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Client	Project Name	Description	Date	Location
Confidential	Soil Temperature Analysis	Soil temperature analysis for an onshore pipeline to support the analysis of waxing potential.	2018	East Africa
Confidential	PSI and Scour Protection	Analysis of pipeline scour and self-burial on an offshore field with sandwaves and megaripples. The soil consists of carbonate sediments and the specific characteristics of which are considered in terms of scour potential and development. Suitable scour protection methods for subsea structures selected and sized.	2018	Offshore Western Australia
Confidential	PSI Analysis	Geotechnical interpretation, pipeline axial and lateral stability analysis for new Kuil-B to Kuil-C flowline.	2018	Ciudad de Mexico
Confidential	Probabilistic Pipeline Embedment	Probabilistic assessment of the scour or sediment accumulation rate for a pipeline route.	2018	Offshore North West Australia
Confidential	Rock Berm Stability Check	Stability and settlement check of the rock berm designs for a pipeline connection.	2018	Baltic Sea
McDermott Middle East Inc	PSI Analysis and Pipeline Embedment	Pipe soil interaction study for the infield gas lift and production flowlines and umbilicals to be installed as part of the Bul Hanine Phase 1B development project in Qatar. Study included an evaluation of existing pipeline seabed embedment, appropriate calculation methodologies and interaction analysis for various soil conditions. Recommendations were made to further enhance the analysis and reduce uncertainty.	2018	Qatar
Total E&P	FENIX Interpretation and Integration Study	Geological, geophysical and geotechnical data interpretation and integration study for a pipeline route within the FENIX Field development project.	2018	Argentina
Confidential	UHB Expert Opinion	Expert review of approaches to defining UHB parameters, depending upon backfill assumptions.	2017	Mediterranean
Confidential	Interpretation and Analysis for Pipeline Friction Coefficients	Soil analysis and geotechnical interpretation to determine pipeline friction coefficients	2017	Persian Gulf
Technip U.K.	Foundation and Pipeline Design Guidelines	Provision of design guidelines of skirted mudmats, bucket foundations and pipelines in liquefiable soils	2017	Global

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Confidential	Power Plant Water Intake Pipelines	Pipeline engineering associated with two water pipelines for the renewal of a power plant.	2017	Northern Europe
Confidential	Survey Consultancy and Engineering Analysis	Survey design, management and supervision for a UKCS CNS tie-back pipeline development project, including route engineering and upheaval buckling analysis.	2017	UKCS CNS
Total E&P	PSI Research and Analyses	Review of CamTore test results and interpretation and update of pipeline-soil interaction analyses	2017	Azerbaijan
Principia SAS	Scour Assessment and Mitigation Design	Scour assessment study along a pipeline and fibre optic cable route, including design of mitigation measures.	2016	Bahrain
Genesis Oil and Gas Consultants Ltd	PSI Analysis	Pipe soil interaction study for an offshore pipeline and assessment of soil parameters for a mudmat and PLEM pile foundation	2016	Egypt
Confidential	Freespan Scour Analysis	Analysis of potential for enhanced scour conditions around a pipeline freespan	2016	Tierra del Fuego
Global Maritime	Jackup-Pipeline Interaction Analysis	Analysis of planned rig move interaction with adjacent pipeline	2015	Qatar
Total E&P	FE Analysis of Tie-In Failure Modes	3D finite element analysis of pipeline and subsea structure (PLEM, SSIV, WYE) interaction to investigate potential failure modes caused by loads during tie-in as part of the Martin Linge field development.	2015	Norway
Confidential	HDD Shore Approach Feasibility Study	HDD feasibility study for a shore approach project involving the integration and interpretation of geological and geotechnical data, evaluation of geohazards, evaluation of differing drilling techniques and appraisal of overall project feasibility.	2015	North America
Confidential	Seismic Liquefaction Analysis	Independent review of seismic analysis for buried pipeline	2015	Mediterranean Sea

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Confidential	MFE Performance Assessment	Performance assessment of an MFE in very soft and soft clays as part of seabed intervention pre-pipelay	2015	Norway
Technip U.K.	Carbonate Soil Design Guidelines	Consolidation of industry research and in-house knowledge of pipeline behaviour in carbonate soils into a guidance note to supplement conventional design codes which do not address such issues.	2014-2015	United Kingdom
Subsea 7	Seismic Design Guidelines	Preparation of seismic design guidelines (including review of codes and worked examples), including for subsea pipeline projects.	2014-2015	United Kingdom
Subsea 7	PSI Analysis State-of-the-Art Review	State-of-the-Art summary of axial and uplift pipeline-soil interaction for surface and buried pipelines.	2014	United Kingdom
Confidential	Trencher Trial R&D	Design and supervision of the construction of an earthworks structure in an old dry dock to simulate specific seabed conditions for the trial of a new subsea excavator.	2014	Blyth
UniversalPegasus International	AKCO Pipeline FEED	Soil zoning, parameter selection and assistance with wave induced liquefaction for FEED study of 28" OD pipeline	2014	Kazakhstan
Total E&P	Appraisal of Rock Fill Suitability	Appraisal of rockfill material and it's suitability for use in a subsea pipeline project, including a technical visit to the quarry.	2014	Norway
Confidential	Foundation Design of Pipeline Repair Tool	Design of a foundation system for a pipeline repair tool.	2014	Northern Europe
		Investigation of the post installation burial of a number of pipeline bundles in the Southern North Sea associated with the ONEgas Asset following a lack of self-burial over time.		
Atkins	Seabed Intervention and Post-Lay Trenchability Review	Review, interpretation and characterisation of soils data leading to trenching method evaluation for 111km of surface laid pipeline offshore Lincolnshire.	2013-2014	United Kingdom
Shell Global Solutions	Expert Review of Pipeline Backfill and UHB Resistance	Expert review of insitu testing within backfill material to evaluate pipeline uplift resistance. Output used by Shell to determine probabilistic UHB analyses.	2013	Kazakhstan

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Besix	Seismic Analysis, OBS and Freespan Analysis	Seismic design, on-bottom stability, on-bottom roughness and free span assessment for an 8km twin pipeline connecting a single point mooring to the onshore processing facility in Jazan, Saudi Arabia. The seismic design considered: seismic hazard assessment, seismic loads on the pipeline and PLEM, seismic liquefaction analysis and slope stability.	2013	Saudi Arabia
Confidential	Geological and Geophysical Data Review	Data adequacy and seabed conditions review for Kalamkas pipeline including a residual risk analysis.	2013	Caspian sea
Technip U.K.	Backfill R&D and Laboratory Scale Testing	Detailed review of the laboratory testing and the literature related to backfill density and mechanisms occurring during the backfilling process for a small-scale laboratory model.	2012 - 2013	United Kingdom
Clyde & Co	Expert Witness Investigating MFE Underperformance	Expert witness engagement relating to the underperformance of an MFE in a pipeline lowering project. Review of soils data, interpretation and detailed investigation of MFE system and it's ability to excavate the seabed.	2012-2013	Indonesia
Confidential	Desk Top Study and Geohazard Analysis	Route feasibility and geohazard analysis of proposed pipeline route.	2012 - 2013	Middle East
Subsea 7	Rockberm Stability Review	3rd party review of rock berm stability against potential for erosion under 100 year design storm event conditions.	2012	United Kingdom
Intertek	Route Development and Survey Consultancy	Route development and survey support for a planned subsea CCS pipeline.	2012	United Kingdom
Horizon Geotechnical Company	PSI, OBS, Scour, Crossing and Installation Analysis	Engineering reporting for two export pipelines to Al Khafji (108km) and to Al Zour (83.4km) and 7 in-field flowlines (lengths ranging between 1.8km and 9.9km) as part of the Dorra Field Development Project, offshore Kingdom of Saudi Arabia and Kuwait. The workscope included determination of soil-pipeline friction coefficient (with and without concrete coating), on-bottom stability evaluation based on DNV RP-F109 Section 3.5, seabed scour development analysis and qualitative recommendations for crossing design and installation requirements.	2011-2012	Kuwait

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Technip U.K.	Pipeline Uplift Design Guidelines	Practical design guidelines for pipeline uplift resistance in very loose sands (typically post-jettied) based on the public domain literature, Technip database, and the work of researchers. Guidelines also covered mobilisation displacements, densification with time, and partial safety coefficients.	2011-2013	United Kingdom
Atkins (Shell)	Decommissioning Trenching Assessment	Comparative assessment of trenching versus other decommissioning options for the pipelines in the Brent Field located in UKCS Block 211/29.	2011	United Kingdom
Technip U.K.	Asgard Hot Tap Foundations Assessment	Foundation stability and settlement assessment for tools to perform a hot tap tie-in, including seabed intervention and improvement works.	2011	Northern Europe
GEMS	EGP3B Pipeline-Soil Interaction Parameters	Evaluation of pipeline-soil interaction parameters for pipeline design leading to lateral buckling, axial walking and on-bottom stability analyses of surface-laid (partially-embedded) pipelines.	2010	Nigeria
Benthic Geotech Pty Ltd	Offshore Survey Engineering and PSI Analysis	As part of a broad foundation (FPSO, offloading buoy, riser tower, manifold, FLET and ILT) and pipeline engineering and design remit, provided pipeline-soil interaction analyses.	2009-2010	Angola
Woodside	Carbonate Soil Pipeline Response	Comparison of carbonate soil centrifuge testing with soils present at the Cossack, Wanaea, Lambert and Hermes fields as part of new and replacement flowline installation. Assessment of the applicability of the findings of the centrifuge testing research and recommendations for lateral response calculations.	2009	Australia
GEMS	Arctic Pipeline Survey Requirements	Broad literature and state-of-the-art review of existing and emergent geophysical and geotechnical survey techniques for arctic pipelines with a particular view of arctic geohazard and pipeline design requirements.	2009	Arctic
Technip U.K.	Seismic Design Guidelines	Guidelines for seismic design for various foundation types (gravity base, caisson, piles) and for pipelines including a review of various existing design codes resulting in seismic design analysis methods for shallow and deep foundations.	2008-2009	United Kingdom

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Horizon Geotechnical Company	Route Engineering and Geotechnical Interpretation	Pipeline route engineering and geotechnical interpretation for two pipelines between QESHM Island and the Bandar Abbas Refinery.	2007-2008	Iran
Boreas Consultant	Large Deformation Pipeline FE Analysis	Numerical analyses performed in FLAC to develop failure envelopes and incremental displacements for pipe-soil interaction during large lateral movements, accounting for the effect of suction release when breaking away from the berm for the first time, and for the changing geometry as large deformation occurs.	2007-2012	United Kingdom
Norwegian Geotechnical Institute	SCR-Seabed Interaction Analysis Review	Third-party review of the proposed methodology for SCR-seabed interaction for an extreme load analysis.	2006	Nigeria
Boreas Consultant	Trenching and Backfilling Assessment	Review of geotechnical and geophysical data for the Gannet Flowline Route with assessment of trenching and backfilling. The assessment also included an assessment of expected backfill properties and design parameters for the preliminary upheaval buckling analysis.	2006	United Kingdom
CTC Marine Projects	Trenching Engineering	More than 100 projects and 70 different sites related to trenching and burial performance assessment for cable ploughs, pipeline ploughs, jet trenching system of different sizes and rock trenching. Performance models for AMP500 and VMP pipeline ploughs, backfill plough, cable plough (RP1, MD3), ISU umbilical plough, rock plough, RT1, UT1, CT1, CT2 jet trenchers. Tools developed for rapid burial assessment and post-burial analysis and presentation of performance data, out-of-straightness. Major R&D performed to develop jet trenching models in sand and plough performance models. Multiple technical publications jointly with CTC staff. Training courses delivered to CTC project managers.	2005-2010	United Kingdom
Boreas Consultant (Shell)	Pipeline Engineering and Installation Strategy Analysis	Pipeline engineering study to define the optimum strategy for a Starling-Shear-water tie-back; on-bottom or trench and backfill. Soils data and previous test programmes were reviewed to determine the likely backfill characteristics, upheaval buckling and pipeline restraint offered. Additional methodologies were developed to modify the assessment to include additional rock backfill.	2005	United Kingdom



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