



Pigging Industry News

the newsletter of the Pigging Products & Services Association

THE PRESIDENT'S LETTER

By Michael Rapp, ROSEN Group, Germany

As this is the first newsletter since our Annual General Meeting (AGM) in February, I'm honored to introduce myself as new President of the PPSA and Jessica Nichols from Inline Services as Vice President; also we welcome our new directors: Felix Schmidt of 3P Services and Graham Jack of Halliburton. Furthermore, I'd like to thank our past President Chuck Harris and the two directors who are leaving the Board – Iain Shepherd after 4 years' service and Simon Bell after 2 years' service - for their dedicated work and contribution to PPSA, while expressing my sincere gratitude to Diane Cordell for her passion and commitment to support our association in making a positive difference in the industry.

Now let's have a look at our most recent activities: our PPSA golf tournament took place on January 29th, 2018. Many thanks to all players and especially the sponsors for supporting this fun and informal event. Its profits will be put towards events for young people in our industry. The PPSA AGM took place on January 30th, 2018. Thanks to all who attended and brought forward their ideas on how PPSA should develop in the future. Especially the opportunities that Big Data and Artificial Intelligence (AI) will bring to our industry were highlighted. Following the AGM, PPSA exhibited at the PPIM exhibition in Houston, USA. Another great PPIM event to meet many PPSA members and spread the word about the work that our Association and its members do to strive towards the industry goal

of 'zero incidents'. In March PPSA exhibited for the third time at the PTC Conference and exhibition in Berlin, Germany. This gave another opportunity to tell operators about the members' work and the free technical enquiry service that our Association provides. In April PPSA and the Pipeline Research Council International (PRCI) hosted a pull through ILI demonstration for Young Pipeline Professionals at the PRCI's Technology Development Center in Houston, USA. This was well attended by enthusiastic young people from both pipeline operators and universities. Special thanks go to Chuck Harris and Hans Deeb from PRCI for initiating this event. As for the coming months, PPSA will again be exhibiting at the IPCE exposition in September in Calgary, Canada. This has become a regular event for PPSA to attend which we are all looking forward to. Also, PPSA will be holding its annual pigging seminar on November 7th, 2018 in Aberdeen, U.K. The Call for Papers has already been announced, to submit a paper please go to www.ppsa-online.com/ seminar.

As well as these events, our association has developed online Pig launcher/receiver simulators which are available at www.ppsa-online.com/pig-launcher-simulators. These shall support both pipeline operators and PPSA members in their efforts to inform staff, especially those without prior exposure to our industry. However, these do not replace hands-on training though, as

they follow a much simpler process than would take place in the field.

Finally, let's review the recent increase in oil price and the opportunities it will create for us as PPSA members: Over the past few years, the increased focus on more efficient operations and asset lifetime extension, combined with the growing public and regulatory trend towards 'zero incidents', have significantly changed our industry. To reach these goals, the industry will have to make better use of the 'big data' that we generate through our pigging products and services. This will require a closer cooperation between all parties involved, including regulatory bodies, to drive acceptance and utilization of new technologies such as Artificial Intelligence (AI) in our industry to the benefit of us all: pipeline operators, PPSA members and the public. ●

NEW Members

Full

Dtaic Inspection Equipment Co., Ltd P. R. China

EnviroCal, Inc, USA

Morken SA, Argentina

Pipeline Equipment, Inc, USA

Sofield Analytic Pipe Asia SDN BHD, Malaysia

Associate

Galaxy Brushes, USA

Individual

Anssi Lehtikainen, Finland

Penspen delivers turnkey pigging project

Penspen successfully completed the proving, cleaning and in-line inspection of a 16" gas pipeline in Southern England on behalf of a pipeline operator. Penspen leveraged the skills of its integrity consultants and operations teams to deliver a one-stop, turnkey solution for inspection vendor selection, pigging operations and integrity assessment. The initial step in the project involved Penspen's integrity consultants completing an initial pigging feasibility review, preparing an in-line inspection invitation to tender and delivering a non-biased, independent technical and commercial vendor selection for the customer. During the pigging operations, the team provided on-site project management, planning, scheduling, coordination and in-field technical support.

In addition to this, and in line with Penspen's unbiased technical and commercial vendor selection, Penspen provided personnel, plant and materials. They also performed all venting and purging activities at the pipeline's above ground installations and the valve operation, pig loading and pig cleaning activities. Penspen engaged the services of Baker Hughes, a GE company, for provision of the high resolution inline inspection vehicle and Pigtek Ltd. for the provision of utility pigs and pig tracking services. Using the results from the inspection data, a comprehensive five-step integrity assessment of the pipeline was made:

- Data review – All available pipeline inspection data was reviewed to identify the likely cause of anomalies reported. A review of the number and type of anomalies reported was conducted, highlighting areas of anomaly concentration. In addition, any significant changes between the available inspection datasets were highlighted.
- Defect verification and repair review - A detailed review of the defect verification results was undertaken and correlated with a review of the repairs along the pipeline.
- Metal loss defect assessment - An assessment of the severity of all metal loss defects reported by the in-line inspection was completed. The data was

assessed to the most appropriate available guidance taking into account the stated measurement tolerances of the inspection tool and the pipeline specification. Defects requiring a more detailed analysis (e.g. interacting features) were identified, and additional analysis was conducted where necessary. The assessment also identified any defects requiring further investigation or repair to allow for the long-term safe operation of the pipeline.

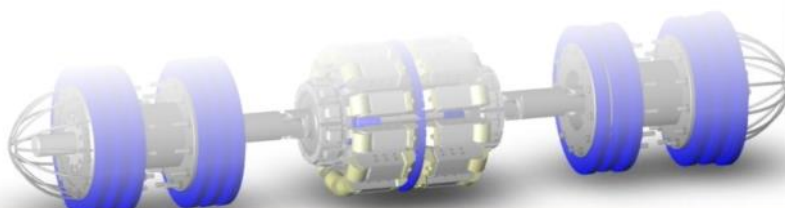
- Corrosion growth assessment – The corrosion growth rate was calculated by matching as many of the current and historically reported anomalies as possible. Features were selected for matching based upon their location along the pipeline and their reported depth. A corrosion rate was obtained from the matched features using Penspen's multiple defect remnant life prediction (MDRLP) methodology. The calculated corrosion rate accounts for the tolerance and confidence of the inspection methods. The estimated corrosion rates were used to make recommendations for a short-term repair strategy and future in-line inspection programmes.
- Repair strategy and future integrity - A plan of future repairs was developed based on the reported corrosion dimensions and the estimated corrosion rates. Existing repairs conducted on the pipeline were reviewed and comments were made on the suitability of the chosen repair method for long-term pipeline operation. Schedules for future in line inspections (ILI) were produced based on the maximum operating pressure and the design pressure, and a review of the operator's existing re-inspection strategy was made. The recommendations for future ILI considered the requirements for monitoring and control of corrosion features and likely damage caused by third party activity.

Head of Integrity & Asset Management at Penspen, James Brown commented: "Penspen has been providing integrity services for 60 years and this project is a great example of how we can bring together expertise to deliver turnkey fit for purpose assessments. This gives operators the data and insight they need to make quick, cost-effective decisions enabling them to operate their assets with confidence. ●



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Subsea hot tapping and plugging allows pipeline abandonment

STATS Group was contracted to assist with the isolation and abandonment of a 10" oil pipeline in the Gulf of Mexico, at a water depth of approximately 25 meters. The project requirement was to supply personnel and equipment to complete subsea hot tapping and plugging at two locations to facilitate the removal of a short section of pipework as part of a decommissioning project. Once the pipeline was successfully isolated, purged and cut, a mechanical connector with a blind flange was installed to terminate one end of the pipeline and the other end was fitted with a full bore valve and blind flange.

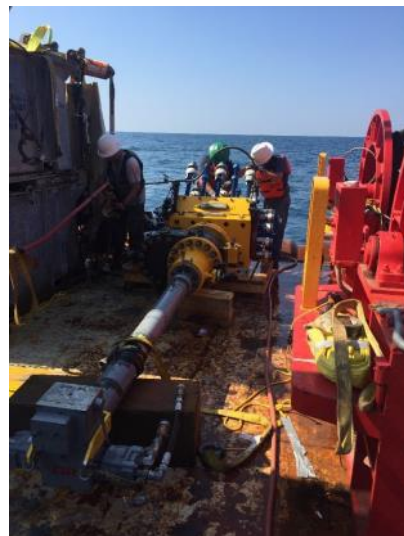
STATS' patented BISEP[®] which is deployed through a mechanical hot tap clamp and slab valve was selected as it provides leak-tight isolation of pressurised pipelines through a single fitting. The BISEP offers significant safety advantages over traditional line stop technology as the hydraulically activated dual seals provide fully proven and monitored isolation of the pipeline inventory throughout the entire project. A key project requirement was to flush the isolated section and ensure all the oil was removed prior to cutting the pipeline and recovering it to the vessel. STATS utilised the integrated port on the BISEP launcher to attach a downline from the vessel to each BISEP launcher (upstream and downstream) allowing the pipe section to be flushed

with seawater. This feature exclusive to the design of the BISEP, prevented additional hot tapping and reduced the number of fittings installed on the pipeline which saved the client time, money and reduced risk to the project.

Once the section of pipe to be removed was successfully cleaned and purged, the pipe was then cut behind each BISEP and safely recovered to the vessel. End connectors were then installed on both ends of the pipe and two new sections of pipe were installed consisting of two flushing ports, a barred flange and a 10" ball valve. Following installation of the new pipe sections and with the BISEPs continuing to isolate the pipeline, a leak-test was conducted against the rear of the BISEP. Once the new section of piping was proven, both BISEP's were unset, retracted and recovered to the surface. Completion plugs were installed in both mechanical hot tap clamps and the slab valves were removed and recovered to the vessel.

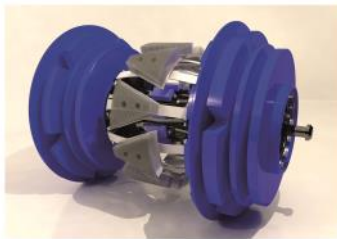
The pipeline was then flushed through the ports on the new section of pipe to verify that all the oil had been removed. Once the pipeline had been verified clean, the flushing hoses were recovered and the new section of pipe was removed. A blind flange was installed on one end of the connector effectively abandoning the section of pipeline running to the land-based facility. Another blind flange was installed on the 10" ball valve securing that section of pipeline and allowing for future tie-ins.

Scott McNae, General Manager, USA for STATS Group, said: "Aside from weather delays the project was delivered according to plan and without incident. Major benefits achieved by the client from using the BISEP over traditional line-stop technology included requiring less fittings and hot tapping on the pipeline and the ability to flush between both isolation barriers prior to breaking containment thus avoiding any release of oil to the environment. Additionally, the design of the BISEP provides the ability to pressure test the newly installed pipework prior to introducing inventory back into the pipeline.



STATS Group's subsea hot tapping and plugging

Pigging Products



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Cleaning campaign vs. high quality (HQ) maintenance cleaning

This article considers the comparison of the above-mentioned terminologies which are well known in the oil & gas industry. Pipeline integrity is an important topic that goes hand in hand with the need to operate and maintain a pipeline to ensure continued, safe and efficient performance. **Reinhart Hydrocleaning SA** (RHC SA) is a family business based in Switzerland that has been providing innovative, hydromechanical pipeline cleaning tools for over 65 years. Designed and manufactured in house, the unique technology for pipeline cleaning can be applied to a range of industries and includes pipelines manufactured from steel, cast iron, PVC, Flexibles, etc.. Besides cleaning oil pipelines with difficult to remove debris and/or hard deposit build up, RHC SA is often selected when the pipeline needs a UT or MFL metal loss inspection. A cleaning campaign is launched with the aim to collect 100% of pipeline data.

Once the cleaning campaign has been successfully executed and the pipeline has been inspected, low performance, off the shelf standard utility pigs are commonly used for production/maintenance pigging often to the detriment of the level of cleanliness previously achieved. So why not use the existing high-quality tailor-made cleaning tools on a regular basis to maintain pipeline cleanliness and long-term integrity?

Compared to utility pigs, RHC SA's technology ensures cleaning performance is maintained over fewer runs. Throughput is maximized during continued operation and therefore provides long term cost savings. During the past 10 years, RHC SA started cleaning various pipelines in diameters 14"-34" with length of 15km – 356km on a regular basis in the UKNS/ Norwegian sector (single and multiphase, waxy pipelines, internally coated pipelines and the removal of Calcium Carbonate scale). Operators understand the challenges of a well-organized, structured cleaning campaign. Project co-ordination and logistics become more complicated where sub-contractors and internal company personnel are involved making the cleaning campaign time consuming and labour intensive. Resource requirements would typically include trap operators, riggers, ops/production personnel, HSE, gas monitoring, etc.. Based on trap location and cleaning tool condition post run, debris management and disposal may require a specialist contractor to handle and clean the used cleaning tools and often a freight forwarder to ship the tools to a cleaning company/start location. Personnel need to be in place at the right time, priorities need to be shifted and standby time is often unavoidable. Pig launchers/receivers are used more frequently which leads to an increased risk of equipment failure, hydrocarbon release, door seal and isolation valve failure or leakage. Besides the risk of material failure, the possible risk of an incident and harm to people and environment is more likely. Maintaining pipeline condition after the cleaning campaign by utilizing specialized mechanical clean-

ing tools on a regular basis as part of a production maintenance pigging strategy keeps the pipeline in a clean condition through its operational life. The use of HQ cleaning tools will eliminate the need for an extensive and costly cleaning program ahead of scheduled MFL or UT inline inspections in the future.

RHC SA provide specialized HQ mechanical cleaning tools designed and manufactured to suit the pipelines operational conditions, to initially clean the line to the required standard necessary to ensure successful inspection or re-instate production performance. Thereafter the RHC tools can be refurbished and used for normal production and maintenance pigging as part of an operator's ongoing integrity management strategy. RHC SA is not just a company for "special cleaning jobs" but a company that is able to support and maintain long-term pipeline cleaning and integrity management on a regular basis throughout the operational lifetime.



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Case study – 28 inch Black Powder pigs

iNPIPE PRODUCTS™ was approached to provide a design and manufacture solution to remove Black Powder. Upon review of the details and discussion with the client, it was established that they had previously ran standard pigs. Based on the client's pigging reports shared, the previously selected tools (provided by others) had experienced excessive wear to the 4 to 7 o'clock position and brushes.

The client was obviously concerned with the level of wear and therefore limited cleaning efficiency of the tools.

iNPIPE PRODUCTS™ approach was to ask questions on the history of the asset and based on their 30 plus years of experience proposed a design based on the pipeline specific characteristics. This included use of lightweight materials, bypass facility and jetting head design based on the type of debris present. Subsequently iNPIPE PRODUCTS™ was selected to provide bespoke designs.

During detailed design stage the tools were weight optimised and bypass facilities were designed based on calculations considering the client's pipeline operating parameters.

The final design incorporated:

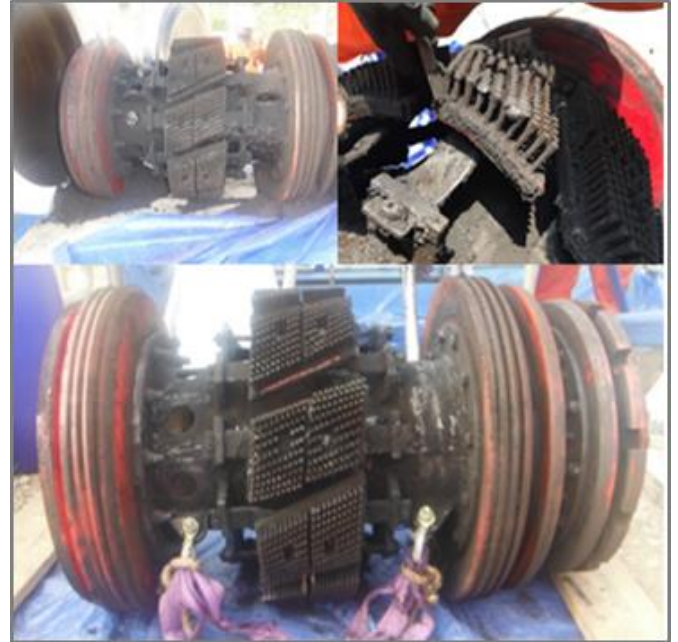
- Unique disc package configuration
- Jetting head system to create turbulence ahead of the pig
- High grate memory wire brush units
- High-tensile light-weight bodies

Following mobilisation to site the tools were launched as part of the client's normal operational pigging programs. Upon receipt after negotiation of the 56km pipeline length, the iNPIPE PRODUCTS™ tools had nominal wear to both discs and brushes but most importantly removed large volumes of debris. Based on assessment of the disc wear, by the client, it was confirmed that the tools had travelled in a centralised plane, with no 'nose-diving'.

Black-Powder is known to be highly abrasive and a growing concern for clients globally. iNPIPE PRODUCTS™ unique design and manufacturing capabilities enables the company to develop designs based on asset specific requirements and clients KPI's

to improve both asset integrity and product throughput.

iNPIPE PRODUCTS™ is an international recognised leader in the design and manufacture of pipeline pigging products, including foam, disc cup cleaning tools, signalers and launching and receiving systems, as well as engineered solutions for pipeline isolation and joint testing.



iNPIPE PRODUCTS™'s 28 inch Black Powder pig

iNPIPE PRODUCTS™ awarded the prestigious RoSPA Silver Award for health and safety practices

iNPIPE PRODUCTS™, based in Brompton on Swale, UK, has been handed a prestigious award in recognition of its practices and achievements in helping its staff, customers and contractors get home safely at the end of the working day.

iNPIPE PRODUCTS™ has achieved a Silver in the internationally-renowned RoSPA Health and Safety Awards, the longest-running industry awards scheme in the UK.



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Halliburton introduces InnerVue™ non-intrusive pipeline and wellbore diagnostics

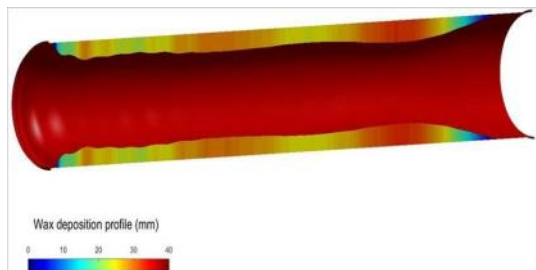
Halliburton has introduced InnerVue™ non-intrusive pipeline and wellbore diagnostics, a technology that quickly and accurately detects blockages or leaks and profiles deposits in pipelines and wellbores. Without the need for intrusive intervention, InnerVue diagnostics interprets pressure waves reflecting from internal features of the pipeline or wellbore and extrapolates the pressure reflections into deposit profiles or blockage and leak locations. A proprietary software analyzes the pressure wave signature to determine the profile of the hydraulic diameter of a pipe or wellbore, detecting blockages such as stuck pigs or the top-of-a-cement plug, and identifies fluid leakage locations and volume.

Scott Greig, senior director for Halliburton Pipeline & Process Services, said, “InnerVue diagnostics is unique in its ability to help customers make better decisions by monitoring the effectiveness of their flow assurance program, reducing the cost of blockage remediation, and preventing product loss and environmental damage.”

InnerVue diagnostics has been successfully deployed in both the U.S. and international markets. The service was recently used in a successful offshore clean-out operation involving a stuck pig incident 40 days after the start of production that resulted from the build-up of hydrates and wax during the first operational pig run. In another case, the service was used to accurately locate a stuck tool in a high-risk pipeline in South Texas that was causing an operator to lose valuable production uptime. Additionally, InnerVue diagnostics mapped severe wax deposits in a critical pipeline in the North Sea, providing a total debris profile within one day, and verified top-of-cement depth in a well without the need for a topside setup change or a wireline run.



InnerVue survey set up and data collection



InnerVue analysis—3D profile of pipeline wax deposit

ROSEN Energy and Innovation Forum 2018

The 4th ROSEN Energy and Innovation Forum (REIF) came to a conclusion after three days of thoughtful discussion and innovative ideas, resulting in a new standard for the industry.

“I am very pleased to see representatives from many industries and, most of all, from all parts of the world. The global factor in this collaboration will drive ideas,” said the founder and CEO of the ROSEN Group, Hermann Rosen, in his welcome speech at the ROSEN Innovation Center. Over 100 professionals, from more than 20 different countries, with experience and expertise in fields including operation, regulation, academia, consultancy, technology and services attended the event at ROSEN’s location in Lingen, Germany.

The theme of this year’s REIF, “Zero Incidents — Learning from other industries,” was carried throughout the days’ events. The diverse group of keynote speakers gave presentations and held an open dialogue with the attendees. Specialized workshop sessions were also held, in which key topics surrounding the idea of zero incidents were discussed and debated in smaller groups. On the last day of the REIF, the results of the workshops were presented. They were then examined by a panel of experts in various fields in an open forum.



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Many thanks to all our golf tournament sponsors:

The PPSA golf tournament took place at the BlackHorse Golf Club, Houston, USA on Monday 29th January 2018. A special thank you to all the tournament sponsors and players and congratulations to all the winners:

First place:

Ricky Ramon (ROSEN Group), Jarrod Flores (ExxonMobil), Rodney Vasquez (ExxonMobil)

Second place:

Andy Gossner (Shawcor Inspection Services), Steve Barnett (AirGas Priority Nitrogen), Micheal Preuit (Boardwalk Pipeline Partners, LP), Randy McNaughton (Enbridge Energy)

Third place:

Kevin Partridge (Surveying And Mapping, LLC), Brian Rode (Strike, LLC), Julio Guidi (Strike, LLC), Matt Chabala (Surveying And Mapping, LLC)

Closest to the Pin:

Ricky Ramon (ROSEN Group)

Longest drive:

Jarrod Flores (ExxonMobil)

Next year's tournament is due to take place on Monday 18th February 2019. For details please visit : <http://ppsa-online.com/golf.php>.



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Inline Service announces completion of new manufacturing facility expansion

Inline Services is very excited to announce the completion of their new 15,000 sq. ft. manufacturing facility expansion. Construction on the building started in September 2017 and was completed in May, 2018. The new building is adjacent to Inline's original manufacturing facility and corporate office building in Tomball, Texas, USA. The newly added space houses additional manufacturing equipment, and allows for more capacity to keep up with increased product demand, as well as future expansion of their new custom urethane product development services scheduled to launch later.

"The completion of our new space could not have happened at a better time." says Sales Manager of Inline Services and PPSA Vice President, Jessica Nichols. "Our busy season has begun, and we are excited about the ability to increase production and fulfill customer orders more quickly than ever before."

Inline Services was established in Houston, Texas in 1992 to offer pigging equipment and associated technical services to the pipeline and process industries. Inline is led by a team of industry professionals, each having many years' experience in the construction and management of pipelines.

Pre-inspection cleaning case study by T.D. Williamson

Chemical cleaning prepares gas pipeline for successful in-line inspection

Between pipeline cleaning and inspection, it is customary to run a gauge pig to determine if there are bore restrictions that can limit the piggability of an in-line inspection (ILI) tool. Gauge pigs provide insight into some conditions inside the pipe, but not all of them. They're not intended to measure pipeline cleanliness or indicate if debris has built up to the point that it will impair the inspection tool's data-gathering capabilities.

Recently, a natural gas operator believed their line was prepared for ILI after running a foam proving pig and a gauge pig. This assumption, however, could have proven costly due to the probability of debris in the system. **T.D. Williamson (TDW)** partnered with the operator to develop a more stringent cleaning plan that would result in first run success and ensure data accuracy.

Avoiding risk of degraded data and ILI failure

To clean and prove a natural gas pipeline prior to ILI, the operator ran a foam cleaning pig and received no debris. Although this did not eliminate the possibility that there was debris inside the pipe, it prompted the operator to run the gauge pig immediately, without first launching a series of more aggressive cleaning pigs to remove any existing debris. Because the line had little to no pigging history and its cleanliness had not been confirmed, TDW suggested the operator continue with its original plan of running chemical slugs before ILI. This would reduce the likelihood of sensor lift off during ILI and avoid the risk of degraded data, inspection failure and a costly ILI re-run. Initially, the program included four chemical cleaning batches with the cleaning solution injected between two batching pigs followed by two sweeping pig runs to remove residual chemical and debris. Debris and slug sample analysis after the final run of the initial



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plan suggested that additional slugs at higher concentrations should be run. In the end, it took eight chemical batching runs and two sweeping runs to reach target cleanliness specifications. But the effort paid off: following the chemical cleaning program, the ILI run was successful the first time, and the tool was received with no debris or solids.

First run success saves time and money

Capturing the most accurate data within budget requires getting the ILI run right the first time, and that can happen only if the pipeline is clean enough for the ILI sensors to make good contact with the pipe wall. As P.J. Robinson, TDW Field Support Engineer, noted, failure to achieve first run success can mean additional tool runs, increased downtime and tool recovery or repair, all of which can add considerably to project costs.

“Short time schedules push projects to skip crucial steps in the pre-ILI cleaning operation, which means critical features may be missed because of heavy debris,” he said. “By proper planning and execution of pre-ILI cleaning programs, operators can avoid unexpected costs and achieve successful inspections.” ●

CPPI's good performance in Sudan

China Petroleum Pipeline Inspection Technologies Co., Ltd.'s geometric pigs have been successfully carried out for **Sudan Petroleum Pipeline Company**. The excavation and verification were done at the HIA -ELROGEL worksite on April 20, 2018 and proved to be accurate and got the recognition from the client. The 8 inch gasoline pipeline is over 815km and divided into seven sections for cleaning and pigging. Up until now, five sections of pipe cleaning and deformation inspection have been completed, and over 20 rounds of cleaning pigs, dummy pigs and geometric pigs have been run. Based on the location provided by the initial report, the deformation point was found accurately. The maximum depth of deformation was 17.84mm and 8.1% OD at 10:00 o'clock. The position of deformation point is accurate, its quantization and circumference are both within the error allowable threshold. In total, excavation of two deformation points (one place of 14.6% OD deformation pipes has been changed), replacement of one ball valve, repair of one ball valve that not fully open, repair of one abnormal reserved tee and one tee without bar (plan to be repaired) were done.

The deformation point was excavated successfully, the purpose of pipe cleaning was realized, the pipeline anomaly which may affect the passing through of corrosion inspection tool was found successfully, and the obstacle was cleared for the subsequent cleaning and inspection work. What's more important, it eliminated



Geometric pig launching at worksite

the hidden trouble for the client, CPPI's professional technical has gained high trust and recognition from the client and set solid foundation for the following work.



Deformation point

4Pipe Hidropig rehabilitates pipeline

Industrial pipes are generally used to carry fluids, but a preventive maintenance procedure is necessary.

4Pipe Hidropig carried out the operation in Itapeperica - Minas Gerais, Brazil, at the "Nacional de Grafite", to rehabilitate the hydraulic characteristics of the tailings pipelines. Using foam Pigs, with several densities, some with scraping and cutting elements, 4Pipe Hidropig provides effective removal of the incrustations adhered to the interior of the pipe, as well as, carrying of solids that were in the inferior part. This solution generated an increase of 11.60% in the system flow, representing an increase in daily water volume of 456.00m³. Operating pressure reduced after conclusion, such as power consumption.



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Enduro Pipeline Services receives Oklahoma's Partners for Progress Award

Enduro Pipeline Services has received Oklahoma's prestigious Partners for Progress Award from the **Oklahoma Association of Technology Centers**. The Oklahoma Association of Career and Technology Education (OkACTE) Partners for Progress award recognizes businesses and industries that have made outstanding contributions to the improvement, promotion, development and progress of career and technology centers in Oklahoma, USA.

Headquartered in Tulsa, OK with additional offices in Calgary, Canada, Enduro Pipeline Services provides in-line-inspection services, cleaning pigs, tracking equipment plus project management services to the pipeline industry.

Dwane Laymon CEO of Enduro Pipeline Services shared the value of Central Technology's partnership with Enduro. "Central Technology had been assisting with Enduro's safety training program for years," he said. "After learning about the Pipeline Technology Program we knew we wanted to support and encourage students wanting a career in the oil and gas industry. Enduro donated two 24" pipeline cleaning pigs, one 8" cleaning pig and two Enduro Pig Poppers to the



Enduro Pipeline Services receives Oklahoma's prestigious Partners for Progress Award

program in 2016. We also donated services by performing a DdL survey (geometric caliper inspection) on the test loop and provided Central Tech with the data obtained from the run."

Central Technology has one of the few pipeline test loops in the country, because of the partnership Enduro has been able to test new products and train employees on the proper use of equipment. As a service provider company, Enduro understands the importance of having qualified pipeline professionals in the field. By working with the students Enduro can offer valuable insight and training they might not receive before completing the program. Twice a year Enduro also hosts facility tours for students and instructors, allowing students to see pipeline tools and equipment being built and get a hands-on experience with pigging products. ●

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The evolution of ultrasonic inline inspection white paper

NDT Global a leading supplier of ultrasonic pipeline inspection and integrity services, has announced the publication of 'The Evolution of Ultrasonic Inline Inspection' white paper.

Guaranteeing the safe operational conditions of pipelines is paramount to any integrity management program. Intelligent inline inspection (ILI) tools are widely used throughout the industry to guarantee such safe operations. Ultrasonic technology (UT) is the most accurate and reliable iteration of ILI technology available today.

These inspection tools record data while travelling through the entire pipeline from launcher to receiver. By taking advantage of the highly accurate data offered by NDT Global, alongside the overall service offering, operators rarely need to make major concessions or adjustments to their pipelines.

This white paper explores technological advances that have been made to support ILI using ultrasonic technology, to include hardware and inspection improvements. It further examines the role ultrasonic modeling plays to support and optimize inspection results. "The Evolution of Ultrasonic Inline Inspection" white paper can be downloaded at: <https://www.ndt-global.com/resources/whitepaper-evolution-of-ultrasonic-inline-inspection>



The Evolution of Ultrasonic Inline Inspection

NDT Global are awarded ISO 14001:2015 certification

NDT Global are delighted to announce the successful implementation and certification of the 14001:2015 standard for the European operations. ISO 14001:2015 helps organizations achieve the intended outcomes of its environmental management system, which provides value for the environment, the organization itself and interested parties. This is to certify that the Management System of NDT Global GmbH & Co. KG has been found to conform to the Environmental Management System standard: ISO 14001:2015. This certificate is valid for the following scope:

- Design and construction of pipeline inspection systems
- Planning and execution of pipeline inspections to include data analysis and assessment of results

"In line with our sustainability strategy, NDT Global continues to minimize our environmental footprint by increasing energy efficiency and continuously improving measures taken to protect people and the environment," said Vice President Health, Safety & Environmental, HSE Barry Reilly. "NDT Global is proud to achieve certification for this new 2015 standard."

New member: Dtaic Inspection Equipment (Suzhou) Co., Ltd, China

Dtaic Inspection Equipment (Suzhou) Co., Ltd, located in Suzhou New District, Jiangsu Province, China, mainly engages in R&D of pipeline inspection tools, inspection services, inspection data analysis and pipeline integrity assessment. It is an advanced pipeline inspection company integrating marketing, equipment R&D, internal and external pipeline inspection, and data analysis. They endeavour to provide pipeline pigging services in such areas as long-distance oil and gas pipelines, urban natural gas pipelines, oil and gas field gathering pipelines and refinery pipeline networks.

The factory integrates R&D, processing, assembly, testing, cleaning and warehousing. Dtaic relies on its professional R&D team, precise manufacturing process, efficient work flow, strict monitoring service to pursue excellence, serving the global customers in a flexible, high-quality and efficient manner!

Dtaic has a global marketing service network. They have established some branch offices in different cities in China to shorten the service scope and enhance customer service ability.

Dtaic boasts agents and clients in multiple countries and regions such as Kazakhstan, Iran, Kuwait, UAE, Sudan, Nigeria, Malaysia and so on. They have established a stable sales service network and will continue to increase overseas sales to explore the international market.



Dtaic Inspection Equipment Co., Ltd's inspection pigging

3X Engineering's client carries out emergency repair in Indonesia

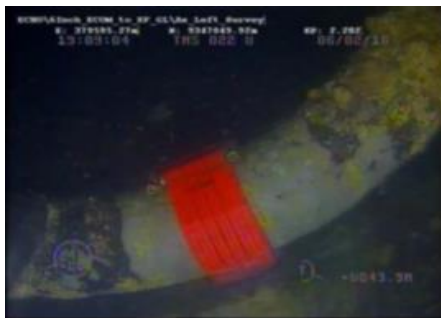
The objective of the Emergency Pipe Repair Solution (EPRS), performed in early 2017 by **3X ENGINEERING'S (3X)** client, was to stop an on-line gas leakage located at one of the bends of a 6" subsea line at a depth of 30m in Indonesia. As per the technical training received by the client a few months earlier from 3X Specialist and thanks to their safety stock located on-board, they were able to successfully install the STOPKiT® Offshore by themselves. This emergency repair was conducted in-house within the hour, without any subcontractors and heavy subsea logistics.

After inspection, it was decided to stop the leakage of the 6" subsea gas line. As per their EPRS procedures, the client picked one of their several STOPKiT® Offshore available on the platform (no procurement delay - immediate solution available).

The repair was performed as follows:

- Position the STOPKiT® Offshore next to the leak using the STOPKiT® Positioner device and tighten softly to let a free sliding capacity.
- Slide the STOPKiT® Offshore over the leak. Rubber patch will be perfectly centred on the leak thanks to the STOPKiT® Positioner device.
- Tighten alternatively the right screw and the left screw to keep the two bars parallel. Repeat until torque reaches 40 Nm for both screws.

The leak was rapidly stopped despite the challenging bend location. This proves the capabilities of 3X's STOPKiT® to efficiently control on-line leakage. This solution is only temporary. It allows you to fix the emergency and schedule peacefully for permanent repairs in the upcoming weeks or months.



STOPKiT® successfully installed on the bend

PPSA/PRCI host pull through demonstration for young pipeliners

The **Pigging Products and Services Association (PPSA)** and the **Pipeline Research Council International (PRCI)** hosted a pull through ILI demonstration for Young Pipeline Professionals at the PRCI's Technology Development Center (TDC) in Houston, USA.

Over 65 Young Pipeline Professionals, many of whom are members of the YPP (USA) were given a tour of the test loop facility, followed by a demonstration of a T.D. Williamson (TDW) Multiple Dataset (MDS) ILI tool being pulled through a 12 inch diameter pipeline. Prior to the live pull test, Jason Matocha of TDW provided an overview of the MDS platform. Data was recorded showing where anomalies, such as metal loss, dents and others, are located within the test string.

The young pipeliners were then treated to an informal BBQ (cooked by TDW staff) and networking with PPSA members, who offered their expertise and general advice about the pigging industry. The exhibitors included Enduro Pipeline Services, Entegra, Halfwave AS, Halliburton, Inline Services, ROSEN Group, and T.D. Williamson. Following the BBQ, Adrian Belanger of TDW showed the group how to analyse and interpret MFL data. The young pipeliners showed great enthusiasm asking lots of questions about the inspection data analysis.

Thank you to Chuck Harris of TDW for organizing the event and to the PPSA member companies that supported this great investment in the next generation of leaders. Also a very special thank you to Hans Deeb and PRCI for their partnership and hosting at the TDC. The event is part of PPSA's ongoing commitment to encouraging more young people to get involved in the pigging industry. This year PPSA also sponsored the YPP USA's Symposium and the Oklahoma State University Institute of Technology's Pipeline Integrity Program's graduation luncheon.

More information is available about PPSA at www.ppsa-online.com and PRCI at <https://www.prci.org/>. For more information about YPP (USA) see their website at <http://yppusa.org/>.

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