



**King County**  
Department of Transportation  
Road Services Division  
Road Maintenance Section

# Chautauqua Beach

## Culvert Replacement Project #3-1645

Project Date: July 2007

# Success or Failure?

# Potential Road Failure

## Chautauqua Beach Road SW

0+00  
Westerly  
Settlement  
pipe  
unknown

0+20  
settlement  
over  
concrete  
pipe

0+50 No  
settlement  
over CMP



# Chautauqua Beach Vicinity Map



# Road Maintenance Environmental Unit



# Culvert Outlets



# Project Site



Left: Ellisport Creek Culvert Inlets

Bottom: Ellisport Creek Upstream





# Chautauqua Beach History



Harrington – Beall Greenhouses, 1928.

- The property was developed as a lumber mill, millpond, and greenhouses for growing vegetables.
- The operations used heavy Bunker C fuel oil imported by barge.
- The fuel was stored on-site in two large above ground storage tanks and was also used to fuel greenhouses on the island.

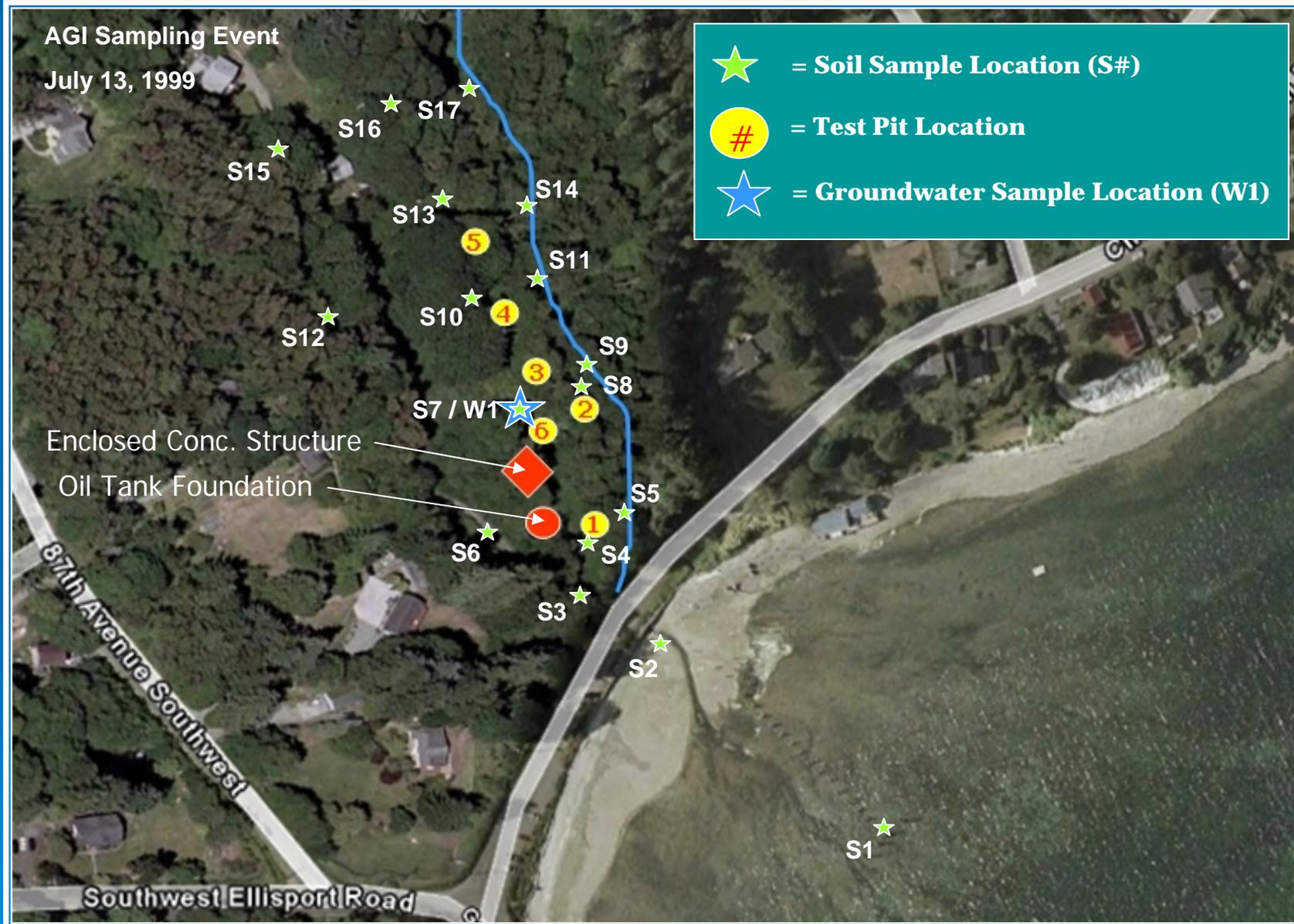
# Past Site Investigations

Founding Vashon - 1894 to 1920 - Founders  
Entrepreneur - Harrington-Beall Greenhouses



- King County Department of Natural Resources and Parks conducted a site investigation in 1998.
- AGI Technologies conducted a limited Phase II site assessment in 1999.

# 1999 AGI Investigation Sample Locations



# 1999 AGI Laboratory Results

Sample locations with detectable TPH concentrations



● = Test Pits  
★ = Hand Auger Samples

Test Pit #	Total Depth (feet bgs)	Depth to GW (feet bgs)	Observations
TP 2	3	0.2	Sheen noted on groundwater
TP 3	3	None	Black tar-like substance at 3 ft. bgs
TP 4	2	1	Sheen noted on groundwater
TP 6	1.5	1.3	Black tar-like substance at 0.2 ft. bgs

SOILS (mg/Kg)	NWTPH-HCID			NWTPH-DX	
	Gasoline	Diesel	Oil	Diesel	Oil
S1	<MDL	<MDL	>RDL	<MDL	52
S3	<MDL	<MDL	>RDL	<MDL	110
S4	<MDL	<MDL	>RDL	380	4,400
S6	<MDL	<MDL	>RDL	120	420
S7	<MDL	<MDL	>RDL	64,000	90,000
S8	<MDL	<MDL	>RDL	<MDL	370
S11	<MDL	<MDL	>RDL	32	310
Lab Detection Limit	20	50	100	25	50
MTCAs Cleanup Level				2,000	2,000

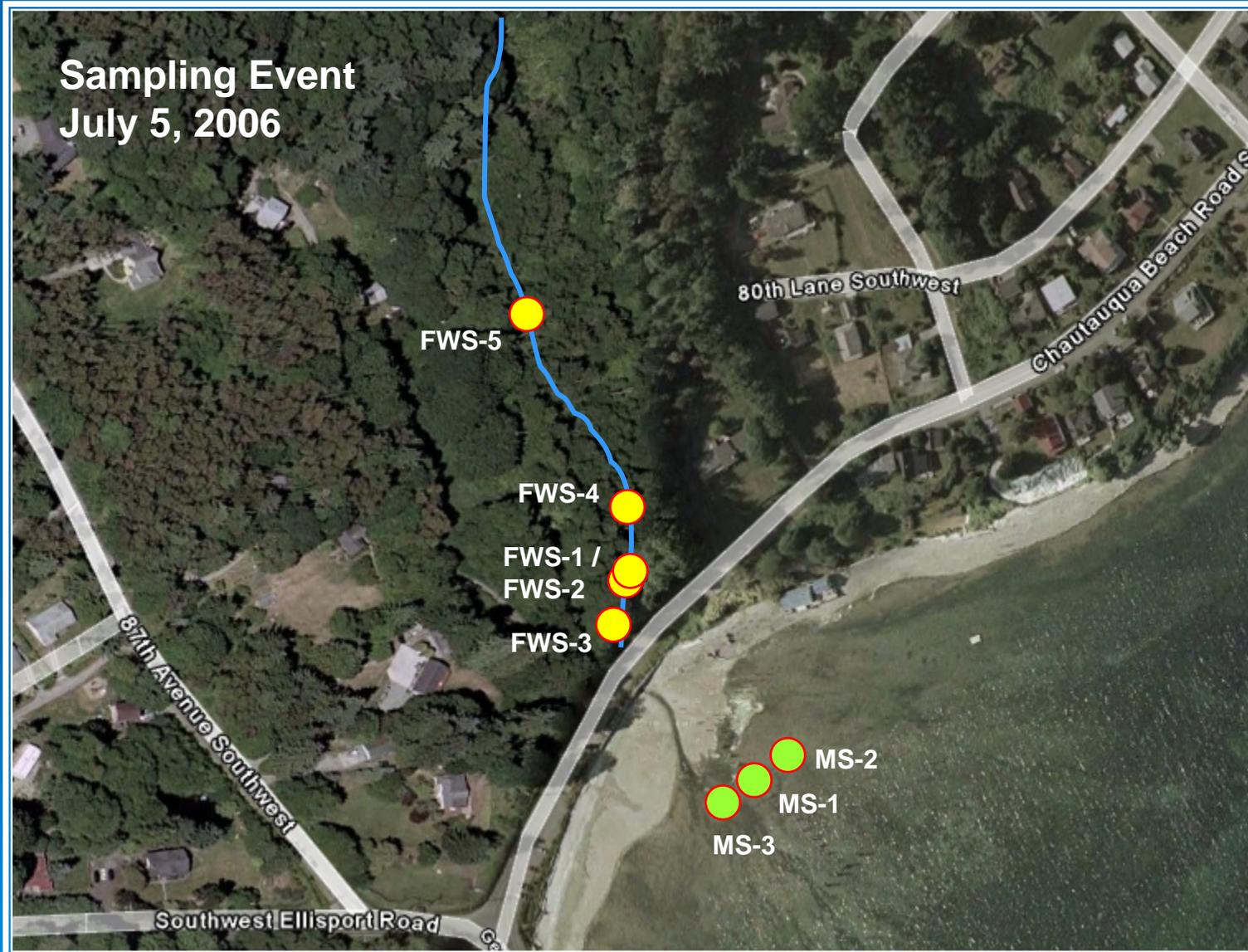
GROUNDWATER (ug/L)	NWTPH-HCID			NWTPH-DX	
	Gasoline	Diesel	Oil	Diesel	Oil
W1	NA	NA	NA	57,000	100,000
MTCAs Cleanup Level	---	---	---	500	500

# AGI Investigation Findings

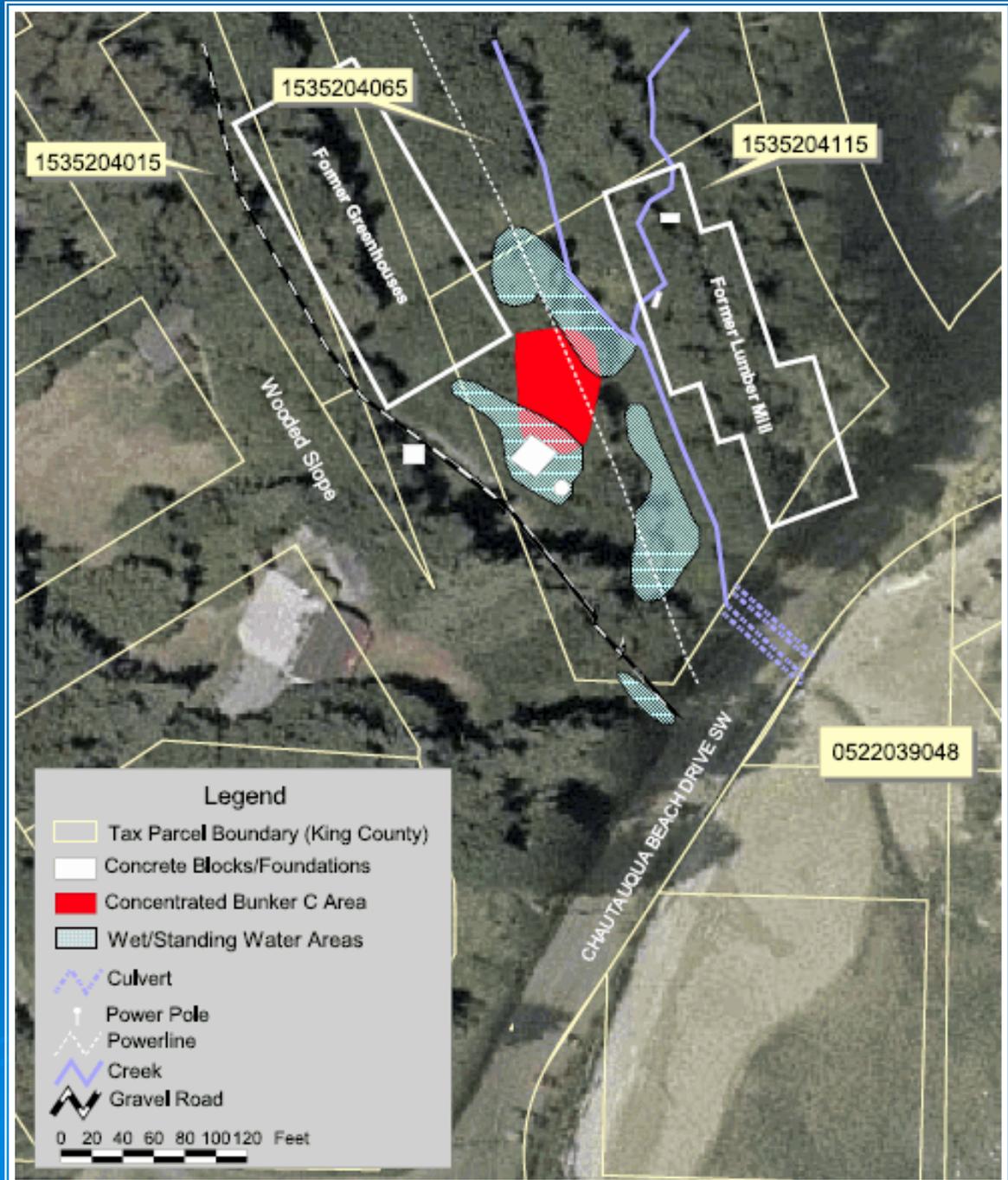
- Contamination most likely a result from tank leakage of Bunker C fuel oil.
- Free product is centered around the former storage tanks in an area approximately 220 feet long by up to 100 feet wide.
- Free product area is located west of Ellisport Creek and north of Chautauqua Beach Road SW.
- No evidence of TPH contamination in Ellisport Creek.



# 2006 CDM Investigation



# CDM Study



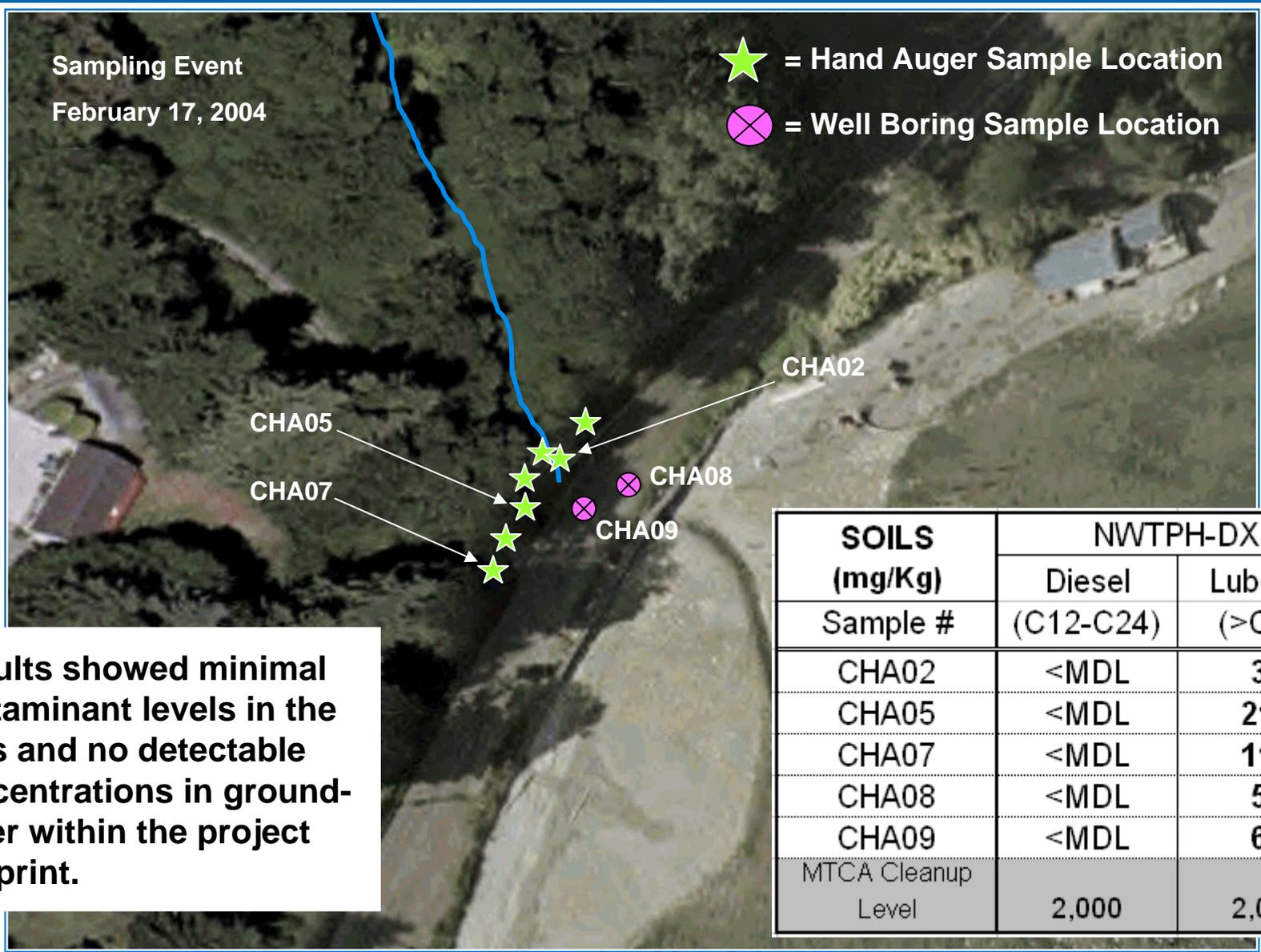
# Road Maintenance Environmental Sampling

Goal: Determine the extent of potential soil & water contamination within the project footprint



# Road Maintenance Site Investigation

Sample sites with detectable TPH concentrations



Results showed minimal contaminant levels in the soils and no detectable concentrations in groundwater within the project footprint.

# Chautauqua Beach Project 2007



# SuRPRISE & Horror at Chautauqua Beach



# Suspense at Chautauqua Beach

Project becomes

# SPILL RESPONSE



# Chautauqua Beach Project 2007



Test Pits with Oil Contamination Present



Pumping contaminated water to Baker Tanks



# Chautauqua Beach Project 2007



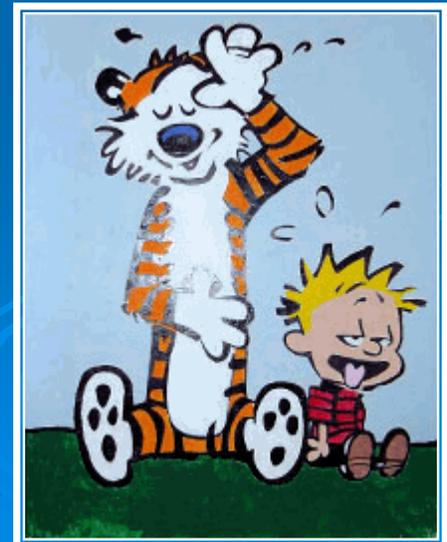
**PROJECT SUSPENDED!**

Findings of petroleum contamination within the project footprint drives Managements' decision to cancel the project.

# Chautauqua Beach Treat

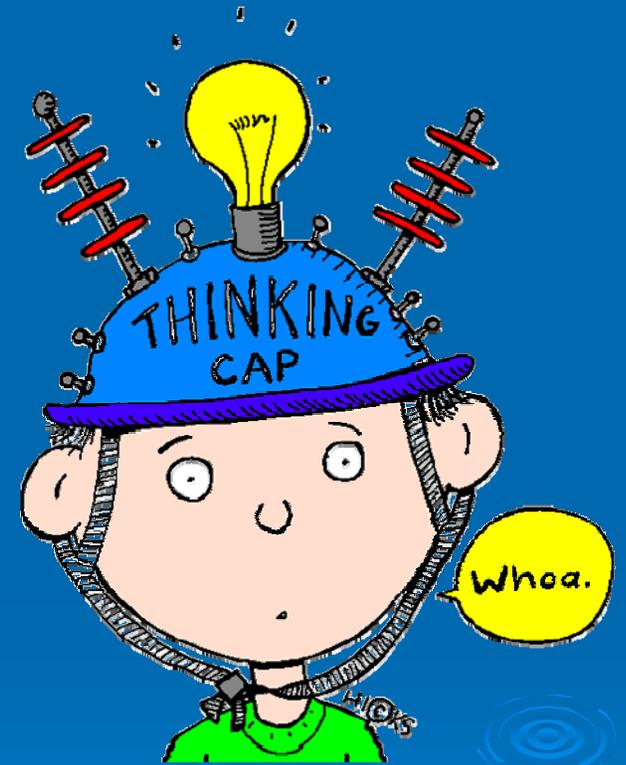
Spill Response Training & Experience  
of Road Maintenance personnel...

And quick action of Environmental staff  
and Road Maintenance crews  
prevented petroleum contamination  
from reaching Puget Sound.



# Lessons Learned

- Thorough planning, site assessments and scientific analysis works most of the time
- Plan for worst case scenarios; there is always the unknown
- Subsurface investigations are by design limited in their ability to find all sources of contamination within the extent of the project area



# Questions



**Thank You!**

**Questions and Comments to: Doug Navetski, Environmental Scientist III  
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