

2. EVENT CHRONOLOGY

Following is a simple chronology of significant events that occurred as a result of the gasoline pipeline spill. This is not intended to be a complete list of events, but instead is a general representation of the history of the spill, subsequent contamination, and remediation efforts.

March 9, Late Evening

Explorer Pipeline Company's 28-inch pipeline ruptured around 10:30 p.m. about six miles northwest of Greenville, Texas. Approximately 600,000 gallons of reformulated gasoline containing nine percent MtBE were released to a pasture and into a tributary of East Caddo Creek, which was dry at the time.

Explorer detected a significant pressure drop in the pipeline system and activated emergency shutdown procedures. Explorer notified state and federal agencies of the spill event by 12:30 a.m. Nearby residents alerted local officials of strong gasoline odors in East Caddo Creek. Emergency response personnel were dispatched by Explorer to contain and collect released gasoline at the spill site.

March 10

Representatives of the Environmental Protection Agency (EPA), the Texas Natural Resource Conservation Commission (TNRCC), and the Texas Parks and Wildlife Department (TPWD) arrived at the site. EPA's emergency response unit was established as the lead agency for the environmental response. Officials from the National Transportation Safety Board (NTSB) and the Department of Transportation Office of Pipeline Safety (OPS) arrived to investigate possible issues of non-compliance with DOT regulations related to the pipeline rupture.

TPWD notified SRA's Upper Basin Field Office of the gasoline spill. An SRA field biologist responded to the spill to investigate the event on SRA's behalf.

Explorer's response personnel constructed two earthen dams in East Caddo Creek to contain the gasoline on the ground and prevent its migration down a nearby creek bed. Vacuum trucks arrived and began collecting gasoline from the ground surface and the

dammed areas of the creek bed. Response personnel deployed spill booms and spill pads along the creek to collect gasoline to the extent possible.



Gasoline Containment and Collection in East Caddo Creek

A major rain event washed out containment berms at approximately 12:00 p.m. and flushed gasoline down East Caddo Creek toward Lake Tawakoni. The reservoir is 28 miles downstream from the spill site.

SRA alerted all Lake Tawakoni water customers about the spill. The city of Dallas shut down its raw water intake in Lake Tawakoni.

March 11

The first command post meeting was held near Farm-to-Market Road (FM) 903 and FM 1062 to coordinate the response effort, plan the day's activities, and communicate necessary information. Morning meetings were conducted by EPA on a daily basis through March 19. Representatives from Explorer, EPA, TNRCC, NTSB, SRA, the city of Dallas, and local cities attended the meeting. Afternoon meetings conducted by the NTSB were held at a hotel in the city of Greenville.

March 12

SRA first detected gasoline contamination in the Caddo Inlet arm of Lake Tawakoni. Water supply entities were alerted and more extensive sampling was planned. MtBE was detected by SRA at 1,200 micrograms per liter, or parts per billion (ppb), in the far western reach of Caddo Inlet near the mouth of East Caddo Creek. Benzene, toluene, ethylbenzene, and xylene (BTEX) were detected in the reservoir at a combined level of 1,500 ppb.

March 13

SRA initiated transect sampling in Lake Tawakoni and detected concentrations of MtBE at 3,200 ppb near the surface and 6,000 ppb near the bottom along the south bank of Caddo Inlet.

March 14

An aeration system was installed by Explorer at the city of West Tawakoni's raw water intake to facilitate the removal of gasoline components from the water.

March 15

TNRCC and EPA issued action levels for MtBE contamination in the reservoir. Water suppliers whose raw water intakes had MtBE levels of 240 ppb or greater were to be alerted. Intakes with MtBE contamination levels greater than 1,000 ppb were to be immediately shut down. These values were later revised downward.

SRA contacted the city of West Tawakoni in the evening with sample results from afternoon sampling showing MtBE concentrations at 375 ppb near the City's intake. Based on this information, the City took steps to shut down its intake in the reservoir.

March 16

Explorer began delivering potable water to the city of West Tawakoni. Drinking water was brought to West Tawakoni by tanker truck. Dallas Water Utilities provided equipment assistance to expedite the hookup of hose connections to unload water into the City's storage tank. Deliveries continued for nine days.

A public meeting was held in West Tawakoni to update residents on the spill event and to alert them to the continuing impacts. Representatives from Explorer, SRA, EPA, TNRCC, and the NTSB attended to provide information and to respond to questions.

March 18

MtBE concentrations near the intake of West Tawakoni peaked at 740 ppb.

Figure 2.1. West Tawakoni Raw Water Intake MtBE Contamination

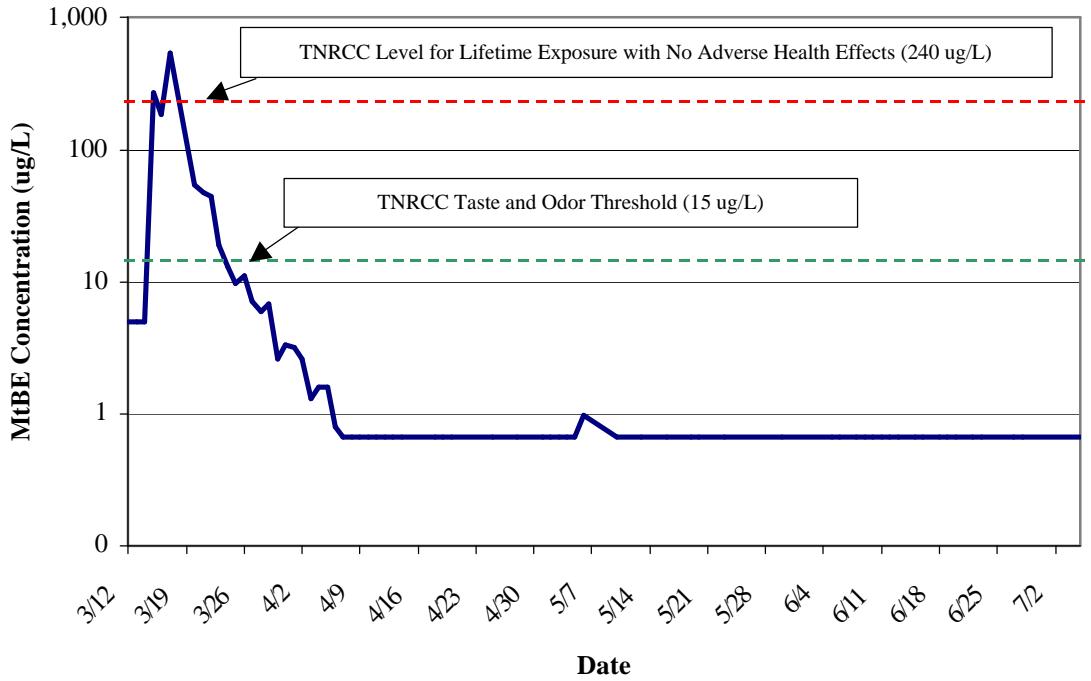
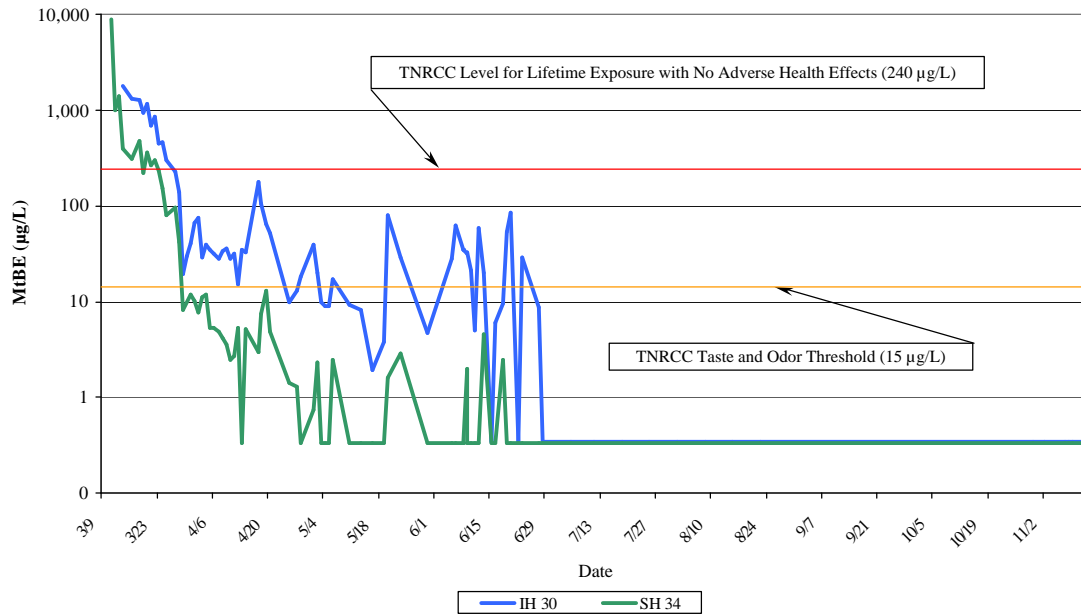


Figure 2.2. East Caddo Creek Surface Water MtBE Contamination



March 20

Following the recommendation of President Clinton, the EPA announced plans to phase MtBE out of all gasoline due to unintended adverse environmental impacts.

March 21

Gasoline component contamination in the reservoir dissipated, except for MtBE. Non-MtBE components were below detectable limits in the reservoir for the first time since the spill event occurred. MtBE levels were detected as high as 77 ppb in the Caddo Inlet arm of Lake Tawakoni.

Daily command post meetings were moved to the Explorer tank farm several miles downstream of the spill site. SRA continued to provide daily data reports to all parties.

March 22

A carbon filtration unit was installed by Explorer at the city of West Tawakoni's water treatment plant to remove remaining MtBE or other gasoline component contamination from the treated water at the plant. The City began 48 hours of treated water testing to evaluate the filtration unit's effectiveness at MtBE removal.

SRA, TNRCC, EPA, the city of Dallas, and water customers met at EPA Region 6 offices in Dallas to discuss issues related to the gasoline spill. TNRCC verbally committed to a maximum allowable MtBE concentration of 15 ppb at any raw water intake in the reservoir.

March 23

SRA, Explorer, TNRCC, and water customers met at the Wills Point Chamber of Commerce Community Center to discuss the reservoir contamination. SRA provided all available data collected to date to each water customer, Explorer and the TNRCC.

March 24

The city of West Tawakoni resumed delivery of water treated at the City's water treatment plant after test results showed MtBE and other gasoline contaminants were being effectively removed after the installation of the carbon filtration unit. Final water

truck deliveries to West Tawakoni were made. A total of 247 6,000-gallon truckloads of water were delivered from March 16 to March 24.

March 26

MtBE levels dissipated throughout the reservoir to concentrations less than 15 ppb, the taste and odor threshold established by the TNRCC.

March 28

TNRCC issued a cleanup directive to Explorer establishing a maximum contamination level of 15 ppb in surface waters 200 feet from the mouth of East Caddo Creek into the reservoir.

SRA collected and analyzed samples for MtBE from Lake Fork, Toledo Bend Reservoir, and the Sabine River downstream of Lake Tawakoni to evaluate contamination from boat traffic and personal watercraft. MtBE was detected in Lake Fork and the Sabine River at levels near one ppb. Subsequent samples collected at these locations in April and May showed no detectable levels of MtBE.

March 29

The first major rainfall since March 10 occurred. Creek flow increased sharply, but no significant increase in contamination was detected in the reservoir.

April 6

SRA held a public meeting at Thousand Trails Campground for water customers and marina operators to discuss the reservoir contamination from the pipeline rupture.

April 7

SRA conducted a public meeting with Lake Tawakoni water suppliers to clarify misconceptions regarding contamination levels in the reservoir. Explorer, TNRCC, the city of Dallas, and the media attended the meeting.

TNRCC issued a press release stating, “[w]ater drawn from Lake Tawakoni and treated by water utilities is safe to drink... Swimming in the lake and eating fish caught from the lake also poses no public health risk from remaining contamination of...MtBE.” (TNRCC 2000a).

April 11

After conducting core sampling at the spill site to determine the extent of the gasoline contamination, Explorer began excavating contaminated soil. Material was collected in stockpiles at the site for future treatment.



Spill Site Excavation

April 18

MtBE levels dropped to less than two ppb throughout the reservoir. At SRA's request, the TDH collected fish samples in Lake Tawakoni to analyze for adverse effects from the gasoline contamination. Results showed no detectable levels of MtBE or other gasoline components.

April 25

The city of Greenville resumed operation of its raw water intake in Lake Tawakoni.

May 16

Explorer began operation of the thermal treatment unit to destroy volatile organic compounds in the contaminated soil at the spill site.

May 22

SRA collected sediment samples from Caddo Inlet near the mouth of Caddo Creek to determine the presence or absence of contamination from the gasoline spill in the reservoir sediments. Samples were analyzed for MtBE, BTEX, and gasoline-range organic compounds, and no contamination was detected in any of the samples.

June 4

A large weather system deposited more than five inches of rain at the spill site and along East Caddo Creek in a several hour period. Monitoring conducted for several

days afterward showed no indication of contamination in the reservoir from remnants of the spill. SRA continued to provide data to all interested parties.

As of the date of this final report, Explorer has continued excavation and treatment of contaminated soil at the spill site under the oversight of the TNRCC. SRA has continued periodic monitoring of the creek and reservoir and plans to do so for the duration of Explorer's remediation effort. Explorer and the city of Dallas are also monitoring East Caddo Creek on a regular basis.