Use of *in-situ* burning to restore an oiled intermediate marsh following Hurricanes Katrina and Rita

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During Hurricane Katrina (August 29, 2005), 33,900 barrels (bbls) of Louisiana Sweet Crude (API 33.8) were released into secondary containment areas due to a destroyed tank at a facility located at mile marker 30 on the east bank of the Mississippi River. This was one of six major spills that impacted the southeast Louisiana region simultaneously. Most of the oil migrated to a retention pond at the facility. However, approximately 100 – 200 bbls of oil were released into the adjacent marsh environment during Hurricane Rita (September 24, 2005). The marsh was heavily oiled or moderately oiled (ca. 4-6 acres and 12-18 acres, respectively). On October 12 and 13th, 2005, 6 weeks after the initial spill, Chevron conducted two *in-situ* burns with support from the Unified Command and trustee agencies. The burns resulted in 80 – 90 % removal of the bulk oil and contaminated vegetation. The intermediate marsh is recovering quickly based on visual observations. However, a cooperative monitoring effort was established to quantitatively evaluate recovery in three areas: (1) oiled and burned, (2) oiled and unburned, and (3) unoiled and unburned. In past burns, often there is not an oiled/unburned treatment for comparison. Soil samples were collected and analyzed for alkanes and polycyclic aromatic hydrocarbons (PAHs) within each treatment over three time periods. This presentation will: 1) discuss the advantages and disadvantages of the site for conducting a burn, 2) discuss the rapid decision-making process to approve the burn during significant post-hurricane response activities, 3) describe pre, during and post burn operations and observations, and 4) compare alkane and PAH composition and rates of degradation among treatment sites. There remains interest in continuing to monitor the site to assess long-term recovery of the marsh habitat to determine whether burning restored the environment in comparison to the areas that were oiled and unburned.