Removal of Fish Oil from Rehabilitation Pools Using a Portable Water Filtration System

The amount of fish oil waste and wastewater generated in seabird rehabilitation pools needs to be reduced to prevent contamination of feathers from re-circulated water, and lower the costs associated with generating wastewater. This presentation evaluates the effectiveness of using a custom-designed portable filtration unit to remove fish oil from a marine rehabilitation pool.
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Background

- After decontamination, oiled birds are moved to outdoor rehabilitation pools to regain waterproofing and improve body condition.
- Diet in pools = fish.
- Excrement contains digested fish oils that can re-contaminate feathers.
Current Solution
Materials and Methods

- Filter Specialists X100 housing
- Oil adsorbing filter bag (25µm)
Original Study Plan

- 3 volumes of fish oil added to rehabilitation pool with closed filtration loop
- Field test at SFBOWCEC
Trial 1
K9 SHINE is an all-natural product derived from fish. K9 SHINE helps in the grooming and general good health of our friends.

K9 SHINE is a derivative of a natural product, fish. K9 SHINE helps in the grooming and general good health of our friends.

Store at room temperature out of direct sunlight. Suggested serving: Add to food, 1 tsp. or 5 mL per 30 lbs / 13.6 Kg of your dog's body weight per day.

Lazer's Pet Supplies
Woods Harbour, Shelbourne Co.
NS B0W 2E0 Canada
Email: ggoreham@klis.com

Contains Marine OMEGA-3
Calculating Dose of Oil

- 4.34g of oil extracted per 10.64g of fish*
  - ~40% of fish weight
- Estimated 1kg of smelt fed / COMU / 24h
- 40% of 1000g = 400g
- 400g ~ 400ml

Water Sampling

- Water samples collected from pool inflow and outflows
- 0min, 5min, 15min, 30min, 60min, 120min, 240min, and 24h after oil added
T+15min
T+240min
T+240min
T+24h

- Water clarity in pool was excellent
- Light sheen of oil visible in water of filter housing
Trial 1 Results

• Filter pressure
  – No change through T+240min
  – At T+24h
    • X100 increased by 1psi
    • Sand decreased by 2psi
Trial 2
Trial 3
Total Extractable Hydrocarbons

Sig. positive correlation (p=0.042)
What’s Next?
Questions?