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## Episode 31 MetSorb HMRG Powerful Metals Media

Speakers: Michael Urbans & Bennet Buchsieb of Graver Technologies

MetSorb HMRG is a titanium dioxide adsorbent. It is a fine white granular product. MetSorb maintains a higher capacity and a lower level of ion interference than competitive iron and alumina based products. Unlike ion exchange resin it holds onto the ions rather than exchanging ions.

Selectivity – it will remove arsenic III and arsenic V. On Arsenic III you get about 60% less life. At startup it will be non-detect and it picks up more arsenic III than any other media currently on the market.

A full water analysis is required before applying the media. Iron and manganese will take up HMRG sites so it's better to pre-treat for them. Pre-treatment with a water softener will remove the iron but the HMRG likes hard water. Soft water will reduce at least 15% of bed life.

If you use Greensand, Katalox Light or Pyrolox Advantage type medias for iron removal, the iron can complex with the arsenic and be removed. However, be careful of the capacity or loading factor. Greensand like products will not hold the arsenic forever. These iron filters will change the arsenic III to V so you can take full advantage of the MetSorb capacity.

### Application

- Empty Bed Contact Time is 1.5 to 3 minutes which is extremely fast. Smaller tanks can be used.
  - At 50ppb a lead lag system is required.
- Backwash upon start up and periodically to fluff the bed and prevent channeling.
  - Backwash at 4 gpm per ft<sup>2</sup> or 2.4 gpm in a 10" tank.
- If using a single tank include a no hard water bypass to shut off the water while the unit is in backwash. Otherwise use twin backwashing systems.
- MetSorb does not release contaminants during backwash.
- Like GAC, bacteria may build up on MetSorb and cause an odor problem. If this happens use chlorine or hydrogen peroxide to shock the bed and kill the bacteria. This should become part of a regular maintenance schedule.
- pH has no effect on MetSorb. It will not desorb but it favors a lower pH. Obviously, not lower than 6.5 but not 8 or 8.5.

### Other contaminants:

- MetSorb has an affinity for radiological contaminants. Radiological capacity tests are currently underway.
- There are about 10 different metals that have an EPA limit equal to or lower than arsenic. For example, the limit for mercury is 2ppb, antimony is 6 ppb. MetSorb will pick up these metals as well. It pays to get the full water analysis.



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#### Disposal

- Laws do not regulate the disposal of MetSorb used in point of use or point of entry systems.
- For larger municipal applications, treating hundreds or thousands of gallons per minute, a TCLP (Toxicity Characteristic Leaching Procedure) is required.
- MetSorb will not release contaminants into the ground.
- Any job with a DEP focus, where paperwork must be filed be sure to observe all the governing rules. Chain of Custody is critical in these situations.

#### Metsorb Brochure

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