



Retrofit MSR Media during installation at Washington State Hydroelectric facility

*As Green, Green, Green as It
Gets!™*

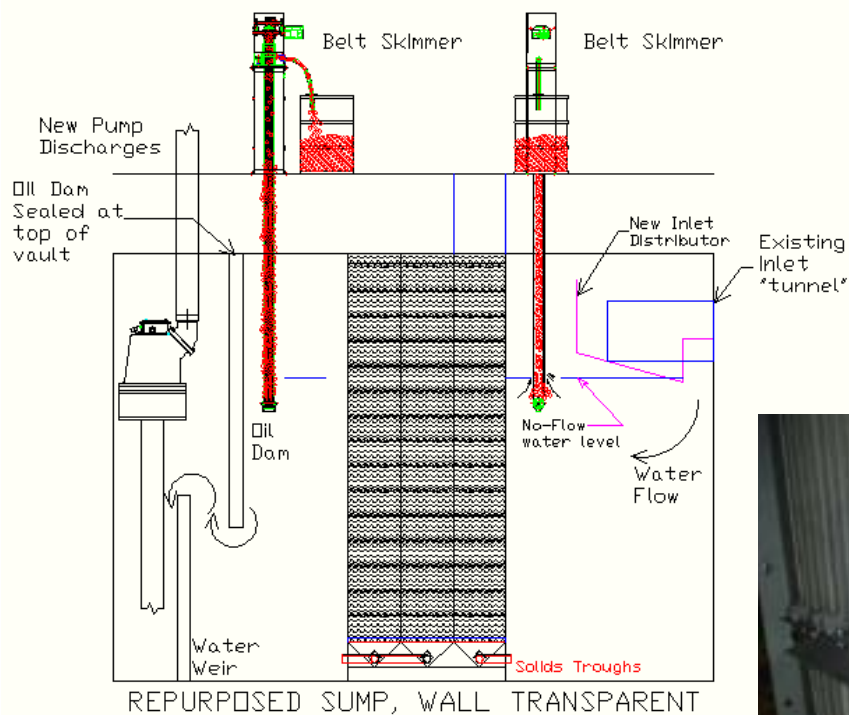
*MSR COALESCING MEDIA HAS NO MOVING PARTS, NEEDS NO
CONSUMABLES, AND THE RECOVERED OIL IS RECYCLABLE!*

Consulting and Equipment for Separation of Oil
and Water at Hydroelectric and other Power
Generation Facilities

MSR Can Provide Retrofit Media Systems for Many Applications

Hydro Station Sump Retrofit

The engineers in a 5.4 MW Hydro station in Canada had a problem with their effluent water. They had a large quantity of effluent water to treat -- approximately 18,000 US GPM, and they needed to treat it effectively to ensure the river downstream of the facility was kept clean. There was very little room within the powerhouse to install a separator and if the separator was to be installed above grade, the resulting piping and larger separator would be very expensive. MSR consultants found a way to repurpose the two existing sumps into oil water separators, and saved the facility an estimated \$500,000. Slight modifications were made to the sump configuration and the pumps were relocated from the side of the sump to the end



Detail of the front of the media system, showing intermediate supports which were required because of the extreme height of the system.



To retrofit the sump with media, it was necessary to cut a large access hole in the ceiling of the sump, move the three pumps from the side to the downstream end of the separator, install media, and new inlet distributor, and outlet oil dam/water overflow weir system. Two new belt skimmers were also installed to remove the accumulated oil.

MSR Replacement Media Systems

A planned major expansion at a hydroelectric dam in Western Canada caused the requirements for treating turbine leakage water to increase dramatically. This meant that the 1993 vintage fiberglass tank separator was inadequate for the newly increased flow. MSR consultants were able to design a retrofit system and increase the allowable flow rate to double the original design flow by adding new high-efficiency media and making minor changes in the system. The new media is also much less affected by solids than the previous design.

The photo shows the unit as modified using the MSR high-efficiency media. The old media hold-down grating was reused with the new design.



MSR Steel and Stainless Steel Systems

The photo shows one of a set of three Stainless Steel units manufactured for hydroelectric facilities in northern Ontario and provided with MSR high-efficiency media. These units are designed to be encased in concrete up to the lip at the three locations and are specifically arranged for unattended operations.



Separators for all Aspects of Hydro Operations



Hydro Storage Facility

One of two separators installed at a hydro transformer and equipment storage yard in BC.



Hydro Transformer Station

Typical unit as used at transformer stations in BC.



Hydro Transformer Storage facility

One of several units installed at a large Ontario transformer yard

Complete Service:

Mohr Separations Research offers complete consulting, design and equipment service in removing oil from water. We utilize a proprietary process simulation program to custom design each separator so that you can be sure that the effluent water will meet your regulatory requirements.

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