

Induced Air Flotation

Solid-Liquid Separation Technology

Feb 04

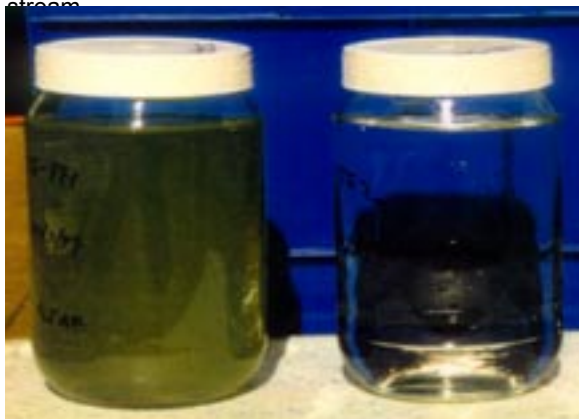


IAF PROCESS - Jameson Cell

The IAF (induced air flotation) Jameson Cell process is ideal for many solids-liquid separation applications. The wastewater stream containing the solids is pre-treated with flocculants and then gently introduced to the top of the cell. A portion of the clean effluent is recycled back to the top of the cell as a liquid jet that entrains air into the process. The IAF process thereby utilises the energy of the fluid to induce air into the process rather than requiring an external compressor or blower. The air bubbles attach themselves to the flocculated solids giving them buoyancy and enabling them to be floated and form a sludge layer that is removed over a launder while the cleaned wastewater passes to the next stage in the process. The "Jameson" Flotation Cell technology is owned by EGL (The Environmental Group Ltd) of Australia. ARMATEC Environmental is the New Zealand representative for the EGL.

BENEFITS OF IAF PROCESS

- **No Compressor - Saves Running Costs:** The induced air process does away with the need for a compressor or blower and reduces running costs.
- **Small Footprint - Saves Space:** The Jeflote process has a smaller footprint than other flotation and separation technologies saving you space.
- **Fast Separation - Reduced Capital Costs:** The larger air bubble size means faster separation rates so the equipment size and capital costs are reduced.
- **Intermittent Operation - Flexible:** The IAF process can be started and stopped at any time. With the appropriate sized balance tank at the front of the IAF process, the operational time for the IAF unit can be optimised to handle a variable flow wastewater stream.

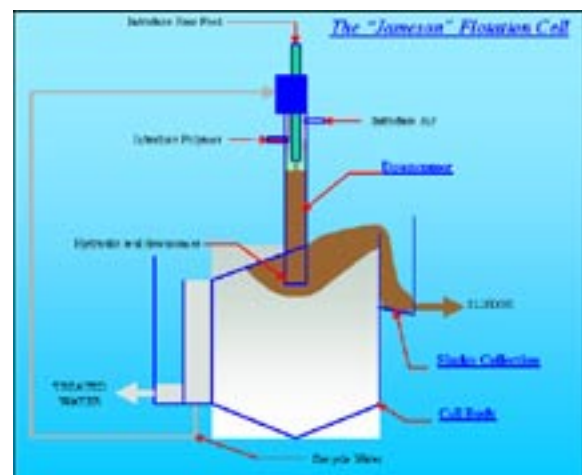


The IAF Jameson Cell solids-liquid separation process cleans up dirty water (left) to produce clear water (right).

GENERAL APPLICATIONS

- Primary treatment of waste water.
 - Algae removal.
 - Phosphorus removal.
 - Biomass (solids) removal.
 - Oil and grease removal.
 - Water reclamation for re-use.
 - Effluent polishing.
 - Dairy processing wastewater.
 - General industry wastewater.
 - Winery wastewater.
 - Abattoir wastewater.
- Indeed any situation where solids need separating from a wastewater stream.

IAF JAMESON CELL DIAGRAM



IAF PROVEN TECHNOLOGY

Example installations by EGL in Australia ... more detail available on request:

- **Municipal Wastewater:** Wagga Wagga, Wangaratta, Koorngal.
- **Industrial Wastewater:** Newcastle & Sydney.
- **Dairy:** Plants at Cobden & Koroit, Victoria.
- **Poultry:** Plant at Nerang, Queensland.
- **Oily Water:** Plant at Port Kembla, NSW.
- **Commercial Kitchen:** Plant at Sydney.
- **Winery:** Plant at Mildura, Victoria.
- **Brewery:** Plant at Yatala, Queensland.

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IAF INSTALLATIONS ... by EGL in Australia



IAF at 4ML per day wastewater treatment plant.



Tertiary treated water overflow at municipal WWTP.



Algae and phosphorus sludge separated from municipal wastewater treatment plant treated effluent.



Complete industrial waste water treatment plant including IAF for solids-liquid separation.

PILOT PLANT AVAILABLE IN NZ

A fully equipped pilot plant is now available in New Zealand for doing site trials for separating solids from liquids using the Jetflote induced air flotation process. This pilot plant is available from ARMATEC. Also available is bench jar testing equipment for trialling ranges of flocculants. All enquiries welcome.

PILOT PLANT TRIALS AT WAIHI

At Waihi, the effluent from the town's oxidation pond has above limit levels of algae and phosphorus. The Hauraki Plains Council identified that IAF was a technology that could rectify this problem. Subsequently IAF pilot plant trials were done at Waihi to optimise the chemical requirements, demonstrate the technology to stakeholders, and allow the finalisation of full scale plant design and costing.



Jetflote pilot plant trials being done on location beside the oxidation ponds at Waihi.



The green sludge of algae and phosphorus separated from the Waihi oxidation pond effluent.

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