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Myette Point Natural Gas Condensate Spill and Subsequent Natural Resource Damage Assessment

The Pioneer Natural Resources, State Lease 5706 No. 2 well, lost pressure control during re-completion operations in December 1996. The well, in the Myette Point, South Field, St. Mary Parish, Louisiana, sprayed into the atmosphere approximately 756,682 liters of natural gas condensate during a five-day interval that coated the surrounding hardwood bottomland swamp forest. The well is located in a canal within 0.4 km of the Atchafalaya River.

The area around the well is situated on a lacustrine delta in Grand Lake. Fifteen 0.61 m sediment cores were collected randomly from the condensate-impacted areas and adjoining unaffected locales. Well-sorted, fine-grained interdistributary channel sands compose the basal section of the cores. The upper section of the cores is composed of very fine-grained silts and sands from flood-event overbank deposits. Remnant condensate was identified in the cores with the use of ultraviolet fluorescent analysis.

Porous clastic sediments that compose the lacustrine delta of Grand Lake and the annual flood event of the Atchafalaya River accelerated the bioremediation and physical removal of condensate from the hardwood bottomland swamp. During base flow of the Atchafalaya River, fine-grained sediments of the overbank and interdistributary channel deposits within the study area allowed the condensate to migrate downward through the vadose zone to the piezometric surface. Ultraviolet inspection of study-area sediment cores indicated minimal fluorescence in clear-cut areas of the negotiated natural resource damage assessment versus bright-yellow fluorescence at the capillary fringe in the control sediment core. Negotiated clear-cutting of the existing affected forest enhanced remediation of the most-impacted areas of the swamp.