



POWERING PROGRESS™

ENGINEERING & SERVICES



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January 2013



GATES I.M.R. MOBILE TEST CHAMBER

ENGINEERING & SERVICES



I.M.R. THE EFFECTIVE HOSE REVALIDATION PROGRAM

INTRODUCTION



BENEFITS

- IMR mobile service at your door step ease logistic issue
- Equipment integrity
- Keep equipment up and maximise productivity
- Reduce downtime while ensuring compliance with industry standards & regulations
- Payback is immediate, substantial, & quantifiable
- Conduct testing accordance to HSE measures and OEM requirement in major inspection
- Environmental friendly testing equipment, No Disposed of Hazardous Waste
- Onshore / Offshore On-site Pressure Testing of Hoses up to 30,000PSI.

Periodic inspection and testing of hose and flexible pipe assemblies is an essential component of any successful oilfield equipment maintenance program.

Additionally, hose and pipe assemblies being removed and repurposed for a new job, operation, or contract should also be inspected and tested to guarantee performance integrity in meeting the demands of the application. In drilling, well service or stimulation operations, an effective Inspection, Maintenance, and Recertification [IMR] program will help maximize asset reliability and reduce downtime while ensuring compliance with industry standards and regulations.

Aggressive and comprehensive regulations and oversight are being initiated to improve the safety, efficiency and environmental custodianship of drilling activities worldwide.

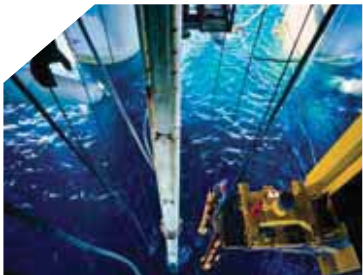
Gates introducing IMR Service to your door step, that aids in ensuring regulatory compliance and recertifying all hoses installed on rig equipment. A comprehensive hose management program, helps to keep equipment up and running at maximum productivity. Effective IMR can deliver more than \$40K-\$340K/hour of business value through increased operational performance and reliability. Hose management/ IMR Service, through the reduction of Health, Safety, and Environmental [HSE] events, can deliver \$250K savings per HSE event avoided.

GATES I.M.R. SERVICE

IMR services can be accomplished through on-site modular mobile units or at an IMR service facility. Application performance requirements, as well as regulatory standards, require visual exterior inspection, visual interior inspection, and hydrostatic testing before a hose assembly can be returned to service. IMR service test can test up to 30,000PSI of the high pressure hose on site.



Gates E&S engineers developed the following 7-step process for recertifying hoses to ensure optimal hose integrity, application performance, and regulatory compliance. If the hose fails at any step in this process, testing should be terminated and the hose should not be putting back to service.



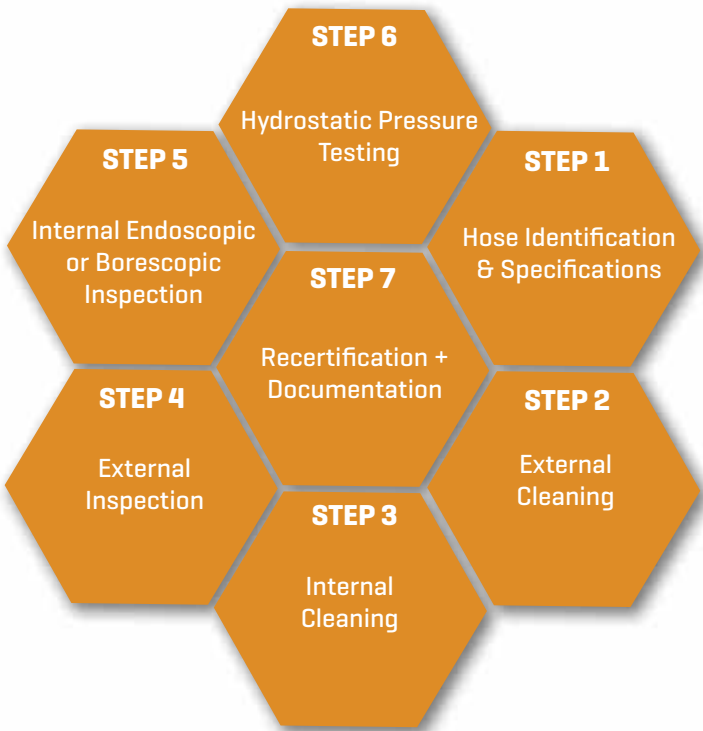
WHY GATES?

- Gates technical expertise & rig experience
- Gates IMR Service to your door step [close to you]

IMR REPORTS

- Inspection Report [Original]
- Pressure Test Certificate [Original]
- Pressure Chart [Attested True Copy]
- Borescope Report [Attested True Copy]
- Calibration Certificates [Attested True Copies]
- Release Note from certified third party witness body [Attested True Copies]
- Borescope video [optional at extra cost if required]

7 STEPS TO HOSE QUALITY & REGULATORY COMPLIANCE



This 7-step approach to IMR is an effective method for recertifying critical drilling hose assemblies while ensuring hose quality, performance, rig uptime, and regulatory compliance. IMR is one component of an overall hose management program that can include everything from system design and engineering to scheduled maintenance to condition monitoring and RFID tagging.

Gates recommends that drilling operators and energy producers pursue a hose management program, supported by a range of products and services available, such as Gates IMR, Sentry™ IQ and Sentry™ ID services. The payback is immediate, substantial, and quantifiable.

HOSES REQUIRED IMR SERVICE & RECERTIFICATION

There are numerous types of hoses with various methods of construction from bonded to non-bonded structures, including spiral steel cord and steel wire braided construction. Each hose construction has its unique characteristics that are designed to meet specific application requirements, maximize service life, and comply with industry standards.

Regardless of type, each flexible hose assembly has three main components: cover, tube, and reinforcement. Due to this construction, three stages of inspection in an IMR program are necessary before putting a hose back into service: 1) external visual inspection; 2) internal visual inspection; and 3) pressure testing.

Gates Engineering & Services [E&S] engineers recommend IMR service and recertification whenever placing any of the following hoses into a new service application:

- | | |
|----------------------------|----------------|
| • Rotary Drilling/Vibrator | • BOP Lines |
| • Cementing | • Sour Service |
| • Choke & Kill | • Drag Chain |