



Maximizing Earths Original Resources, L.L.C.

4610 S. 33rd Place • Phoenix, AZ 85040 • Phone: (480) 929-9194 • Fax: (480) 383-8615 • www.meor.net

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Sulf-B-Gone 3 CASE STUDY

Scenario: Several gas wells in the Gillette Wyoming area cared for and owned by the Rim Company of Colorado were experiencing high to extremely high H₂S levels resulting in “sour gas” production. These gas wells were found in a coal formation of relatively low sulfur levels. Typically, “sour gas” must be blended with other “sweet gas” streams to ensure the 4 ppm H₂S requirement is not exceeded. However, at times the “sour gas” production can reach extreme levels of up to 1200 ppm H₂S levels on specific wells and a well may be required to be shut down.

History: H₂S reduction in these wells has been attempted utilizing a Champion GT-137 product (biocide) as well as periodic H₂S specific bacteria feeds to safely reduce H₂S levels.

Bacteria feed reduction worked very well utilizing a “food competition” approach typically causing reduction of or sporulation of the H₂S producing SRB’s (sulfate reducing bacteria). This method worked well for several months, however the H₂S residuals would eventually return and a reapplication would be required.

The biocide application provided by “Champion” appears to be somewhat cost prohibitive, as a typical feed rate of product of about 1.2 to 2 gallons per day of product is required based on well H₂S levels.

Objective: The objective of the program is to apply a 20% active chlorine dioxide derivative to the downhole side of the wells to inoculate the well water and the surrounding coal formation, which provides residence for the sulfate reducers.

The product “Sulf-B-Gone 3” produced by M.E.O.R.; L.L.C. of Tempe, Arizona is shipped as a 20% inert chlorine dioxide derivative, which is non-toxic, non-hazardous and environmentally safe. Once the product is shipped and arrives onsite, it will be activated by two catalysts, which convert the product to an extremely strong chlorine dioxide product. (See attached product protocol.) The chlorine dioxide reacts and kills organics including sulfate reducing and iron



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reducing bacteria. After several days, an H₂S reading will indicate the levels are below the 4 ppm limit. The well will be able to produce “sweet gas” ideally for a 2 – 3 month time period before H₂S levels begin to rise. The SRB’s in the dry portion of the formation will be killed by the chlorine dioxide ability to “offgas” as a chlorine gas able to penetrate coal fissures and attack and kill hidden SRB’s. This program will also be beneficial to oil programs experiencing similar high H₂S levels.

Field Test: Utilizing the attached protocol, the product was applied to the wells at the following levels:

Well #	Initial Well Production	H ₂ S Level	Sulf-B-Gone 3 Application Volume
11 – 31	Shut Down	600 – 1200 ppm	7 Drums
24 – 26	250 – 300 mscfd	60 – 80 ppm	3 Drums
13 – 26	50 – 60 mscfd	50 – 60 ppm	2 Drum

∴ Typical time for fitting installation and well application is 45 minutes/well utilizing two men.

∴ Units should be allowed 12 hour kill time **at least** prior to placing well back in production.

Results: Utilizing an H₂S sniffer taken by Rim personnel three days later, the following results occurred:

Well #	Initial Well Production	Initial H ₂ S Level	Final Well Production	Final H ₂ S Level
11 – 31	Shut down	600 – 1200 ppm	Still Shut Down	417 ppm
24 – 26	250 – 300 mscfd	60 – 80 ppm	360 mscfd	10 ppm
13 – 26	50 – 60 mscfd	50 – 60 ppm	70 mscfd	10 ppm