Above: Aerial view of the small shed at the Sullivan Mine, where four people died in an oxygen-deficient sump. Inset: Guards stand at the locked gates of the decommissioned mine.

PHOTOS: TIM FRASER / CALGARY HERALD

It all seems so preventable, lives falling like a house of cards. Four people — a consultant, an employee and two would-be rescuers — dead, succumbing almost immediately upon entering an oxygen-starved space at a decommissioned mine. Circumstances, described by investigators as "unique", were the unfortunate and unanticipated result of a reclamation project with the best of intentions: to protect the environment. Protection did not extend to those four people, their deaths revealing how a once-safe environment can be transformed into a deadly zone.

Descent

By Jean Lian

It all happened at a sampling shed, sitting atop a 1.68-metre-deep sump, at the decommissioned Sullivan Mine in Kimberley, British Columbia. The sump, at the toe of a waste rock pile, collects leachate from the rocks. It is located down-gradient from a culvert, with a drainage pipe extending into the base of the rock pile.

On May 15, 2006, a consultant with Pryzm Environmental, contracted by mine owner Teck Cominco Ltd. to do water monitoring at the closed mine, paid a routine visit to the shed to secure samples and to perform flow measures. Douglas Erickson was not heard from again.

On May 17, 2006, Teck Cominco initiated a search. Mine employee Bob Newcombe went to the shed and discovered Erickson at the bottom of the sump. Newcombe called 911, but apparently decided to attempt a rescue before responders arrived. He, too, would not emerge.

Two paramedics from the B.C. Ambulance Service (BCAS), Kim Weitzel and Shawn Currier, were dispatched to the scene, arriving at about 8:50 am.

Weitzel was escorted by a person on site to the shed. As she descended down the ladder, Weitzel asked if there was gas present. Then, there was only silence.

When Currier was informed of the situation, he decided to go down into the sump to check on his partner. But like the others before him, Currier would not emerge on his own, turning subsequent response from rescue to recovery.

What had happened? There was confusion among fellow responders, compounded by insufficient information regarding the nature of the emergency.

The accident report by British Columbia's Ministry of Energy, Mines and Petroleum Resources (MEMPR) notes the accident location was initially described as a sampling shed. At various times thereafter, it was referred to as a shaft, a tunnel, a mine.

Responders were also working under the mistaken information that hydrogen sulphide (H_2S) may be involved. The necessary precautions — had that been the case — were not followed.

The confusion only cleared later, after the Kimberley Fire Department used hand-held testers to take field samples. Oxygen deficiency — not H_2S — had been the culprit.

It was a surprise to all involved. "This accident is unprecedented in the history of mining and the process that led to the oxygen-depleted atmosphere has not, to our knowledge, occurred anywhere else in the world," Fred Hermann, then chief inspector of mines for British Columbia, said in a provincial government statement issued October 30, 2006.

The lack of oxygen was the direct result of oxidation — a process in which oxygen is consumed and carbon dioxide (CO_2) created — inside the waste rock dump. The accumulation of oxygen-deficient atmosphere was "unexpectedly mobilized" from within the waste rock dump, entering the shed through a