

FARADAYIC[®] Process and E-CLEAN[™]

Objective:

This project demonstrated the feasibility of combining the patented FARADAYIC[®] Process with a modular reactor to remove amalgam constituents from dental waste streams.

Summary:

Faraday has developed an emerging technology designed to provide low-cost decontamination of amalgam constituents, such as mercury and silver, found in dental waste water. The commercial potential of this technology is enormous. As the final design of this technology will be modular, the capacity of the treatment system will easily be increased or decreased. Therefore, this system will be applicable to both large dental clinics and single users.

Simultaneous removal of insoluble amalgam particles and soluble mercury from dental waste water has been demonstrated with the E-CLEAN[™] system. Dental waste water from a clinic at Wright Patterson Air Force Base was treated and the total mercury concentration was decreased from 100 ppm to less than 2 ppb. The mercury concentration was reduced to less than 50 ppb within approximately 90 minutes.



Background:

The patented FARADAYIC[®] Process is an electrochemical technology that utilizes a controlled electric field to solve environmentally-challenging problems. Since the FARADAYIC[®] Process is electrically mediated, it does not require aggressive chemicals to facilitate the process as needed in

conventional chemical processes. The process rate is determined by the applied electric field, which is user-defined and computer controlled. This provides the means for precise control of the length and total output of the process.

The FARADAYIC[®] Process technology illustrated above is protected by a substantial patent portfolio including issued, allowed, and pending patent actions.

