

SULFIX H₂S scavenger reduced employee exposure during asphalt loading

A refinery in the Midwestern United States was experiencing an increased frequency of hydrogen sulfide (H₂S) alarms when employees loaded asphalt onto trucks and railcars. The alarm frequency had exceeded 30 per quarter and was a high profile safety issue for refinery management. Options were considered and it was determined that a chemical treatment solution was the most practical and cost-effective method. Baker Hughes, a GE company (BHGE), was brought in to investigate the issue and recommend a suitable chemical treatment program.

Field testing confirmed that the H₂S concentration in the vapor-space of the asphalt was approximately 3,000 parts per million, far above safe operating levels. BHGE recommended treating the

asphalt upstream of the loading area with a **SULFIX™ H₂S scavenger program**. This application location allowed enough time and mixing to remove over 90% of the H₂S from the asphalt, lowering employee exposure. In some cases, the removal of H₂S exceeded 99%. An ongoing optimization and monitoring program has maintained this level as changes occur in processing conditions and asphalt quality.

The reduction in employee exposure alleviated safety concerns while also providing a cost-effective solution. Due to the success of this program, the refinery has continued to treat the asphalt with the BHGE SULFIX H₂S scavenger program.

Challenges

- Employee H₂S monitors were sounding off 30-40 times per quarter
- High profile safety issue for refinery management
- Exposure occurred during loading of asphalt onto trucks and railcars
- Alternative solutions to chemical treatment were costly and impractical

Results

- Greatly reduced frequency of H₂S alarms
- Decreased employee exposure to H₂S during asphalt loading
- Consistently removed over 90% of H₂S from the asphalt

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