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from technology

PWRI OPNet

**Produced Water Re-injection
Operational Network**

OTM Consulting Ltd

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g	FM	DR		January 2012
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Produced Water Re-injection Operational Network Membership – Introduction and Benefits

You are invited to become a member of the Produced Water Re-Injection Operational Network (PWRI OPNet).

Network focus: Sharing knowledge within operational issues associated with Produced Water Re-Injection systems.

PWRI OPNet will provide a forum for sharing knowledge on operational issues associated with Produced Water Re-Injection systems. The overriding aim is to bring together individuals and organisations to share experience, identify problems, work towards a solution and bring benefits to the E&P sector.

PWRI OPNet's objective is to advance its members' knowledge within operational issues associated with Produced Water Re-Injection systems. To do this PWRI OPNet will facilitate the sharing of established best practices and leading edge thinking in Produced Water Re-Injection Operations. The network will be led by operators, who will offer invitations to researchers, academics and service providers to present at the network meetings; membership is initially limited to operating companies.

The benefits of PWRI OPNet membership are:

- Belonging to a professionally-administered and facilitated Produced Water Re-Injection knowledge community
- The opportunity to network and share experiences/ lessons learnt with a leading group of operators
- Attendance at two-three Produced Water Re-Injection network workshop meetings each year
- Access to a members' area of a dedicated PWRI OPNet website containing specific PWRI management resources made available to the network and all presentations and minutes of PWRI OPNet workshop meetings
- Individual and group opportunities for technology transfer, networking and learning from leading specialists in the field
- Access to a single administrative focal point provided by the PWRI OPNet secretariat at OTM
- The opportunity to contribute to, and gain from, the identification of the leading technological challenges concerning Produced Water Re-Injection
- Provision of other services as specified by the members

This proposal is for new membership of PWRI OPNet, commencing January 1st 2012. The membership fee will be charged on an annual basis. Members can withdraw their membership at any time by written notification to OTM who are the providers of administrative and secretarial support to PWRI OPNet. OTM is a leading provider of technology management solutions to the oil & gas community.

The membership fee, based on a minimum requirement of 6 members, is GBP £3,000 per annum with a joining fee of £1,500 for year 1 only. Membership is open to operators companies. The membership year runs from January 1st to December 31st.

This proposal should be read in conjunction with the PWRI OPNet Membership Agreement, attached as appendix 3. To apply for membership please complete the membership agreement and return it to Michele Turitto at OTM.

Please also address any queries on this proposal to:

Michele Turitto

OTM Consulting Ltd, Beaufort House, 31 Chertsey Street, Guildford GU1 4HA, UK

Tel: +44 (0)1483 598000, Fax: +44 (0)1483 598010, e-mail: michele.turitto@otmnet.com

1 Membership services

1.1 Provision of secretariat

OTM will provide a comprehensive secretariat for the PWRI OPNet, including the following services:

- Promoting and managing interest in the network
- Resolving contractual issues and establishing membership agreements for PWRI OPNet
- Providing a single point of focus for PWRI OPNet
- Bringing together technology interests and industry issues, ensuring the PWRI OPNet operates at the leading edge
- Document control and maintenance of mailing list(s)
- Provision and maintenance of a network-specific website, with private members' area
- Liaison with related initiatives and projects as required
- Widening PWRI OPNet membership
- Provision of other services as specified by the members

1.2 Workshops

It is anticipated that PWRI OPNet will hold two-three meetings per year, with the hosts and venues to be agreed by the members. The meeting length will be one and a half days and will consist of facilitated discussions. The facilitated discussions will include case studies, lessons learnt, technology needs, technical standards etc. On occasions PWRI OPNet may want to organise ad-hoc activities such as vendor visits or product benchmarking.

The workshop meetings will consist of an operator only forum, followed by an opportunity to invite researchers, academics and service providers. The topics for the workshops will be selected by the members. The topics will be rotated throughout the year; each workshop will address an individual topic. Due to the multi-discipline nature of Produced Water Re-injection, this approach aims to bring experts within an area together to share knowledge.

The initial topics to be considered by the membership will be:

- Commissioning
- Production Chemistry
- Environment
- Injectivity Impairment
- Corrosion Management
- Quality of Water
- Well Effects

In addition, PWRI OPNet will have the option of using teleconferences periodically for the presentation of operations problems or case histories where the rapid sharing of information and perhaps the seeking of assistance is deemed important. These would be presented by a member using the internet and teleconferencing, so that members can join the meeting from individual desks and will be limited to one hour duration. This provides another means of learning from others and contributing your knowledge without having to travel long distances to meetings.

1.2.1 Administration

OTM will liaise with the designated host of each meeting (or as appropriate, for each teleconference) at least 8 weeks before the meeting to confirm the arrangements for the upcoming meeting and to obtain host, venue and travel details. OTM will prepare meeting materials such as agenda, name badges, attendee list, maps and joining instructions and will produce minutes, including the presentation slides.

Minutes will be distributed to members within 2 weeks of meetings and mounted on the website as part of the PWRI OPNet knowledge resource.

1.2.2 Hosting

Workshops will be hosted by network member companies, who will need to provide a room with space for seating up to 30, presentation facilities and refreshments during the meeting hours. OTM will produce guidelines for hosts.

1.2.3 Facilitation

It is expected that a chairman who is a technical expert on the issues being discussed will be appointed from amongst the members. Alternatively, and when appropriate, the OTM project manager will chair the meeting.

1.3 Website

A dedicated PWRI OPNet website with a public-access area and a members-only area protected by password can be found at www.pwri.net. The website is maintained by OTM and provides:

- Promotion of PWRI OPNet (members only)
- Case histories (members only)
- Membership details (public access)
- Calendar of events (public access)
- Links to other relevant sites (public access)
- Non-confidential technology information (public access)
- Minutes and presentations from meetings and other PWRI OPNet documentation (members only)
- Q&A discussion group (members only)

OTM will be responsible for ongoing website design and improvements as recommended at meetings, distribution of passwords to users and responding to IT queries received from users. The website will be registered with all major search engines in order to maximise the number of hits on the site.

1.4 Other Services

Other services may be specified by the members as the network matures. These services may include the following possibilities:

- Database of experts/ members
- Best practice guidance
- Identification and database of technology gaps/ needs

2 Membership fees

The annual membership fee per member is GBP £3,000 based on a minimum number of 6 members. This may be reviewed in subsequent years. On signing the membership agreement members will be invoiced for this fee. Late members will pay the same fee and be entitled to all deliverables from the beginning of the year in which they joined.

A one off joining fee of £1,500 will be paid on signature of Membership Agreement, to cover all set-up costs.

3 Further Information

Details of OTM's relevant experience and capabilities are included in Appendices 1 & 2. The PWRI OPNet Membership Agreement is detailed in Appendix 3.

For further information please contact Michele Turitto on +44 (0)1483 598000 or by e-mail at michele.turitto@otmnet.com, or visit OTM's website at www.otmnet.com.

4 Appendix 1: Why OTM

OTM is an independent firm of technology management consultants specialising in upstream oil and gas and the wider energy sector, helping oil companies and their suppliers to identify, commercialise and deploy new technology. The company has staff based in the UK and USA, and works for clients worldwide.

OTM was founded in 1993, and our global clients now include more than 35 Oil companies (such as BP, Shell, ExxonMobil, Chevron, Total, ConocoPhillips, Marathon, Eni, Statoil, PEMEX, ONGC, Saudi Aramco, Petronas etc.) and more than 100 service companies and technology providers (ranging from the major service companies – Baker Hughes, Halliburton, Schlumberger and Weatherford – to a wide range of universities worldwide). OTM also has experience of working with other industry organisations such as the SPE, non-governmental organisations (e.g. DeepStar/ RPSEA), and national government departments.

OTM has an unrivalled set of more than 12,000 senior-level contacts throughout the oil and gas sector worldwide, enabling immediate access to both technology users (oil companies) and technology providers (service companies and suppliers).

OTM has also managed and facilitated numerous Joint Industry Initiatives; OTM is also experienced in drawing consensus from industry groups and driving these groups towards their goals. In particular OTM has experience in:

- Network initiation/ management
- Project management and facilitation
- Workshop/ meeting planning, organisation and facilitation
- Web-based information sharing (e.g. website development/ hosting, webcasts, forums etc.)
- JIP (Joint Industry Project) market testing, initiation and management (for R&D and field trials)
- Standards development (e.g. ISO/ API)

OTM's wider areas of expertise include market intelligence, technology strategy planning and technology commercialisation, with specific capabilities in:

- Technology planning and strategy development
- Technology state-of-the-art reviews, with our own online database technologytradingpost™
- Technology gaps and needs analysis
- Benchmarking - technical (e.g. product reliability analysis) and commercial (e.g. R&D spend)
- Market analysis, and future demand forecasting
- Competitor landscape mapping, and individual competitor analysis
- Business plan development

This places OTM in the ideal position to manage and facilitate the PWRI OPNet.

5 Appendix 2: Selected Project Experience

Joint Industry Initiatives

OTM manages the Subsea Fiber Optic Monitoring group (SEAFOM™) - an international collaborative industry network promoting the growth of fiber optical sensing in subsea applications. SEAFOM™ was launched in mid-2006 following an SPE ATW and already has more than 40 corporate members. OTM's tasks include co-ordinating and facilitating the large pan-industry group of panel members, providing a secretariat, organising seminars and working groups for knowledge-sharing and development of guidelines etc, collating operator 'visions' and critical issues, and developing recommendations. www.SEAFOM.com. Clients include: Aker Kvaerner, Baker Hughes, Cameron, Chevron, Deutsch, Diamould, FMC Technologies, Halliburton, Insensys, Neubrex, ODI, Petrobras, Schlumberger, Sensornet, SensorTran, Shell, Statoil, Total, Tronic, Verrillon, Weatherford, Yokogawa, Ziebel

OTM completed a pan-industry survey of technology needs and opportunities in the drilling, production and facilities sectors of the oil and gas industry, through two of the pan-industry networks which it manages - the Drilling Engineering Association (Europe) and Production Engineering Association - which comprise more than 25 oil company members. Research has been carried out amongst both business unit and technology staff from the oil company members, and the analysed results disseminated to major technology suppliers, RTOs and technology SMEs to provide guidance on user needs. Clients: DEA(e)/ PEA oil company members

OTM manages IWIS (Intelligent Wells Interface Standardisation) - the global pan-industry collaborative initiative to develop standards for interfacing intelligent downhole equipment with subsea control systems. The initiative has been successful in proposing an amendment to ISO standards (in publication) and maintains the IWIS Recommended Practice in support of the standard. OTM's tasks include co-ordinating and facilitating the large pan-industry group of panel members, providing a secretariat, organising seminars and working groups to reach consensus on the way forward, collating critical issues and existing standards, developing recommendations and publicising the initiative. www.iwis-jip.com. 31 companies have been involved in IWIS. Current members include:- 24 companies including Aker Kvaerner, Baker Hughes, BP, Cameron, Chevron, DG O'Brien, Dril-Quip, FMC, JP Kenny, National Coupling Company, Petrobras, Promore, Roxar, Schlumberger, Seacon, Shell, SICOM, Statoil, Total, Tronic, Vetco Gray, Weatherford, WellDynamics

OTM manages the DEA(e) - the Drilling Engineering Association (Europe) - which provides a forum for knowledge and experience sharing and evaluation of key new technologies for drilling applications. OTM provides administration and website management and services include overall co-ordination of activities, development & maintenance of website, and providing a European single point of focus for the association. www.dea-europe.com Clients: Aberdeen Drilling Management, Addax Petroleum, Baker Hughes, BG Group, BJ Services, BP, Chevron, ConocoPhillips, DONG, Eni, ExxonMobil, Halliburton, KCA Deutag, Maersk Oil, National Oilwell Varco, Nexen, Odfjell Drilling, OMV, Repsol YPF, Robert Gordon University, RWE-Dea, Schlumberger, Shell, Sintef, Statoil, Talisman, Total, Weatherford, Wintershall

OTM assists the committee of the CEA – the Completion Engineering Association – with development and management of CEA activities. The CEA, which is mainly US-based, promotes knowledge-sharing amongst its members such that the impact of well completions is better understood in the drilling/completions and reservoir community, and also provides a forum to accelerate the commercialisation of innovative technology to build value for member companies. www.thecea.com CEA members include 19 oil companies, and associate members include 53 service companies, vendors & universities.

6 Appendix 3: PWRI OPNet Membership Agreement

<p>1. Introduction PWRI OPNet is an association of companies ('Members') whose aim is: "To advance its members' knowledge on operational issues associated with Produced Water Re-Injection systems". Administrative services are provided by OTM Consulting Ltd, Beaufort House, 31 Chertsey Street, Guildford, GU1 4HA, UK (OTM). Please contact OTM for additional information: (michele.turitto@otmnet.com)</p> <p>2. Definitions Affiliate means any company or legal entity which directly or indirectly controls, is controlled by or is under common control with a Member. "Control" means the right to exercise more than 50% of the voting rights in such company or legal entity. Representative means the person who is appointed by each Member to act on behalf of the Member in relation to this Agreement. Results means any materials, documents and/or information supplied by OTM that result from or are developed incidental to the PWRI OPNet. Technical Information shall mean any materials, documents and/or information of any kind supplied by Members during or in the pursuance of PWRI OPNet meetings.</p> <p>3. Organisation On being accepted as a Member of PWRI OPNet, the Member shall appoint one representative. All Members have equal representation in decision making. The Representatives shall have power to:</p> <ul style="list-style-type: none"> • decide on changes to the PWRI OPNet objectives and working methods • agree any changes to Members' and OTM's confidentiality obligations (see clause 6 below) <p>Decisions shall be made by the Representatives by simple majority vote (provided that at least two thirds of all the Representatives vote in order to make valid decisions), except for decisions to change members' and OTM's confidentiality obligations which require unanimity of all of the Members' Representatives.</p> <p>4. Membership fee & costs Members shall pay an initial joining fee of £1,500 on signature of this agreement by both OTM and the Participant. Members must pay an annual fee. The fee is currently GBP £3,000. This amount is payable upon signature of this Agreement by both OTM and the Participant to cover the period to 31st December 2012 and thereafter on each 1st January in which this</p>	<p>Agreement remains in effect. This amount may be reviewed in subsequent years.</p> <p>5. Membership term This Agreement shall take effect following its signature by both OTM and the Member. If not terminated earlier, this Agreement shall terminate on dissolution of the Network. This Agreement may be terminated by the Member at any time without cause by writing to OTM. Termination will take effect on the 1st January following receipt of such notice by OTM. No refund of membership fees will be made following termination. Invoices for membership fees properly issued prior to the date of termination will be honoured by the Member. The Member will be entitled to all Results from the Network prior to termination. The obligations of confidentiality contained in this Agreement shall survive the termination of membership by a Member.</p> <p>6. Confidential information Technical Information supplied by Members at any time shall belong to the Member originating such Technical Information. Technical Information and Results shall be considered confidential and shall not be divulged by the Member or by OTM to any person, or organisation other than Affiliates of Members and to OTM, provided that the Member shall ensure the adherence of any Affiliate to whom Technical Information/ Results are disclosed to the confidentiality obligations of this Agreement and shall be responsible and liable for any breach of confidentiality by an Affiliate. This restriction shall not apply to any information which:</p> <ul style="list-style-type: none"> • at the time of disclosure is in the public domain, or • after disclosure becomes part of the public domain (otherwise than through an unauthorised disclosure of the disclosing member, OTM or an Affiliate), or • the receiving party can show was rightfully in its possession at the time of disclosure without limitation or restriction of disclosure, or • is independently developed by the receiving party. <p>The obligation of confidentiality contained in this Agreement shall continue for a period of 5 years from the date of any Technical Information and/ or Results.</p>
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<p>7. Obligations Members shall participate in and contribute to PWRI OPNet in a professional, fair and responsible manner. OTM will use its reasonable endeavours to ensure that PWRI OPNet is managed as specified in the membership proposal. OTM shall not be held responsible for errors, failures or omissions in the execution of PWRI OPNet, which are due to the Member not meeting its obligations under this Agreement.</p>	<p>8. Liabilities Members agree to limit the liability of OTM, in the event that any information contained in the Results owing to any error, failure or omission of OTM, proved to be the cause of any loss or damage to Member, to the cost of re-work of the services provided by OTM.</p> <p>9. Law This Agreement shall be governed by English Law.</p>
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<p>In witness thereof:</p> <p>For and on behalf of:</p> <p>Authorised signature:</p> <p>Name in block letters: Title:</p> <p>Date:</p> <p>Location:</p> <p>For and on behalf of the Member company:</p> <p>Address:</p> <p>Authorised signature:</p> <p>Name in block letters:</p> <p>Title:</p> <p>Date:</p> <p>Location:</p> <p>Purchase Order no.:</p>	<p>OTM Consulting Ltd</p> <p>CHRISTOPHER DUDGEON MANAGING DIRECTOR</p> <p>GUILDFORD, UK</p>
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An invoice will be raised against your Purchase Order number on receipt of the completed Agreement.