

Crab and shrimp processing

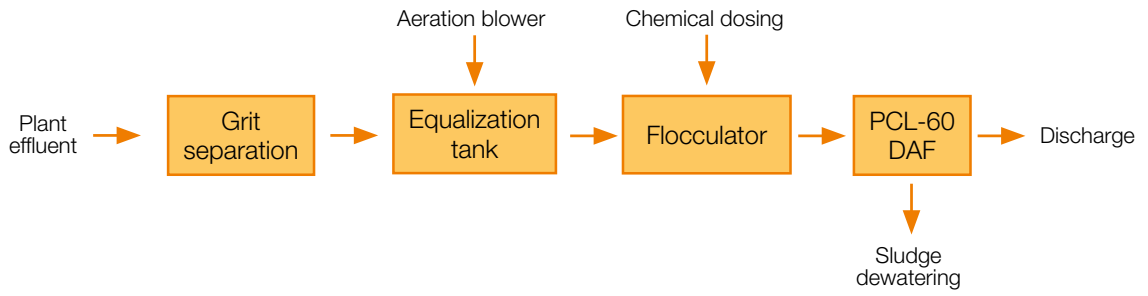
The seafood processing plant receives and processes Dungeness Crab directly from Grays Harbor in Westport, Washington. The facility produces whole cooked crabs, crab sections, fry legs, and crab meat. They are also the largest processor of Pacific cold-water shrimp in the world.

Plant wastewater is generated during raw product washing, evisceration, cooking, cooling and general production floor sanitation. The water consists of gritty and oily materials which contribute to elevated levels of TSS and COD.

The wastewater pre-treatment system consists of preliminary grit separation and equalization, followed by chemical treatment in a pipe flocculator. A plate-pack style dissolved air flotation system separates the floating solids and discharges effluent that meets the water quality requirements.



Solution delivered



Equipment supplied

- 114 m³ aerated EQ tank
- Chemical dosing equipment
- F-8 flocculator
- PCL-60 DAF system
- Electrical control panel

| | Design parameters | Discharge requirements |
|------|---------------------------|------------------------|
| Flow | 3'274.4 m ³ /d | |
| TSS | 2'000 mg/l | < 100 mg/l |
| COD | 3'000 mg/l | < 1'000 mg/l |
| pH | 4 - 9 | 6.5 - 7.5 |

DAF sizing calculations

Hydraulic surface loading rate

$$= \frac{\text{Feed flow + recycle flow in m}^3/\text{h}}{\text{Effective surface area in m}^2}$$

$$= \frac{136.3 + 29.5 \text{ m}^3/\text{h}}{x \text{ m}^2} = 2.4 \text{ m}^3/\text{m}^2/\text{h}$$

$$= 69.1 \text{ m}^2 \text{ required}$$

Solids loading rate

$$= \frac{\text{Weight of TSS in feed in kg/h}}{\text{Free surface area in m}^2}$$

$$= \frac{272.2 \text{ kg/h}}{x \text{ m}^2} = 36.6 \text{ kg/m}^2/\text{h}$$

$$= 7.4 \text{ m}^2 \text{ required}$$

