbon drum.
- 19) Replace and retighten the union (9C) on the inlet of the drum and (9D) on the outlet of the first carbon drum.
- 20) Close sampling valve (16) and open flow control valve (11).
- 21) On restart of the system ensure that the flow is at or under 19 LPM. If not adjust the flow control valve accordingly.
- 22) Record in the Logbook the Time, Date and Cubic Meters processed for the Activated Carbon Drum changes just made.



CONTINUOUSLY REMOVES OILS AND ORGANIC CONTAMINANTS FROM INDUSTRIAL AND NATURAL WATERS

The only waste water discharge systems which permit continuous process operations while allowing you to meet or exceed government regulations for the direct discharge of effluents to sewers or natural watercourse. Each "System" has two important features:

- It permits the continuous absorption of oil, greases, PCB's, pentachlorophenols and other large molecular weight organics; and
- Upon saturation it signals and shuts down the discharge systems.