

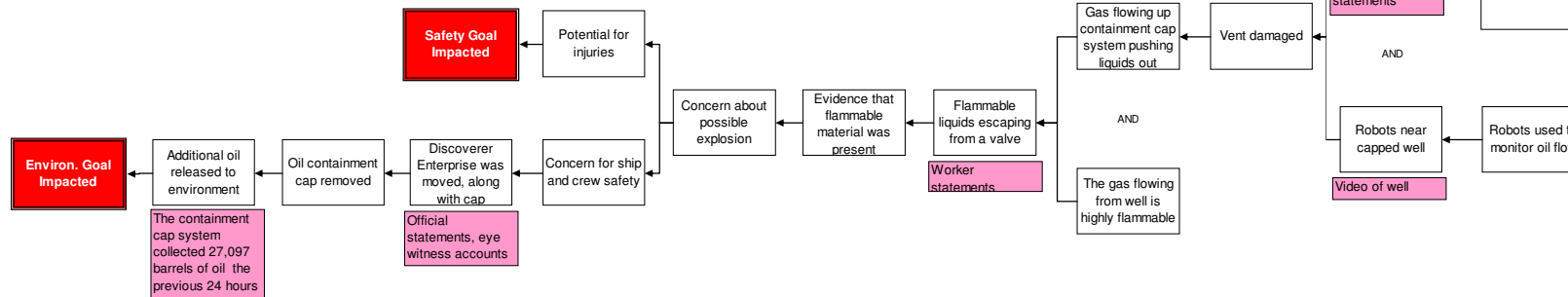
## Containment Cap Removed

Gulf of Mexico  
June 23, 2010

Last Wednesday, another set back occurred in the attempt to stem the flow of oil in the Gulf of Mexico from the a well head that was damaged when the Deepwater Horizon Oil Rig exploded on April 20 and sank 36 hours later .

The containment cap used to siphon oil from the damaged well head for the last three weeks had to be temporarily removed for more than 11 hours. Before being removed, the containment system was sucking up about 29,000 gallons an hour.

So what happened? Why remove a containment cap that had been working successful?



Even more detail can be added to this Cause Map as the analysis continues. As with any investigation the level of detail in the analysis is based on the impact of the incident on the organization's overall goals.

A root cause analysis of this problem can be built as a Cause Map. A Cause Map is started by considering the impact to the goals and asking "why" questions to add Causes. In this example, the first goal we will consider is the Environmental Goal. Obviously, the environmental goal is impacted because there was additional oil released to the environment because the cap was removed.

Continuing to ask "why" questions we can add additional causes. The cap was removed because the ship connected to the containment cap system needed to be moved away from the well because there a safety concern because of the potential for an explosion.

There was an explosion concern because there was evidence that flammable gas was flowing up from the well head because liquid was being pushed out of a valve in the containment system. This gas was getting into the containment cap system because an underwater vent was bumped by one of the remote-controlled submersible robots being used to monitor the damaged well.

More detail could be added to the Cause Map by continuing to ask why questions. The detailed Cause Map could then be used to develop solutions that could be implemented to help prevent the problem from reoccurring.

The containment cap was put back into place around 9 pm on June 23. The efforts to contain and clean up the oil spill will continue for months and possibly years to come, but at least this small issue has been fixed.

## Cause Map High Level



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