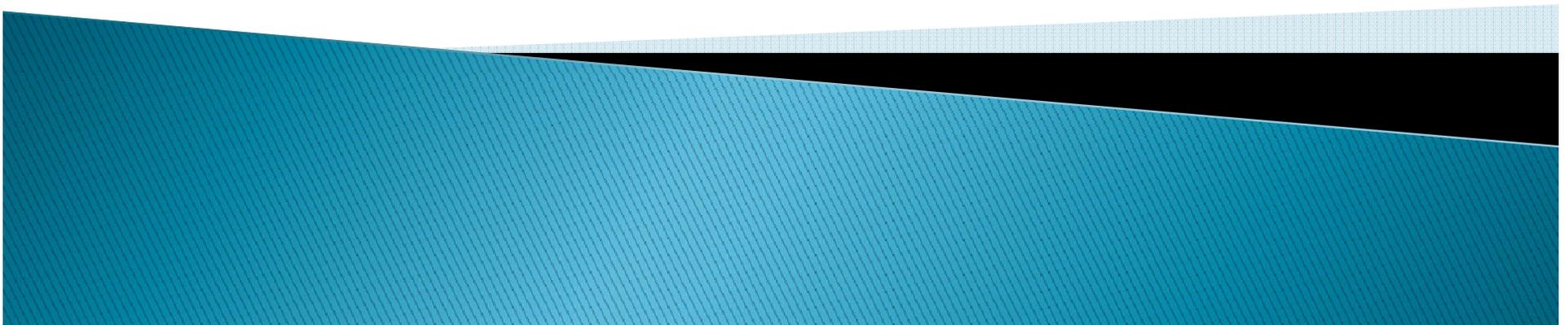
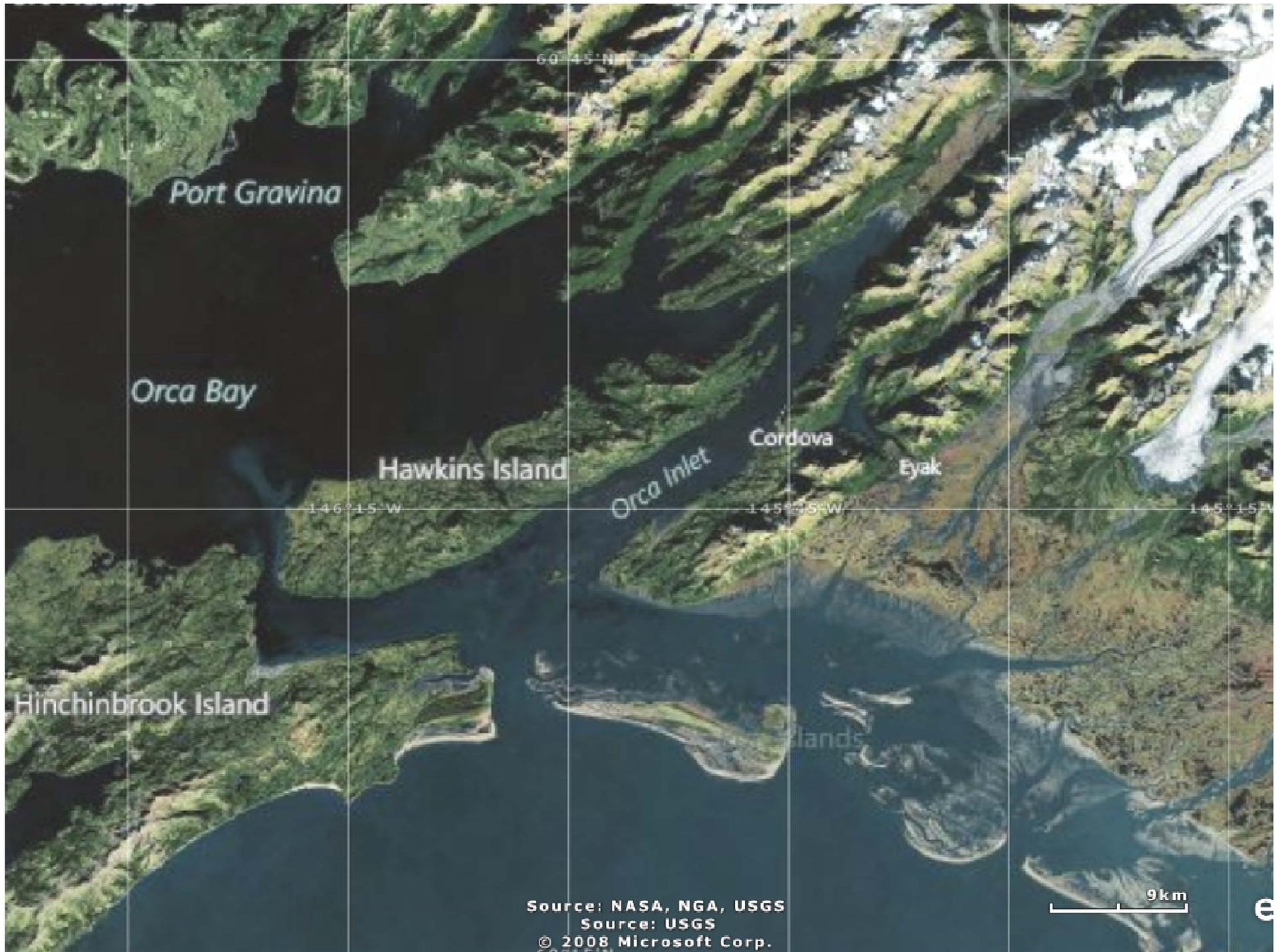


Domestic Wastewater Scenario

City of Cordova Wastewater
Treatment Plant













Facility Background

- ▶ Facility is owned by the City of Cordova
- ▶ Provides secondary treatment of domestic wastewater from residential and supporting commercial sources
- ▶ Serves a population of approximately 2,600 people
- ▶ No significant industrial sources
- ▶ Design flow of 0.7 mgd



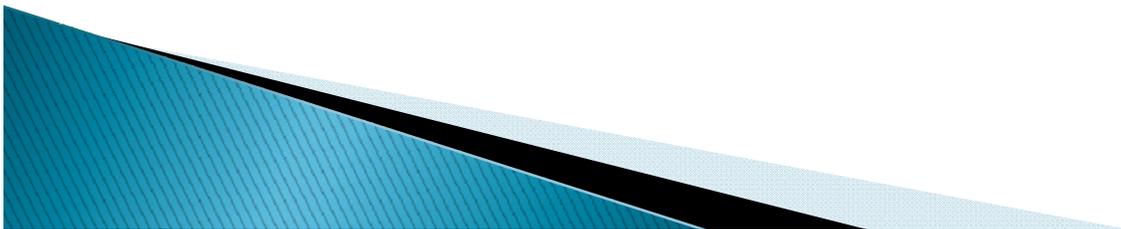
Permitting History

- ▶ Plant was installed in 1974 and EPA issued a permit for primary treatment requirements
- ▶ In 1977 a permit was reissued with a construction schedule to achieve secondary treatment
- ▶ EPA has reissued the permit four more times
- ▶ In 2011 DEC reissued an APDES permit



Treatment Process

- ▶ Facility is an aerated activated sludge plant
 - A grit chamber
 - Aeration tanks
 - A clarifier
 - A chlorine contact basin
 - Backup micro-screens
- ▶ Discharge through an outfall pipe that extends approximately 800 feet from shore to a depth of 15 feet below mean low water



















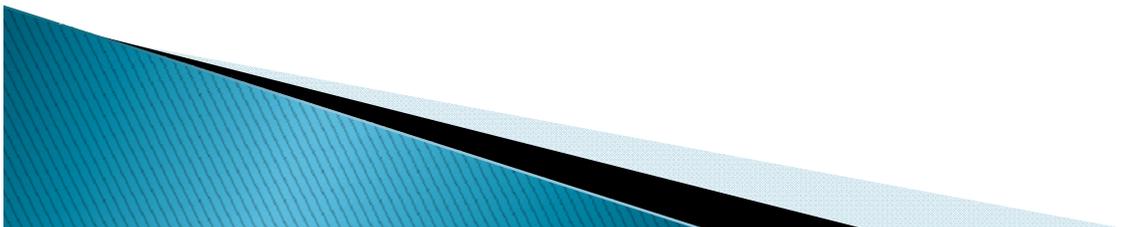
Receiving Water – Orca Inlet

- ▶ Has not been reclassified
- ▶ Does not have site-specific water quality criteria established
- ▶ Protected for all marine water designated use classes
 - Aquaculture, seafood processing, and industrial water supply
 - Contact and secondary water recreation
 - Growth and propagation of fish, shell fish, aquatic life and wildlife
 - Harvesting for the consumption of raw mollusks or other raw aquatic life



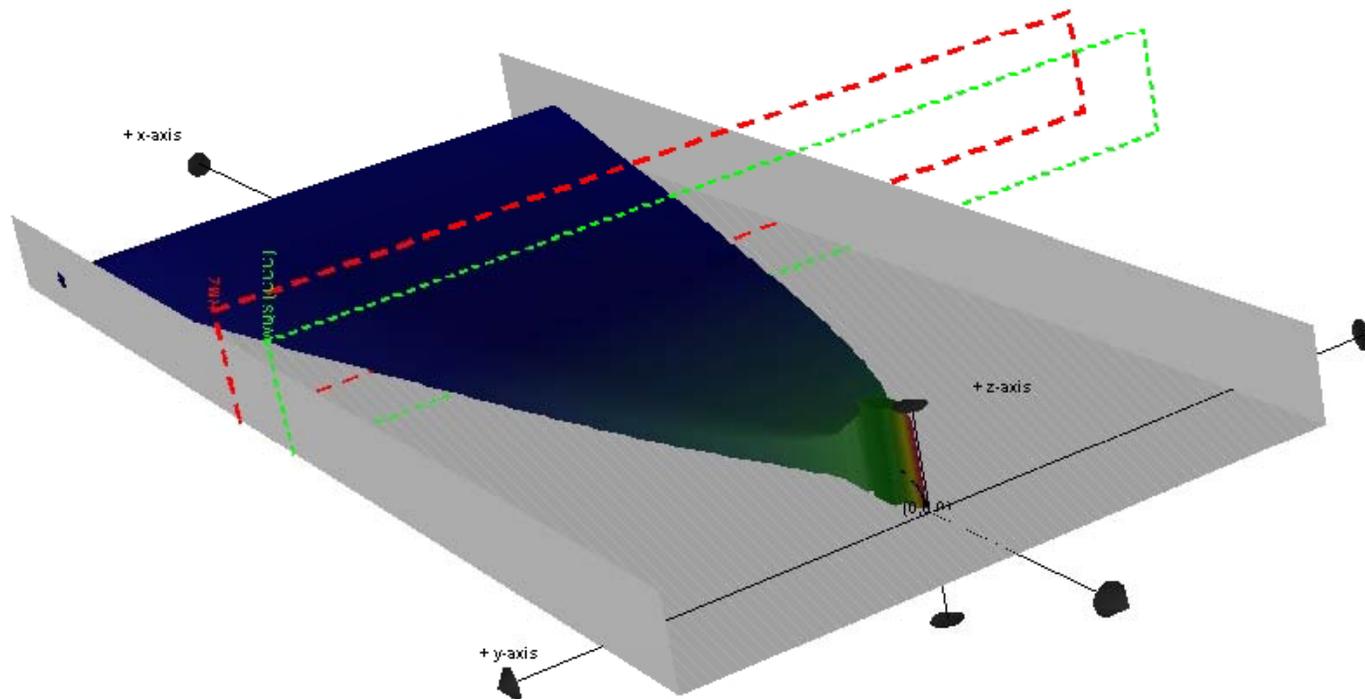
Permit Reissuance Process

- Data was reviewed
- Reasonable Potential Analysis conducted
 - Fecal coliform bacteria
 - Ammonia
 - Total residual chlorine
- Modeling of wastewater plume was conducted
- Mixing Zone size determined
- Effluent limits determined



Mixing Zone





Relative Centerline Concentration
bacteria/100ml
1e+004 0.0

Distortion Scale:
Y:X = 1.05 Z:X = 15.30 ROV = 1000.00 m

- Toxic Dilution Zone (TDZ - CMC)
- Regulatory Mixing Zone (RMZ)
- Water Quality Standard (WQS - CCC)
- Module boundary (MOD)
- Plume Centerline
- Lateral Boundary Interaction

City of Cordova Wastewater Treatment Plant Mixing Zone

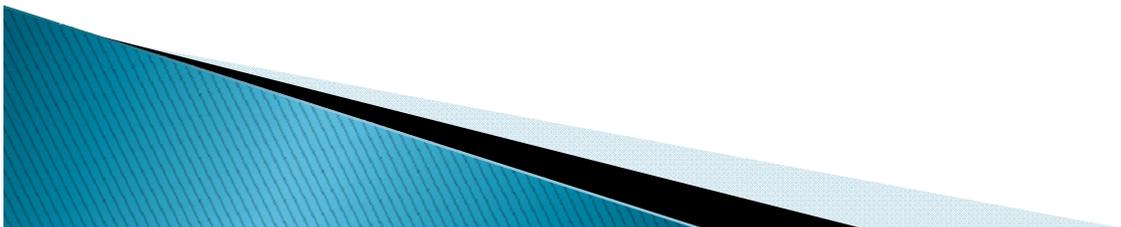
920 meters X 200 meters



Effluent Limits

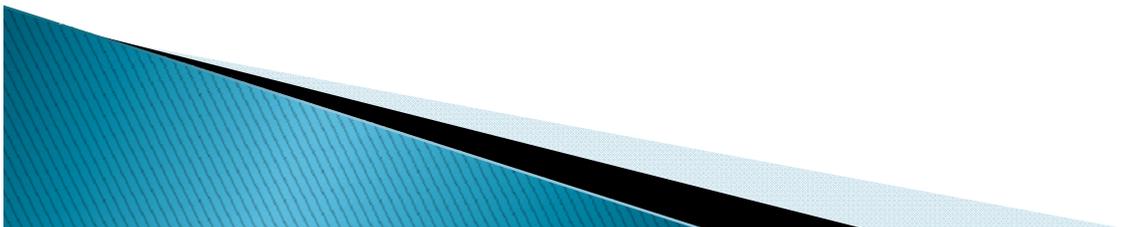
- ▶ Technology-based -> Secondary Treatment for POTWs
 - BOD₅, TSS, and percent removals

- ▶ Water Quality-based
 - pH, fecal coliform bacteria, total residual chlorine, and dissolved oxygen



Monitoring Only Requirements

- ▶ Temperature
- ▶ Enterococci Bacteria
- ▶ Ammonia



Effluent Limits

Parameters	Units	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Minimum Daily Limit	Minimum Percent Removal
Flow	mgd	0.7	N/A	Report	N/A	N/A
BOD ₅	mg/L	30	45	60	N/A	N/A
	lbs/day	175	263	350	N/A	N/A
BOD ₅ Percent Removal	%	N/A	N/A	N/A	N/A	85
TSS	mg/L	30	45	60	N/A	N/A
	lbs/day	175	263	350	N/A	N/A
TSS Percent Removal	%	N/A	N/A	N/A	N/A	85
Fecal Coliform	FC/100 mL	4,500	6,750	10,000	N/A	N/A
pH	SU	N/A	N/A	8.5	6.5	N/A
Temperature	°C	Report	N/A	N/A	N/A	N/A
Enterococci	#/100 mL	Report	N/A	Report	N/A	N/A
DO	mg/L	N/A	N/A	17	6.0	N/A
Total Residual Chlorine	mg/L	0.05	N/A	0.10	N/A	N/A
Total Ammonia as N	mg/L	N/A	N/A	Report	N/A	N/A

Questions?

