

LEADER IN CONTEMPORARY SUBSEA SOLUTIONS

THE TREND Newsletter

Issue 7, November 2014





DEEPWATER

Trendsetter is a global provider of specialized subsea solutions to the oil and gas industry's toughest challenges. We specialize in solving unconventional problems with conventional field proven technology, especially in a crisis environment.

Our quick response, innovative technology and commitment to customer service, safety and quality are what make us the leader in contemporary subsea solutions. Our team of experts has established a reputation for providing cutting-edge, reliable solutions with a quick turnaround, while keeping safety as the number one priority.

Our expertise and inventive approach ensure our clients receive the most advanced and dependable solutions available today in the subsea oil and gas industry.







DELIVERING INNOVATIVE SOLUTIONS WORLDWIDE

CAPPING STACKS & CONTAINMENT SYSTEMS SOURCE CONTROL SOLUTIONS MANIFOLDS & FOUNDATIONS CONNECTION SYSTEMS CONTROLS & DISTRIBUTION EQUIPMENT BOP SUBSEA ACCUMULATOR MODULES SPECIALIZED TOOLING SOLUTIONS RENTAL EQUIPMENT FIELD DEVELOPMENT MANUFACTURING & FABRICATION INSTALLATION, TESTING & AFTERMARKET ROV SIMULATION

PRESIDENT'S MESSAGE



Welcome to The Trend, Trendsetter's official company news source featuring our latest technological developments and advancements! 2014 has been a busy year for us. Whether it is the completion of major projects or charitable events, Trendsetters are fully committed to our customers, our state-of-the-art products and giving back to our community.

Technology in the oil and gas industry is in a constant state of re-invention. As the leader in contemporary subsea solutions, Trendsetter is on a continuous path toward developing the most innovative technology to provide the industry with reliable, safe and advanced solutions. I am pleased to announce that this year, we have successfully and safely completed numerous projects, including a Mudline Closure Device (MCD) for a major oil and gas operator, an industry leading 18 ³/₄" 15,000 psi capping stack for Wild Well Control, and many other high profile projects.

In August, we welcomed HWCG and officials from the US government to our facility in Houston, Texas. Mr. Brian Salerno, Director of the Bureau of Safety and Environmental Enforcement, took a company tour to learn more about our innovative MCD, our fit-for-purpose capping stacks and other advanced subsea technology.

Trendsetter continues to prosper as we create new jobs and generate new solutions that meet the exceeding demand of our industry. Along with our significant economic growth, I have had the pleasure of welcoming many new faces to Trendsetter, each of whom upholds our company values and shares in our vision for success. This has led to the expansion of our 22,000 square foot office building that was built last year, which houses our engineering, quality assurance, safety and manufacturing groups. In addition, we are adding a 10,000 square foot covered storage facility to accommodate the increasing demand from our clients to store subsea equipment.

Trendsetter is proud to support organizations working to strengthen our communities. We share our success within our communities by giving back to charitable and educational institutions. Our employees have been generously donating their time, on behalf of Trendsetter, to various charities benefiting American Cancer Society, Shriner's Hospital for Children and United Way, to name a few. I am honored to announce that Trendsetter was recognized for the third year in a row by the Houston Chronicle as one of Houston's "Top Workplaces," as well as the Houston Business Journal's "Best Places to Work" for the second year in a row. We were also named one of Houston's fasted growing companies as Trendsetter was ranked on the Chron 100 list. These mentions are an honor and a true testament to our employees and our company culture.

It is a privilege to work with our dedicated customers, loyal suppliers and with such an outstanding group of Trendsetters. Your continued support plays an important role in Trendsetter's accomplishments, and I am truly grateful for your confidence in us. I am excited for what the future holds, and I look forward to continuing on this path of success.

Ron Do

Ron Downing President

Trendsetter welcome Brian Salerno, Director of the Bureau of Safety and Environmental Enforcement and HWCG, to our facility in Houston, Texas. From left to right, Brett Morry (Trendsetter), Ross Frazer (HWCG), John Weust (HWCG), Mario Lugo (Trendsetter), Natalie Older (Trendsetter), Dave Coatney (HWCG), Brian Salerno (BSEE), Mike Cargol (Trendsetter), Nicole Downing (Trendsetter), Johnce Hall (Trendsetter) and John Sprot (Trendsetter).

TWCS

Voted Houston Chronicle's CHRON 100 for the first year!



Voted Houston Business Journal's FAST 100 for the second consecutive year!



Voted Houston Business Journal's BEST PLACES TO WORK for the second consecutive year!

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Voted Houston Chronicle's TOP WORKPLACES for the third consecutive year!



NEW PROJECTS AND TECHNOLOGY TRENDSETTER RECEIVES SUBSEA HIPPS INTEGRATION CONTRACT FROM EXXONMOBIL

Trendsetter has been awarded a contract for module hardware design and overall integration of a subsea well-based **High-Integrity Pressure Protection System (HIPPS)** for ExxonMobil's Julia field development within the Gulf of Mexico.

The Julia field is located in 7,500 feet of water approximately 15 miles from the host platform. The Julia HIPPS is a pressure protection system designed as a contingency to prevent internal damage to downstream subsea equipment should a Julia well encounter higher than predicted pressures. Delivery of the Julia HIPPS module is scheduled for the first quarter of 2016.

"Trendsetter is very excited to be a part of the Subsea HIPPS Module System project for the GoM. We have a strong history with ExxonMobil, having helped them solve an array of subsea challenges over the past 15 years. We are very pleased to build on this positive relationship with our client."

Nadeem Elnasr, Project Manager

WELLHEAD COMPLETION CAPS

Due to the extended delivery times for production trees from suppliers and the increasing difficulty for oil companies to secure the necessary permits to drill, Trendsetter has designed, developed and fabricated **wellhead completion caps** (WCC) to protect previously completed production wells. These completion caps permit the oil companies to release the drilling rig upon the completion of a well regardless of subsea tree delivery. Once the production tree becomes

available, the WCC is recovered and replaced by the permanent production tree. Down-hole plugs are removed with a rigless intervention system, and the well is ready for startup without the added expense and schedule risk of having to source a drilling rig.

Trendsetter's WCC is designed and tested in accordance to API 6A/17D requirements and can be built to interface with any industry wellhead and tubing hanger. The system is landed and locked onto the tubing head spool with or without the tubing hanger installed. The WCC includes a nominal 5" production bore and nominal 2" annulus bore.

The Trendsetter designed system provides a sealing barrier to the production bore of the tubing hanger and allows vertical access to the production bore to enable the removal of wireline plugs or intervention from a drilling rig or rigless intervention system. Local pressure gauges are utilized, and all operations and monitoring are performed by an ROV.

In addition to the WCC, Trendsetter was asked to develop the mandrel latch tool to accompany it and to allow for intervention with a subsea test tree (SSTT) system. This hydraulic operated x-mas tree latch tool (XTLT) is designed to attach an internal landing string to the WCC and provide the necessary conduits to access the well through the WCC. The XTLT is designed with the misalignment for rough and final alignment inside the WCC and is not sensitive to marine riser debris.



SUBSEA CONTAINMENT SYSTEM FOR SWRP'S INTEGRATED INTERVENTION SYSTEM

Trendsetter is currently working on key components of a worldwide response subsea containment system for Oil Spill Response, Ltd. (OSRL). OSRL is an industry-owned co-operative and the largest global provider of oil spill response and preparedness services. OSRL is collaborating with the Subsea Well Response Project (SWRP) to make a new integrated intervention system available to the global industry.

Management, engineering and procurement was performed at Trendsetter's facilities in Houston, Texas. The equipment will be owned by OSRL and will be made available to all operators worldwide on a subscription basis. The system provided by Trendsetter will include 3 FLETs, 3 flowspool assemblies, 6 flowline connectors, 3 flexible jumper connectors, 3 jumper choke connectors, 7 connector mounted over-pressure-protection devices, as well as custom containers and skids to enable air freight of this subsea intervention equipment.

The project will utilize an innovative flow back and capture solution to direct well hydrocarbons to surface for a safe disposal, if ever required in a subsea intervention. The flowspool assembly, a custom manifold with hydraulic valves, is landed on a dummy wellhead to transition flow from the incident well to a vertical riser. The flowspool is connected to the collection vessel via an internal landing string equipped with a traditional subsea test tree system.



This system simplifies and expedites the mobilization and installation effort, makes the system modular to accommodate rapid response during emergency and minimizes storage and maintenance costs.

The equipment will all be stored at Trendsetter's facilities in Houston, Texas in a state of readiness for worldwide deployment, should an emergency offshore loss of subsea well-control occur.

TRENDSETTER TO ASSIST NOBLE ENERGY IN THE GUNFLINT DEVELOPMENT

Trendsetter was awarded a contract by Noble Energy to design, manufacture and test a total of **five** subsea pipeline end termination (PLET) and inline sled (ILS) structures for their ongoing Gunflint development. The Gunflint Development is a tieback to the Gulfstar I platform in the Gulf of Mexico.

"Trendsetter is excited to expand on our history of supplying innovative production system solutions to the oil and gas industry. We look forward to supporting Noble Energy on making the Gunflint development a successful project in support of the first-oil target date."

Tony Matson, Project Manager

Design engineering and early manufacturing is currently underway on three production jumpers; Trendsetter's unique vertical connection system, a host of ROV tooling, as well as fabrication support equipment. Delivery is scheduled for early 2015 in support of Noble Energy's installation schedule.





MUDLINE CLOSURE DEVICE (MCD)

Trendsetter has developed an 18 ³/₄"– 15,000psi mudline closure system that is installed in addition to the traditional BOP assembly to enhance safety during drilling in harsh environments. At the heart of the system is a **Mudline Closure Device** or MCD. The MCD is designed to be installed between the BOP and subsea wellhead during drilling operations and can be used to shear and isolate the well should loss of well control occur. Mudline closure devices could also be installed on the seabed when connected via a rigid riser to a surface BOP when used with jack up rigs. The MCD serves as an additional safety shut-in device during drilling operations, with dedicated hydraulic controls independent of the BOP and BOP control system. The MCD provides a clean re-entry capability and is capable of monitoring, logging, and transmitting pressure and temperature readings up to 9 months should the rig need to abandon the well due to an unforeseen event.

Along with the MCD, the system includes a dedicated subsea control system that includes subsea accumulator modules (SAMs), acoustic electro-hydraulic control systems and hydraulic flying leads. In addition, the system includes a test stand, an $18 \frac{34''}{15,000}$ psi secondary pressure cap and other supporting equipment.

Trendsetter's MCD system is available for purchase or lease and is designed to perform the following basic functions:

- Connects and seals to an 18-3/4" 10,000psi or 15,000psi wellhead housing
- Provides an 18-3/4" 10,000psi or 15,000psi upper mandrel connection to the subsea BOP
- Provides two individual BOP rams capable of shearing and sealing off wellbore with 15,000psi wellbore pressure when actuated with acoustics or with the ROV back-up system
- Provides two subsea mateable connections for contingency bore access, well kill operations and cap and flow scenarios

WILD WELL CONTROL 18 3/4" 15,000 PSI CAPPING STACK

Trendsetter successfully completed the design and build of a stateof-the-art capping stack for Wild Well Control. The 18-3/4" 15,000 psi capping stack was designed, manufactured, and assembled within nine months. The cutting edge well capping equipment is designed so that it can be deployed around the world, via air freight or ocean freight, in the event of a subsea well control incident.

The well capping stack equipment is capable of containing oil wells in depths of 10,000 feet. The capping stack is equipped with four choke outlets, two of which can be converted to flow lines.

The capping stack was successfully tested at Trendsetter's facilities in Houston, Texas and will now be delivered to Singapore where it will be readily available should a subsea well control incident occur.

"Trendsetter was pleased to have the opportunity to work on this project with Wild Well Control. We are very proud that this is Trendsetter's 9th capping stack to build overall."

Hamed Moshrefi, Project Manager



Trendsetter Project Team

EMERGENCY PREPAREDNESS

Over the last quarter, Trendsetter's teams of trained technicians and engineers dispatched to all corners of the world to provide scheduled maintenance support for the four Trendsetter-designed OSRL capping stack systems located in Norway, Brazil, South Africa and Singapore. In addition, the teams conducted scheduled maintenance on the HWCG system, upgrades to the MWCC TLP Stack at Trendsetter's Houston facility, as well as various other equipment related activities at MWCC's facility in Ingleside, Texas.

Trendsetter's planning and preparedness teams also stayed busy continuing their support of the industry's deep water response preparedness. Through Subsea Well Response Project (SWRP), Trendsetters supported Statoil ASA's Well Capping Exercise in September in Stavanger, Norway. The exercise was conducted to provide insight to local regulator PSA and industry peers as to how Statoil is prepared to deal with a subsea well control event, as well as the process to plan for such an event using the Master Guide for Well Response being finalized by SWRP. Trendsetter's team led the plan development, training and exercise facilitation. In order to create a sense of realism, extensive animations and videos were produced to support the exercise using Trendsetter's in-house ROV simulator system provided by GRI Simulations.

Training was also conducted through Australian Marine Oil Spill Centre Pty Ltd (AMOSC) for the offshore operator base in Perth, Australia. Trendsetter conducted Source Control Awareness Training for the attendees, which included representatives from ConocoPhillips, Apache, Shell, BHP, Santos, Woodside, ENI, INPEX, Chevron and regulator, NOPSEMA.

The team continues to support the industry from Newfoundland, Canada to Rio de Janeiro, Brazil and all points East and West.



CAPPING STACK TECHNOLOGY

Post-Macondo, the deepsea oil industry was challenged to revitalize faith in equipment integrity and contingency response. Various consortiums of international oil companies aligned to design, build, distribute, and plan for future subsea well crises. The first of such collaborations was the Marine Well Containment Company (MWCC), consisting of ten Gulf of Mexico companies involved in deepwater drilling. MWCC awarded Trendsetter the contract to develop and manufacture a single ram capping stack, which was completed in an unprecedented 7 ½ weeks. This was a critical element that allowed drilling to resume in the GOM, establishing Trendsetter as a global leader in providing fit-for-purpose capping stack technology.

Since, Trendsetter has built eight additional custom capping stack systems, including the HWCG Capping Stack, Arctic Capping Stack for Shell, Tension Leg Platform (TLP) Capping Stack for MWCC, four Oil Spill Response Limited (OSRL) Capping Stacks, and the Wild Well Control Capping Stack. Trendsetter continues to lead the industry as a global provider of innovative capping stack technology.



18 3/4" 15,000 PSI MWCC 10,000 FT WATER DEPTH 4X 5 1/8" OUTLETS



18 3/4″ 15,000 PSI HWCG 10,000 FT WATER DEPTH 2X 5 1/8″ OUTLETS



18 3/4″ 10,000 PSI SHELL OIL COMPANY 10,000 FT WATER DEPTH 2X 5 1/8″ OUTLETS



7 1/16" 10,000 PSI MWCC 10,000 FT WATER DEPTH 2X 4" OUTLETS



2X - 7 1/16" 10,000 PSI OIL SPILL RESPONSE LIMITED 10,000 FT WATER DEPTH 4X 5 1/8" OUTLETS



2X - 18 3/4" 15,000 PSI OIL SPILL RESPONSE LIMITED 10,000 FT WATER DEPTH 4X 5 1/8" OUTLETS



18 3/4" 15,000 PSI WILD WELL CONTROL 10,000 FT WATER DEPTH 4X 5 1/8" OUTLETS



OUR COMMITMENT TO QUALITY

It is the policy of Trendsetter to meet and/or exceed our customer requirements by on-time delivery of the highest quality subsea equipment, in strict compliance with safety and regulatory requirements, while providing maximum value and superior customer service during and after the sale of products.

Trendsetter is ISO 9001:2008 Quality Management System Certified.

THINK SMART BEFORE YOU START

HSE is our top priority, and shall be managed by establishing objectives, targets, and educational programs that strengthen our culture. Through employee engagement, active participation and leadership from top level management we shall:

- Conduct our activities in a manner that ensures the health and safety of our staff and other persons whom our activities affect.
- Fully comply with all laws, regulations or other requirements within each country or region we operate.
- Identify hazards and implement mitigating actions to reduce safety and health risks and harm to the environment.
- Engage all personnel on HSE to ensure knowledge is shared and best practices implemented across the organization.
- Ensure the protection, integrity and safe operation of all equipment and facilities.
- Protect the environment, reduce waste, prevent pollution and, return surroundings to their natural state.
- Consistently monitor HSE performance and implement strategic initiatives to systematically and continuously improve our program.



David Barbour *HSE Manager*

As Director of HSE, David is responsible for the design, implementation, and management of processes within the organization's health, safety and environmental program. With multiple interfaces, both internally and externally, David ensures compliance to applicable HSE regulations and conformance to client standards, and industry best-practice. David provides guidance and support for all functions within Trendsetter through strategic initiatives to allow for continuous improvement of the HSE program with the goal of incident prevention.

David has over 15 years of experience in upstream and downstream oil and gas construction

and manufacturing, including 7 years in HSE management. Prior to joining Trendsetter, David's previous experience includes managing HSE for all projects within the gulf coast region, including the primary HSE role within the Marine Well Containment System project.

David earned an Associates of Applied Science in Occupational Health and Safety from San Jacinto College, before earning a Bachelor of Science in Occupational Health and Safety from Columbia Southern University.

EMPLOYEE PROFILES



Derek Chaplin Engineering Manager, Drilling/Intervention Systems

As Engineering Manager for Drilling and Intervention Systems, Derek manages subsea controls, ROV tooling, and drilling system engineering activities for multiple projects. Additional responsibilities include optimizing business processes relating to engineering activities to enhance Trendsetter's ability to deliver on-time and within the functional requirements of the project. Previously as a Project Engineer at Trendsetter, Derek was responsible for ensuring technical specifications were met and project documentation was completed in-line with client expectations.

Derek joined Trendsetter as Project Engineer after holding various positions related to ROV tooling, product development, project management and operations management

at service companies within the industry. Derek's background includes project management and design engineering within the subsea oil and gas domain, as well as initiating business operations in the Asia region and managing global projects while based in the UK. Derek holds a Bachelor of Science in Mechanical Engineering Technology from the University of Houston and, most recently, a Master of Science in Subsea Engineering from the Robert Gordon University in Aberdeen, Scotland.



Hamed Moshrefi Project Manager

As Project Manager, Hamed is responsible for the execution and delivery of multiple projects for Trendsetter. Hamed's background in project management and supply chain disciplines makes him well suited to plan and execute client requirements. Responsibilities include project planning, coordination, schedule management and risk management. Hamed's project experience at Trendsetter includes working with major operators on capping stacks, subsea vertical connection systems and ROV tooling.

Hamed joined Trendsetter in 2013 after working in lean supply chain (Black Belt Certified) and project management functions within a Fortune-15 company. Hamed earned a Bachelor of Science in Management from Kettering University in Flint, Michigan.



Nadeem Elnasr Project Manager

Nadeem is currently responsible for safely executing and managing various projects for major operators.

Nadeem has 10 years of engineering management, project engineering and technology development experience in the oil and gas industry. Nadeem's experience includes managing the Subsea North America project engineering and Controls Systems Product groups for a major global service provider in the oil and gas industry.

Nadeem holds a Bachelor of Science in Industrial Engineering with minors in Math and

Mechanical Engineering from the University of Houston. He is currently pursuing his MBA from Sam Houston State University.



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