



Organoclay

Biomin, Inc.

GUARDIAN

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CASE HISTORY

HOW DO YOU SAVE \$1 MILLION?

By Cleaning Water with the Organoclay/Carbon Combination

Three Million gallons of wastewater being housed in a tank at a former manufactured gas plant site (MG&P) needed to be treated and removed. The goal was to remove certain contaminants from the water to meet local wastewater discharge standards and facilitate the removal of trapped tar beneath the water.

The gas and water which needed to be removed were contained in huge steel tanks. The water was contaminated with mechanically emulsified tar oil-in the form of xylene and benzene-that floated on top of 1.5 foot of coal tar, along with other contaminants. Once the water was removed, the tar could be removed and the tanks cleaned. However, both the xylene and benzene needed to be removed before the water could be discharged. The critical contaminants were: PNA's, BTEX's, oil, and heavy metals. The discharge limits for benzene and xylene were: 74 ppb and 134 ppb, respectively.

Three different methods using different technologies were attempted. Costs were compared.

At first, a wastewater hauler proposed to truck the water to a hazardous waste water treatment facility. The cost: \$.45/gal, or

\$1,350,000.-. This method was considered too costly and not pursued.

Then a new set up was proposed, and implemented: An oil/water separator, followed by bag filters, and two activated carbon filter vessels with each containing 6,000 lb carbon. The carbon was spent within two to three days, because of blinding by oil.

At this point, Biomin, Inc, was contacted, and I suggested the use of organoclay to prevent blinding of the carbon. I told them our Golden Rule: If you want the volatile organic hydrocarbons and metals removed, you must get the oil first!!!! One filter containing 9,000 lb of Oilsorb EC-100 organ-

oclay was placed ahead of the carbon vessels. The organoclay captured the oil first, allowing the carbon to operate at maximum efficiency. It also helped remove the BTEX's, further extending the life of the carbon. The system operated for six weeks, until all the water had been cleaned up successfully, and discharged. The cleanup not only included the wastewater, but also the wash water from the tank cleaning operation. The organoclay was not spent at this point. The overall savings to the owner of the facility was \$990,000.-!!!! Needless to say, he was very happy with the success of using our product, Oilsorb EC-100 organoclay.

Wastewater Analysis before and after Treatment:

Chemical	Influent Concentration Microgram/l	Effluent Concentration Microgram/l
Benzene	19,430 or less	9.88
Toluene	8,835 or less	3.9
Ethyl Benzene	1,560 or less	ND
Total Xylene	7,130 or less	9.23

Oil content: Less than 50 ppm.

***You could begin your own success story
by placing a call to Biomin, Inc. at: (248) 544-2552.***

What is Oilsorb EC-100 Organoclay?

It is a bentonite modified with quaternary amines, which is granulated and blended with anthracite. The anthracite prevents early blinding of the interstitial pores. Droplets of oil and other non-polar organic hydrocarbons, upon contacting the amine chains of the organoclay, which stick into the water, will partition into the amines and become fixed to the clay. This activity is taking place "outside" of the clay platelets,

rather than inside of pores as with activated carbon. It is for this reason that organoclay lasts "7 times as long as activated carbon", and lowers operations costs "by 50% or more". Organoclay is handled in the same manner as activated carbon. Upon installation the vessel is filled with water and allowed to stand over night, until all trapped air escapes. Occasionally it is back washed at twice the inflow pressure.

Disposal

Disposal is into landfills if non-hazardous, or it is used as fuel in cement kilns due to its high BTU rating (15,000 btu), if hazardous.

In the next issue we will talk more about operation and disposal, and present another true and exciting case history.

References and a performance guarantee are available on request.

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**Another Case History for
Oilsorb EC-100 Organoclay**

Save 50% of Operations Costs!
*by extending the life of activated carbon
by 7 times.*

Manufactured Gas Plant Waste Water Clean-up!

Tips for Water Filtration

Tip for water filtration, including pointers and recommendations for the most effective "OILSORB"/carbon filtration method.

- filter to 5 microns prior to filtration.
- Avoid filtering water below a pH of 5.
- Remove all ferrous irons and manganese prior to filtration.
- Use low ppm hypochlorite to prevent bio-fouling.
- Always soak the "OILSORB" and carbon prior to use, for at least two hours (overnight if possible), to release entrained air and increase filter capability.
- Use post filtration of 0.35 micron for PCB and other low level discharge compounds. This will prevent false positives due to fines which will wash off the carbon.