

Case History No. 7 – Soft Drink Manufacturer THM Reduction in Incoming Water

Fluid:	Incoming mains water
Temperature:	ambient
Pressure:	4 - 5 barg
Flowrate:	2.5M3/hr
Line size:	1 1/2"

A client who bottles soft drinks and juices for many of the leading Irish & UK supermarket chains also bottles soft drinks for a world leading soft drinks manufacturer. They had a problem in that the level of **Trihalomethanes (THM's)** was in excess of 100 – 140 micrograms/litre. The World Health Organisation (WHO) maximum admissible level is 100 micrograms/litre and the multinational for whom our client is bottling has a target level of 50 micrograms/litre. THM's are compounds which are believed to be **carcinogenic** and are formed by **chlorine in the water combining with organics** which are present in the water.

Problem:-

The local authority water treatment plant is very old and is being pushed over capacity; it will be several years before they have the budget to upgrade it. To provide biologically safe water the local authority may be overdosing with chlorine. If the client does not bottle with water of the necessary quality they will lose the contract from the multinational blue chip client. They bottle their own product at a flow rate of 8m³/hr and bottle for the multinational on approx. 36 days per year at 2.5m³/hr.

Solution:-

We installed an organic scavenger (36x72") after their existing **sand filter** prior to their existing 8m³/hr carbon filter (36" diameter x 72" high vessel) which was designed for dechlorination. The scavenger will remove the organics which combine with the chlorine to form THM's. We also installed a 36 x 72 carbon filter on the 2.5m³/hr line for absorption of the THM's that may be present. The water passes through **Sand filter, Organic scavenger, Dechlorination Carbon Filter, THM removal carbon filter** and finally some **polishing cartridge filters**.

Result:-

Water analysis to date has shown that the raw water **THM levels of 100 – 140 have been reduced down to 0-5 micro grams / litre**. Well below the W.H.O. recommendations and well below the clients requirements. They will most likely change the carbon out every 6 months or so.