California State Lands Commission
Prevention First 2002

Rehabilitation of State Lease 421

September 10, 2002
S. A. Greig
SL 421 Site Plan

Location of the Access Road Repair Project

Approximate Location of Piers

Venoco Ellwood Onshore Facility

Highway 101

to Santa Barbara

Pacific Ocean
Aerial of Ellwood Area
421 From Offshore
421 from the Bluff
State Lease 421 History

- Initial Discovery 1928
- Developed as part of the Ellwood Field
- Production from the Vaqueros Formation
- Peak production 30,000 BPD
- Abandonment initiated 1960’s
- Last two surf Zone wells in California
- Production Shut-in 1994
Description of the Events

- November 22, 2000  Methane gas leak detected during an APCD inspection of the facilities. A fugitive leak that needed to be repaired was detected.

- November 28, 2000  Oil leak caused by an acoustic level check of the two wells. The testing pressure caused a 2” nipple on the well casing to fail. This resulted in a 15-gallon leak.
Assessment of the Problem

- Afternoon of November 28, 2000 Management notified of the leak
- Activated Emergency Response Plan
- Made appropriate notifications including “911” and local and state agencies
- Access limited due to condition of the road, piers, and caissons
- How do we ensure the wells are safe?
Emergency Permit Issued

- Emergency Permit 00-EMP-006 was issued.

- Allowed for two 2” hard pipes to be placed from the wells to the Ellwood Onshore Facility. One to flow the wells and one to allow for injection of well kill fluid.
Emergency Permit Amended

- Emergency Permit 00-EMP-006 was amended on March 21, 2001 to allow for repairs to the road, piers, caissons and finally well stabilization.
Problems with the Neighbors

- Due to use of the access road, the Sandpiper Golf Course challenged the Emergency Permit.
- Litigation filed to restrict our use of the easement.
- Emergency Permit was amended again to reflect a settlement agreement with Sandpiper Golf Course on April 11, 2001.
ROAD REPAIR

- Restricted to Reinforcement only, no expansion
- No further seaward encroachment allowed
- Remnant pipelines that were encountered were removed
- Three wetlands had appeared in the road area.
- Bluff side of the road had erosion that contained vegetation.
WETLAND MITIGATION

• Wetland delineation report prior to construction.
• First 2 wetlands combined totaled 475 sq. ft.
• Third wetland covered 5,855 sq. ft.
• Prepare a Wetland Impact Minimization Plan to minimize impacts to the greatest extent feasible.
• Prepare an Offsite Wetlands Restoration Plan
• Restore wetlands at a 3:1 and 5:1 ratio.
PIER REPAIR

- Tie-in road and pier defined in Work Plan
- Replace 50 piles on the two piers
- Required installation of new steal joists and replacement of damaged wooden joists
- Pile driving to be scheduled during low tides
- NMFS qualified monitor on-site during pile driving
- Pile driving stopped if marine mammals present
- No activity allowed on the beach
CASSION REPAIR AND WELL STABILIZATION

- All existing equipment was removed
- New set back slabs were installed
- New concrete pillars installed
- Well cellars revamped and reinforced
- Installed new well head on each well
- Cemented new casing in 421-1
- Installed packers at the producing zone of each
SUMMARY

• 15 gallon leak completely contained
• Road repairs required 645 tons of rip rap, 520 tons of float rock, 662 tons of base gravel delivered by 112 truck trips.
• Forty-five 12” diameter pipe piles were driven on the two piers
• Replaced 4,120 linear feet of 4” x 15” planking.
• Utilized a 80,000 lb. Ideco Doubles Rig on the wells
• Final estimated costs of $3.8 million
CONCLUSIONS

- Know your assets
- Maintain all roads
- Ocean air is detrimental to equipment
- Keep vegetation trimmed
- Never let wetlands establish themselves on your property, they are never good for development
- Out of sight should not be out of mind
- The problems very rarely fix themselves