

# Reel Reporter

Vol. 8 Issue 1

Newsletter of the International Coiled Tubing Association

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## Industry Forecaster Presents Keynote at 2003 SPE/ ICoTA Coiled Tubing Conference

RICHARDSON, Texas, U.S.A. (17 February 2003)- Marshall Adkins, Managing Director of Energy Research at Raymond James & Associates, and well-known industry forecaster, is scheduled to deliver the keynote address at the 2003 SPE/ICoTA Coiled Tubing Conference and Exhibition. The event is scheduled 8-9 April at the Woodlands Waterway Marriott Hotel & Convention Center. The increasingly popular conference draws Adkins as the keynote speaker for the second consecutive year. The keynote luncheon, titled "How Will These Volatile Oil and Gas Prices Affect You?" focuses on the macro outlook for oil and gas pricing and the drilling outlook for the coming year. The luncheon will take place from 12:30 to 2 p.m. on Wednesday, 9 April.

Adkins has been recognized several times by The Wall Street Journal for his work in oilfield services research and also has been ranked as one of the top institutional investor regional brokerage oilfield analysts.

A recent article in the Houston Business Journal coins Adkins as a soothsayer and recounts several predictions by Adkins and his team at Raymond James that

## 8th Coiled Tubing and Well Intervention Roundtable Success

The November CT Conference held in newly re-arranged facilities at the Aberdeen Conference and Exhibition Centre, featured an increase in delegates as well as exhibitors. The complete story by Bruce Adam of Marketec is located on page 3

have been frighteningly accurate." The hot hand exercised so far by Adkins justifies his typically high expectations for natural gas prices," wrote Jim Greer in the Houston Business Journal article from the December 20-26, 2002 issue. "Adkins continues to build on his reputation for making prescient calls on natural gas prices."

The Woodlands Waterway Marriott, which opened in December will be host to the 2003 Coiled Tubing Conference and Exhibition. Conference organizers expect record numbers of attendees to be on hand.

Among the new exhibits expected at the April 8th and 9th event will be two fully equipped Coiled Tubing Rigs on display inside the exhibit hall, a first for this Conference

.Details for the meeting including the technical program, list of exhibitors, conference and hotel registration forms, and other conference information is posted at [www.ICoTA.com](http://www.ICoTA.com).

"The state-of-the-art amenities and the location of our facility are a great draw for shows like SPE organizes," said Brad McCreedy, Director of Marketing for the Woodlands Waterway Marriott Hotel and Convention Center.

## Parchman Oilfield Services Buys Advanced Coiled Tubing

Parchman Oilfield Services, with offices in Edinburg, Longview, Victoria and Laredo, Texas, concluded purchase of Advanced Coiled Tubing of Houston January 31st. With this purchase Parchman brings its total CT Rig holdings to nineteen, with eleven in Mexico as

part of Servicios Petrotec and eight in the U.S..Parchman acquired Procoil, headquartered in Longview, Texas, in August of 2002, adding it to their growing oilfield service capability. Mike Smith, VP of Valley CT, and one of the architects of the deal, revealed that Parchman had ordered four more CT units for the U.S. operation and planned to add at least two more units for the Mexico Operation. In addition to the companies mentioned, Parchman Oilfield Services owns Tritan Wireline and Global Pressure Control.



**The International Coiled Tubing Association (ICoTA)** is a not-for-profit, member-funded organisation with the primary objective of improving communication and promotion of technical awareness within the coiled tubing industry.

Membership comprises individuals from all sectors of the coiled tubing industry including service users, service providers, tubing and equipment manufacturers.

### Mission Statement

The ICoTA mission is to enhance communication, gather technical expertise and promote safety, training, competencies and industry accepted practices.

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# Coiled Tubing and Well Intervention Round Table upbeat on industry's prospects

By Bruce Adam

The European Roundtable is a well-established event for suppliers, practitioners and observers of well intervention activities in the European arena. The recent 8<sup>th</sup> event organised by ICoTA and SPE Aberdeen, saw a welcome increase in delegate numbers and exhibitor representation, again with a good attendance by international delegates, from 12 countries. All this in a time that uncertainties, both inside and outside the industry, are impacting on activity levels and creating problems for engineers and managers defining budgets for the coming year. However, as in previous years, the technologies on display, combined with a comprehensive technical programme helps form something of an annual snapshot in the world of well intervention.

In general, the presence of innovative products and solutions over a diversity of fields, from sealant to pressure control equipment and advanced modelling software, provides the evidence that engineers are continuing to rise to the challenges brought by the modern well intervention market. Above all, the challenge for any solution is that it be safe, reliable and economic. The dichotomy presented by seeking more technology for less money is increasingly resolved by the development of niche solutions, where the tool or system under development is designed to operate in a known and focussed market.

A keynote address by Russ Hunzeker, Well Performance Technology Leader of BP, set the scene on the opening morning by providing delegates with well intervention highlights from the perspective of a major oil and gas company. In addition to reviewing some of the advanced intervention activities being undertaken by BP around the world, Hunzeker provided a clear message that in today's operating environment, assessing the incremental value provided by any well intervention was key to the planning process. Well intervention plays a major part in increasing reservoir recovery factors, with approximately 60% of BP's well work being directly attributed to increasing the recoverable reserves in preference to accelerating delivery from the reservoir. Much of the value added by BP's well intervention activities is attributed to a higher reliance on surveillance of the well operating parameters. This provides an early warning of potential problems and, used in conjunction with a robust knowledge management system, enables smarter decisions to be made in both the production of the well and necessary timely interventions.

The technical programme comprised presentations of projects and recent experiences in coiled tubing, slickline and electric-wireline technologies. Presentations of recent coiled tubing interventions demonstrated how engineers are responding to provide deeper, hotter, faster, and more cost effective solutions. While the trend toward new complex wells may be perceived to lessen the opportunity for coiled tubing intervention, there

is a significant number of conventional wells drilled, and being drilled, for which coiled tubing intervention can provide an unrivalled solution. The increased popularity of larger CT string sizes (over 2-in. in diameter), enables delivery of fluid at the treatment zone at high rate and pressure and with a degree of control that enables relatively complex treatments to be completed reliably and with a minimal interruption to well production.

Slickline technology is also running in a wave of resurgence. Clearly providing the easiest, quickest and generally lowest cost well intervention method, the convenience of slickline conveyance is now routinely used for relatively complex applications such as perforating gun conveyance. The development of advanced downhole control systems enables the accurate placement and reliable firing of perforation charges. Much has been done to design tools and operating systems that combine with finely honed operating techniques to provide a high degree of safety and hazard control in the use of a technology that even recently was considered impractical.

The accomplishments of wireline tractors in recent times signal the early maturing of the technology into a reliable and versatile service. On the back of early successes, the functionality of the downhole drive system is being successfully extended to include rotation for mills and specialised downhole tools. Within the obvious limits of size and power available for such applications, these developments enable a highly portable and responsive service to be deployed in an ever increasing range of special services.

A growing number of wells completed in HPHT reservoirs, possibly as subsea wells, are designed with minimal intended intervention. Advanced monitoring and control systems permanently installed in the well provide permanent real-time surveillance which, all being well, renders routine intervention unnecessary. However, it is not only in new advanced wells that production engineering has become smarter. For example, scale, once a prevalent offshore problem, is now more successfully resolved in a well-managed scale prevention regime that requires minimal intervention. Scale prediction and prevention has combined art with science to control a potential costly and repeating problem.

So, where are the big opportunities in well intervention? That they exist is certain. That they are largely defined by technical ability and proven technology is certain. That there is adequate expertise and competency to apply the technology is certain. That there is a realisation, determination and commitment on the part of management to seek opportunities out is certain. Surely this is enough certainty to counter the apparent uncertainty of the current market!

# Innovative Through-Tubing Fishing Technique at Record Depth Enables Full Production in Deepwater Well

Baker Oil Tools recently combined its Single Directional (Si-Di) Hipp-Tripper Impact Drill and Venturi Jet Basket with a custom bit in an innovative through-tubing fishing operation that repaired a mechanical obstruction caused by a fluid loss control device at 27,090 ft MD and in the process set a record for the GOM's deepest coiled tubing operation to date.

## Deepwater, deep-well obstruction

In January 2002, a well was drilled in 3,797 ft of water in the Gulf of Mexico to 27,535 ft MD and completed as a dual monobore completion. Maximum wellbore deviation was 65.7 degrees at 17,703 feet MD. The tubing program consisted of 5 ½ in. 23 lb/ft, 4 ½ in. 15.1 lb/ft, and 3 ½ in. 9.2 lb/ft tubing strings. A fluid loss control device designed to prevent fluid from surging the producing zone during completion was set at 27,090 ft MD. Wellbore restrictions ranged from 2.75 in. to 1.716 in. ID directly above the fluid loss control device.

Unfortunately, the well never produced as expected. A number of injectivity tests determined that a mechanical obstruction was inhibiting production in the lower sand. The fluid loss control device used in this well consists of a pinned collet with a 2-1/8 in. OD ball atop it. Ideally, the 2,500 psi of pressure created when the completion assembly is stung into the gravel pack assembly forces the collet to shear, allowing the ball to drop to the bottom of the wellbore. However, in this instance, the operator determined that either the ceramic flappers were still intact and/or the fluid loss control device had not shifted to allow the ball to fall below the bottom sand. This created an obstruction that limited hydrocarbon flow from the lower zone.

## Meeting a formidable challenge

The operator contacted Baker Oil Tools to undertake a downhole repair project, the objective of which was to break a pair of ceramic flappers at 26,806 ft MD, then go deeper to shift the fluid loss control device at 27,090 ft. The project was made formidable by a combination of challenges, including:

1. Extreme working depth (the deepest ever attempted in GOM using coiled tubing)
2. Depth Correlation at these extreme depths

3. Small limiting restrictions (1.716 in. ID above the fluid loss control device)
4. Large debris (pieces from the ceramic flappers posed a risk of sticking the bottomhole assemblies and the coiled tubing)
5. Limited set-down weight with 1-1/2 in. coiled tubing
6. Fluid loss control device ball – 2,500 psi to shift equates to 8,861 lbs. of set-down force.

Baker Oil Tools determined that its Si-Di HippTripper impact drill and a custom bit could provide the downward impact forces required to break the ceramic flappers and shift the fluid loss control device ball, and that a Venturi junk basket could be used between trips to effectively remove ceramic fragments from the broken flappers and any other debris too large to be circulated to surface.

However, approaching the project in this manner did not reduce the risk associated with possible coiled tubing (CT) sticking. Every trip made in the hole at these depths added risk to the project, as did attempting to circulate ceramic pieces to surface.

## One-trip solution

Baker Oil Tools fishing experts concluded that it might be possible to combine trips by using the impact drill, Venturi jet basket, and custom bit in series to break the flappers, collect the debris below the bit, then shift the fluid loss control device, all in one trip.

Because this type of operation had never been attempted before, a series of tests were performed prior to running the job to confirm that the impact drill and junk basket could be run in tandem. In theory, the Venturi basket functions on a continuous flow rate and the single-directional impact drill activates when it meets an obstruction or resistance. The first test simulated shifting the flow control device with the impact drill and a specially built mule shoe. Concerns were:

1. Applying force to the ball evenly without it spinning
2. Supplying the necessary force to shift the ball (8,861 lbs) with minimal set-down weight (1,000 lbs).
3. Shifting the ball without damaging the collet fingers.

Successful tests indicated that the Si-Di HippTripper could shift the fluid loss control device ball without damaging the collet fingers.

The next test simulated breaking the ceramic flapper assemblies downhole while running the Venturi basket and the impact drill simultaneously. This test was also a success, which confirmed that this type of operation could be performed with a high success rate.

The job itself was well planned and executed. Once on location, all procedures were carried out according to specifications. The first run included running in hole with a depth log tool that enabled the fishing crew to correlate the coiled tubing depth to within one foot of actual measured depth..

The second run included running the impact drill/basket assembly to break the ceramic flappers and shift the fluid loss control device pumping at 1 bpm with 11.3 brine

fluid at 27090 ft MD. During this trip, the hinge assemblies and fragments of the ceramic flappers were recovered.

However, there was no indication that the fluid loss control device valve had been shifted. During a second trip with the same assembly, a large fragment of ceramic and some rubber fragments were recovered, and the fluid loss control device ball was shifted. The final run involved going in the hole with a wash assembly to 27,240 ft MD to acid wash the gravel pack screen ID.

The success of this job shows that, whenever applicable, the single-directional impact drill, Venturi junk basket and custom bit can be combined as a standard bottomhole assembly to break flappers and perform a well cleanout. It is important to remember that proper nozzle selection is critical to the success of this type of operation.



## CTCE 2003 Technical Program

Tuesday

08 April

9 a.m. to 12:30 p.m. **COMPLETIONS**

Session Chairpersons: **Hampton Fowler**, Halliburton Energy Services; and **Malcolm D. Pitman**, Baker Oil Tools UK Ltd.

- 81706 **Marginal Field Development Using CT Completion** F. Bottazzi, AGIP SpA
- 81707 **Coiled-Tubing Rod Strings Extend the Life of Low-Producing Wells With Casing Problems** E.J. Smith, Pioneer Natural Resources USA; J.G. Harris, BJ Services Co. USA
- 81708 **Re-Completion Techniques on Shallow Gas Wells Using Tubing-Conveyed Fracturing** S.M. Glanville, J.R. Weishoff, Sanjel Corp.; D.M. Zander, H.R. Jirges, Fidelity E&P Co.
- 81709 **The Joining and Splicing of Internal Cable CT Strings to Enable Deeper Coil-Tubing-Deployed ESP Completions** M.S. Ivey, A.I. Macleod, BJ Services Co.
- 81710 **Coiled-Tubing-Conveyed Hydromechanical Pipe Cutting Enables Removable Packer Completions** A.D. Ponder, M.V. Smith, S.B. Wilson, Baker Oil Tools
- 81711 **New Boundaries for Cementing With Coiled Tubing** K.J. Wilson, D.W. Morrison, D.A. Poole, M.J. Sackash, Halliburton Energy Services
- 81712 **Planning and Design Considerations are Key Issues to Successful Through-Tubing Sand Control Execution in High-Pressure Deep Environments** J.D. Sutton, ChevronTexaco Corp.; G.W. Stutes, D.W. Morrison, S.K. Smith, M.J. Sackash, Halliburton Energy Services

Tuesday

08 April

2 pm. to 5:30 p.m.

### GENERAL SESSION

Session Chairpersons: **Eric B. Larson**, Schlumberger; and **Mauro Tambini**, Eni-Agip E&P Division

- 81713 **Coiled-Tubing Performance Indicators 3 Years Later: An Update** H.A. Larsen, Schlumberger; G.S. Coburn, Precision Tube Technology Inc.; E.V. Bravenec, Anderson & Associates Inc.
- 81714 **Coiled-Tubing Operations From a Floating Anchored Vessel** R. Arangath, M.J. Ackers, Schlumberger
- 81715 **A Multiwell Review of Coiled-Tubing Force Matching** S.H. Craig, BJ Services Co.
- 81716 **Selective Coil-Tubing Access into Multilateral Wells in Upper Zakum Field: A Two-Well Case Study From Abu-Dhabi** A.M. Dahroug, Schlumberger; A. Chareuf, A.M. Al-Marzooqi, F. Al-Ansari, ZADCO
- 81717 **Accurate Temperature Determinations in Coiled-Tubing Applications** J.C. Hibbeler, BJ Services Co.
- 81718 **Inflatable CT-Conveyed Selective Well-Testing System for Logging Openhole and Horizontal Wellbores: Development and Use** C.G. Blount, C.L. Crabtree, C.R. Pierson, S.B. Rennie, ConocoPhillips Alaska Inc.; G. Mackenzie, Baker Oil Tools
- 81719 **Arctic Coiled-Tubing Perforating Applications and Operations** R.J. Staats, L.A. Stromme, Schlumberger

Tuesday

08 April

9 a.m. to 5:30 p.m.

### POSTER I

Session Chairpersons: **Kenneth R. Newman**, CTES; and **E. Andy Rike**, Technicoil Corp.

- 81734 **Improved Nondestructive Inspection During Tubing Manufacture and Servicing** R.S. Rosine, T.H. McCoy, Halliburton Energy Services; R.G. Stanley, J.R. Martin, Quality Tubing Inc.
- 81735 **2 3/8" High-Pressure Coiled Tubing: Can it be Done? An Experimental and Analytical Study** H.A. Larsen, Schlumberger
- 81736 **Gravel Pack Cleaning: A New Solution** D. Brunskill, BJ Services Co.
- 81737 **The Use of a Worldwide Web-Based Risk Assessment Tool Makes CT Operations Safer and More Efficient** H.A. Larsen, Schlumberger
- 81738 **Rigless Water Shutoff in Complex Formation With Difficult Wellbore Conditions** A.M. Dahroug, Schlumberger; E. Bonnin, B. Grimbert, A. Querne, TotalFinaElf; M. Shaheen, Schlumberger
- 81739 **Coiled-Tubing Fracturing Solution For Vermejo Park Ranch** E.B. Burkhalter, W. Salas, Halliburton Energy Services
- 81740 **Innovative Casing Exit System for CT/TT Application: System Description, Validation Surface Test, and Field Runs** P.C. Desai, C.H. Dewey, B.W. Cruickshank, B.H. McGarian, Smith Services
- 81741 **Cleaning Wire-Wrapped Screen Liners: Large-Scale Field Study Shows Coiled-Tubing Jetting to be the Most Effective Technique** L.N. Portman, BJ Services Co.; Z. Wijaya, PT Caltex Pacific Indonesia

Wednesday

09 April

9 a.m. to 12:30 p.m.

**THE PIPE**

Session Chairpersons: **Curtis G. Blount**, ConocoPhillips Alaska Inc.; and **John C. Pursell**, Precision Tube Technology Inc.

- 81720 **Monitoring of Wells With a Fiber-Optic-Equipped Coiled-Tubing String** M.G. Gay, Schlumberger; L. Hinrichs, Sensa; S. Adnan, Schlumberger
- 81721 **The Development of a Corrosion-Resistant Coiled-Tubing Product** J.R. Martin, W.D. Van Arnam, Quality Tubing Inc.
- 81722 **A New Approach to Ultrasonic CT Inspection** K.R. Newman, CTES
- 81723 **The Low-Cycle Fatigue and Plastic Strain Response of Coiled-Tubing in a Sour Environment With and Without Corrosion-Inhibitor Protection** B.H. Luft, BJ Services Co. Canada
- 81724 **Coiled-Tubing Abrasion: An Experimental Study of Field Failures** H.A. Larsen, Schlumberger; B.A. Reichert, Precision Tube Technology Inc.
- 81725 **Current Technology in OD-Tampered CT Strings** J.N. Andersen, R.S. Rosine, Halliburton Energy Services; J.R. Martin, Quality Tubing Inc.
- 81726 **Field Validation of Coiled-Tubing Fatigue Models** R.R. Behenna, D.D. Myrick, CTES; R.K. Stanley, Quality Tubing Inc.; W.A. Hammond, Servicios Petrotec S.A. de C.V.; S.M. Tipton, U. of Tulsa

Wednesday

09 April

2 p.m. to 5 p.m. **STIMULATION AND CLEANOUT**

Session Chairpersons: **John G. Misselbrook**, BJ Services Co.; and **M. Scott Quigley**, ExxonMobil Development Co.

- 81727 **Efficient Sand Cleanouts in Larger Wellbores Using Coiled Tubing: A New Approach Making an Old Problem Simple** G.E. Gill, Statoil; M. Sach, M. Ovesen, L.E. Laun, BJ Services Co.
- 81728 **Repair of an Openhole Gravel Pack Using Coiled Tubing** M. Ovesen, BJ Services Co.; M. Riise, S.A. Tanem, K.T. Nesvik, Statoil
- 81729 **Record Depth Coiled-Tubing Sand Cleanout and Gauge Retrieval** R.M. Schuurman, Schlumberger; T. Ellzey, Shell E&P Co.; J.W. Powell, M-I LLC; B.A. Reichert, Precision Tube Technology Inc.
- 81730 **New Life to Old Wells: A Case Study of Refracturing Gas Wells Using Fracturing Through Coiled-Tubing Techniques** C. Gutor, Enerplus Resources Corp.; S.P. Lemp, B. Rieger, A. Al-Saleem, Schlumberger
- 81731 **Is Acid Placement Through Coiled Tubing Better Than Bullheading?** W.P. Mitchell, CNOOC SES Ltd; A.N. Martin, D.J. Stemberger, BJ Services Co.
- 81732 **Damage Removal in Screened Horizontal Wells** D.J. McCulloch, J. Mann, Halliburton
- 81733 **Through-Tubing Zonal Isolation and Water Shutoff Strategy in Multiple Packer Completion** Hendarwin, R.Y. Susilo, W. Wibowo, I. Arbai, BP plc

Wednesday

09 April

9 a.m. to 5 p.m. **POSTER II**

Session Chairpersons: **Kenneth R. Newman**, CTES; and **Eric J. Walker**, BP plc

- 81742 **An Innovative High-Strength Drill-Pipe Mechanical Cutting Solution Using Coiled Tubing** E. Van Steveninck, Baker Oil Tools UK Ltd.; J. Manson, Talisman Energy (UK) Ltd.
- 81743 **Update on Formation Treating With Flow-Operated Hydraulic and Inflatable Straddle Tools** C.E. Hoffman, R.L. Giroux, P.J. Wilson, Weatherford International Inc.
- 81744 **Reducing the Cost of Coiled-Tubing Sand Cleanouts by Conducting Them Without Nitrogen** L.N. Portman, BJ Services Co.
- 81745 **Improved Economics of "Through-Tubing Completions" Utilizing a Bundled Services Approach** T. Clements, Superior Energy Services
- 81746 **Flow Patterns and Minimum Suspension Velocity for Efficient Cuttings Transport in Horizontal and Deviated Wells in Coiled-Tubing Drilling** V.C. Kelessidis, G.E. Mpandelis, Technical U. of Crete
- 81747 **Improved Reliability of Coiled-Tubing Equipment by Utilization of an Assurance Management System** M.J. Cowan, P.P. Angell, I. Smith, Altinex UK Ltd.
- 82045 **Field Experience With Composite CT** M. Feechan, S. Nolet, C. Makselon, Fiberspar Corp.



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