

Elmosa Seawater Intake and Outfall Systems

Why you should install the InvisiHead intake head and outfall diffuser:

- 1. The Elmosa Seawater Intake and Outfall Systems** are at the cutting edge of seawater intake and discharge technologies. The InvisiHead Intake head has been designated by the US EPA as the best technology available for its non-admittance of marine life, sediments, and debris and full compliance with the environmental standards especially the latest Rule 316b in addition to the economics of the system <http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/>
<http://www.powermag.com/epa-issued-final-cooling-water-intake-316b-rules/>
http://www.amecosys.com/elmosa/#no_impingement/, no fish or any marine life gets into the InvisiHead and through to the plant - <http://www.amecosys.com/elmosa/IH2013.1.jpg>;
- 2. Since the development of the InvisiHead** all wire and mesh screening systems including rotating drums and traveling screens are no longer needed to be an integral part of any seawater intake system. By design and nature of operation, the InvisiHead does not admit sediments, debris, or marine life including fish-adult and juvenile– http://www.amecosys.com/elmosa/#no_impingement/;
- 3. The InvisiHead makes money in the form of O&M cost savings.** The payback period is reached within a few months after the system goes into operation- http://www.amecosys.com/elmosa/#The_InvisiHead_makes_money ,
www.amecosys.com/elmosa/Comparison_The_InvisiHead_and_Screens-Sep.2014.pdf,
http://www.amecosys.com/elmosa/Cost_Comparison_between_the_InvisiHead_and_wedge-wire_screen_intakes.pdf;
- 4. We are seawater intake and outfall professional consultants** and we own the InvisiHead and NatSep technologies and manufacture the InvisiHead equipment. We supervise installation if requested by the client. Due to the technological breakthrough made by the InvisiHead, 0\$ is paid for O&M- http://www.amecosys.com/elmosa/#Self_Reliant ,
- 5. We can custom-tailor the design and fine-tune the system** to fit local operation conditions and site requirements. The InvisiHead is also environmentally friendly, supports biodiversity, meets and exceeds the US EPA standards by 40% i.e. the EPA calls for a flow max intake head entrance velocity of 0.15m/s while the inlet and outlet velocities of the InvisiHead are 0.09m/s and 0.11m/s respectively – too slow to drive in marine life and debris. The velocities can be easily predominated even by weakest marine currents that will carry through and flush out any astray suspended solids into the ambient again. Approach velocity is as low as 0.002m/s
http://www.amecosys.com/elmosa/#water_enters_InvisiHead ;



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6. The lower the approach and entrance velocity the lower the admittance of sediment. The approach velocity at 5m away from the InvisiHead entrance is less than 0.002m/s rises to 0.09m/s and leaves the InvisiHead at about 0.11m/s still lower than most of local marine current velocity. Those current velocities will drive out of the system if any get in and back into the environment again - <http://amecosys.com/elmosa/IH-Flow-Schematics.jpg> ,
<http://www.amecosys.com/elmosa/IH-Flow-SchematicsII.jpg> ;

7. Still, we can configure a NatSep Onshore to remove silt (62 micron) and larger from flow although the default target cut-line sediment is very fine sand (125 micron) and larger and deliver clean water to the suction bells of the seawater pumps. This process can relieve the RO pretreatment systems of heavy SS loads.

<http://amecosys.com/elmosa/EmosaCompleteSWIS.jpg>;

<http://amecosys.com/elmosa/NatSepE.jpg>;

<http://www.amecosys.com/elmosa/#velocities>:

8. Self-flow management guides smooth frictionless flow through the InvisiHead cutting down pumping costs to the amount of energy needed to neutralize friction at the intake pipe -

<http://www.amecosys.com/elmosa/#Negligibly> low head loss at 0.00017m,

http://www.amecosys.com/elmosa/IH_flow_management.pdf

Technical sheet Elmo/2014



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