

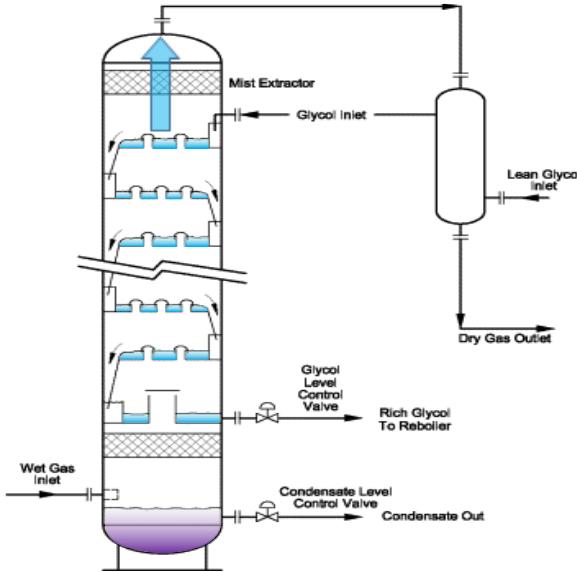
CASE STUDY

Identifying Liquid Carry Over in a Glycol Contactor

THE CHALLENGE

A customer experienced sudden liquid carry over in a glycol dehydrator shortly after bringing on production from new shale gas wells. The tower was able to operate with a reduced gas flow rate and near zero glycol flow. The customer shut in the new wells but there was no change in tower performance.

Several thousand dollars of glycol make up had already been added to the system and a quick chemical wash had been performed on the tower. To continue producing, the customer was shipping off spec gas and paying a penalty to the pipeline company.

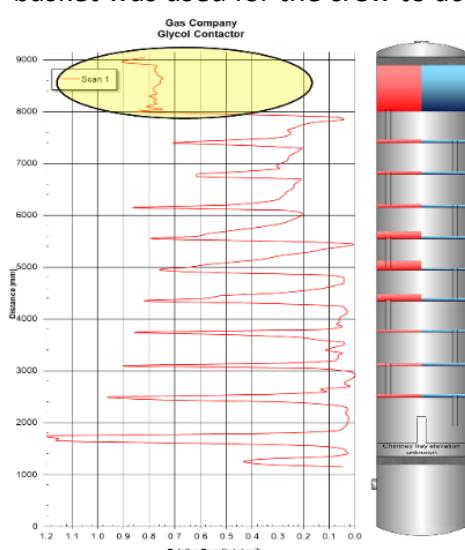


OUR RESPONSE

ScanTech traveled 8 hours to location to begin work the following morning. After site orientation and a brief discussion with the on-site personnel, a Gamma Scan was initiated on the contactor under its current limited operating condition.

THE SPECIFICS

No preparation was required to the tower. As the tower did not have any ladders, a crane with a man basket was used for the crew to access the top of the contactor.



GAMMA SCANNING RESULTS

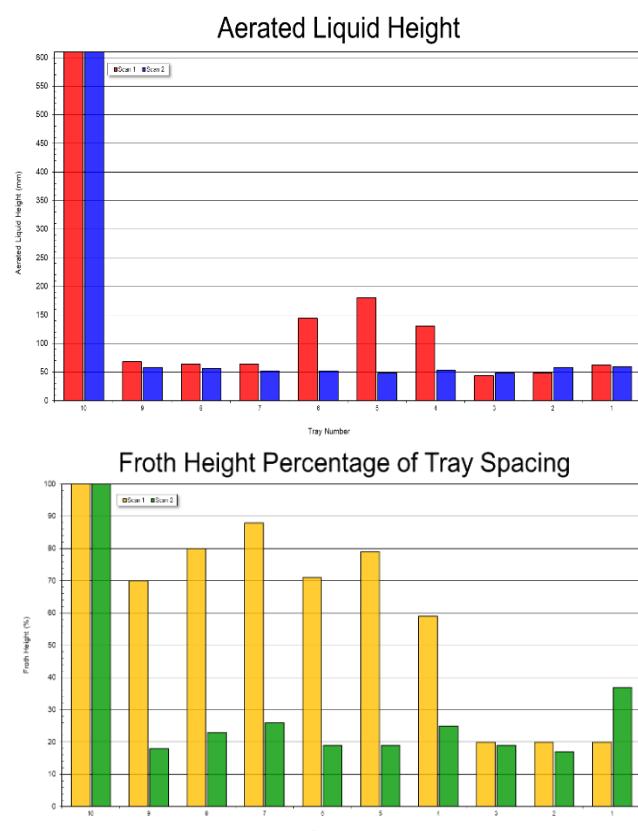
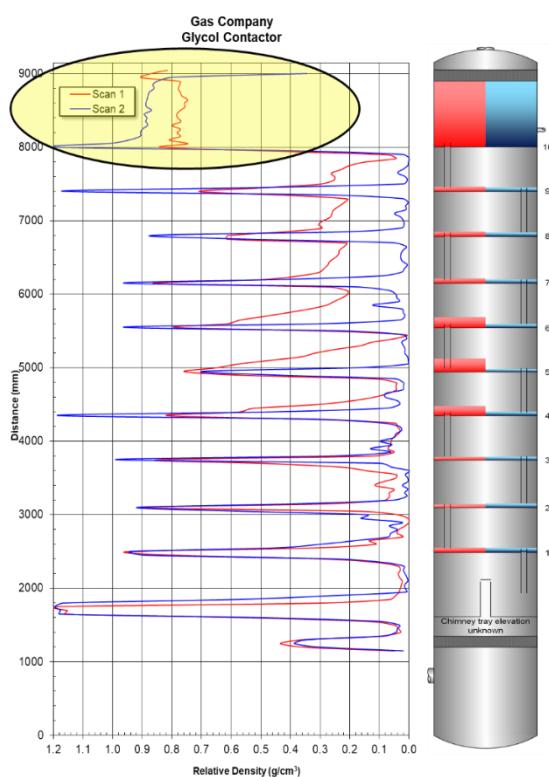
A non-invasive Gamma Scan was completed within an hour of starting the rig up. The results were immediately reviewed with the customer which showed that liquid was being held up on the top tray and was exiting the tower over head. The next 6 trays were showing indications of foam on top of the aerated liquid level and liquid droplets in the vapour space. The lowest 3 trays showed regular tray profiles.

As the top tray appeared to be liquid full, several scenarios were discussed with the customer:

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- The downcomer could be blocked with debris preventing liquid from draining.
- The downcomer could be damaged resulting in a partially blocked downcomer
- Gas could be bypassing up the downcomer from damage, loss of seal at the tray below or a hole in the side of the downcomer.

The customer was able to bypass the gas flow through the tower and turn off the glycol circulation for a second scan. The tower was given 15 minutes to drain and stabilize before scanning. The second scan showed that the top tray remained liquid full with all other trays exhibiting regular unaerated liquid profiles at the height of the tray weirs. As the top tray continued holding liquid without gas flow, it was determined that the downcomer was blocked which was preventing the liquid from draining off the tray. Confident that the cause of the restricted fluid movement was a blocked downcomer and not physical damage, the customer ordered a new chemical wash on the tower with a different chemical to dissolve any solid material that had been brought in from the new wells.



CASE STUDY CONCLUSION

- Gamma Scanning verified that the initial chemical wash done on the tower by the customer was not effective to completely rectify the problem they were experiencing.
- Gamma Scanning confirmed the problem to be a blocked downcomer near the top of the tower resulting in off-spec product being produced and shipped off at an increased cost.

For more information on how Gamma Scanning can assist your operation, contact us at don@scanningtech.com or call us at 780-410-0563.

