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Eliminate Hydrogen Sulphide Safely With DVS 6000

Innovative technology neutralizes H_2S from liquid hydrocarbons, sour gas and sour water

Eliminating hydrogen sulphide safely. This is how DVS 6000, a patent-pending liquid scavenger, is changing the way that energy firms do business.

Developed by Diversified Industries Ltd., an Edmonton-based firm traded on the TSX Venture Exchange (TSX-V: DVS), DVS 6000 is a new, safer technology that eliminates H_2S from liquid hydrocarbons, sour water and sour gas.

DVS 6000 is the safest and easy to use. "It is a much safer way of dealing with H_2S," says Diversified Industries Vice-President, Engineering, Tom Devereux. "And it is uniquely effective in *liquid* hydrocarbons."

Commercially available since 2003, DVS 6000 contains no formaldehyde or any of the toxic additives commonly found in competitive products. It is also non-flammable and non-corrosive, enabling it to be non-regulated under the Transportation of Dangerous Goods Act of Canada and making it safe to transport by air, land and sea.

DVS 6000 is effective in many oilfield applications. The proprietary blend of zinc and amines helps oil and gas firms deal effectively with H_2S problems, air quality concerns and harsh odours from oilfield environments by neutralizing H_2S and mercaptans. Its applications include direct injection downhole or into oil well flow lines, circulation in storage tanks containing sour crude oil, as an addition to tanker loads of sour water, sour oil and sour mixtures of oil and water, decontamination of vessels, tanks and towers, a sweetener of high sulfur fuel oil and fuel gas and neutralization of H_2S and odours in vent gases, vapours and natural gas.

With a freezing point below –45 C, DVS 6000 produces a non-toxic byproduct — a very fine precipitate that is easily and safely disposed of. "Some scavengers end up with a lot of solids that can gum up oilfield equipment," says Susan Schieman, Diversified's technical scavenger specialist. "DVS 6000 doesn't do that."

It is far more cost-effective over the long run, lasting up to 10 times longer than some competitive products. Case history has shown that 0.14 litres per cubic metre per 1,000 ppm H_2S removes H_2S from liquid hydrocarbon streams and 0.33 litres of DVS 6000 per mmscf per ppm of H_2S removes H_2S from gas streams.

The uses of DVS 6000 in liquid treatment are growing rapidly: downhole – trucking – waste disposal – bulk storage. It's small wonder that DVS 6000 is gaining widespread market acceptance across Western Canada and overseas. With intense economic pressure and an increasing number of producing crude oil wells turning sour, energy firms are turning to DVS 6000 to sweeten wells and allow them to continue production.

- A major oil firm used DVS 6000 to treat an oil well producing 80 m^3 of liquid with an H_2S content of 2,700 ppm. By injecting DVS in the flow line at a rate of 30 litres per day, the company reduced the H_2S content to zero. It later injected DVS 6000 down the casing at the same rate, again removing the H_2S completely. The company is now using DVS 6000 to treat producing sour wells at other locations.
- CCS Income Trust (formerly Canadian Crude Separators) has recommended the use of DVS 6000 at all of its sites. In one example, CCS injected and circulated 400 litres of DVS 6000 in a bulk storage tank to sweeten 225,000 litres of sour condensate containing 8,000 ppm of H_2S. It took less than two hours to remove all of the H_2S.
- In one example of many similar applications that greatly improve safety in the trucking of sour water, an energy firm used 20 litres of DVS 6000 to treat 5 m^3 of sour water with an H_2S content of 10% or 100,000 ppm. After 1.5 hours, the H_2S content had fallen to zero in the tank vent line and a shake test showed only 100 ppm of H_2S in the head space.

DVS 6000 also used in gas polishing and odour reduction. A gas plant with an ineffective amine unit slipping 6 – 20 ppm of H_2S was treated by injecting DVS 6000 downstream at a rate of 0.33 L of DVS 6000/mmscf/ppm H_2S. This reduced the H_2S to meet sweet gas sales specifications (less than 6 ppm of H_2S). This plant has used DVS 6000 for more than two years.

The continuing pressure to reduce odours in hydrocarbon extraction and processing generates further opportunities for a safe, effective and economical scavenger. DVS 6000 excels in this area because it has a very mild odour, unlike many competitive products that have odours as bad as the contaminants that are being scavenged. The product is well suited for use in truck and stationary scrubbers, vent gas treatment, as well as odour control in the pulp & paper and water treatment industries.

Diversified Industries is a growing company. DVS 6000 is the principal technology of Diversified Industries, which acquires early stage technologies and inventions and adds value by advancing the technology and building the business with experienced and knowledgeable team players.

With sales across Western Canada and overseas, the company is expanding distribution as DVS 6000 continues to gain widespread industry acceptance. Diversified Industries will seek additional international exposure for DVS 6000 in Europe, India, the Middle East and South Africa.

"We have a winning technology," says CEO Stephen Davis. "And we are building a strong team of knowledgeable people who can provide solutions for the problems that producers have in dealing with H_2S."

Diversified Industries Ltd.

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