

Background

At a site near Galveston Bay, TX heavy oil/tar cut with Bis(2-Chloroethyl) ether from crude oil refineries was deposited in saltwater lagoons, subject to gulf storm flooding. A 75ft slurry wall was erected to stop migration of the contaminants, and 24 wells were in place. The site PRPs were facing heavy litigation in the public domain. The site created lethal off gas, and an award for an UV/H₂O₂ system with pretreatment was already in progress.

Treatment Required	Influent ppm	Effluent ppm
Flow	15 L/min	
Bis (2-chloroethyl) ether	200	>0.020
Vinyl chloride	0.67	ND
1,2-Dichlorethane	8.4	4.8
Benzene	1.3	ND
Chloride	6,000	
COD	1,720	
TDS	14,500	
Iron	3	
NAPL	0.3%	

Additional challenges included corrosion & explosion hazards, high chlorides and TDS.

Solution

- **Photo-Cat** system; CERCLA ID #TXD
- No flocculation or pretreatment
- Corrosion resistant construction
- Surface water discharge
- Duty 24/7, >35,000 hours
- Operated from 1994-2000 for a full site cleanup
- Complexity and footprint reductions



Benefits

- Capital cost savings: \$1 Million
- O&M cost savings: 80% per year
- Management Controls
- Data Logging, Trend Analysis, Complete security
- ROI: Immediate
- Complexity Reduction in construction & operations
- Full remote automation

Reduced Life Cycle Costs				
	Photo-Cat	UV/H ₂ O ₂	\$ Saved	%
Flocculation	N.R.	\$30,000	\$30,000	100%
Power	\$7,568	\$19,710	\$12,141	62%
Lamps	\$4,500	\$9,000	\$4,500	50%
Total Train	\$12,068	\$58,710	\$46,642	80%

