

Eric Isaac, PMP

(Subsea Metrics: 2020-Present)

Equinor Bacalhau Project; Offshore Brazil; *mv Island Performer*, Subsea 7; July – August 2024

Responsible as party chief for LBL array installation, structure installation, jumper metrology, and as-built survey in 2000m water depth aboard a 130m offshore construction vessel. Lead four-member survey team during mobilization, calibrations, structure installations, metrologies and charting to ensure compliance with project contracts and specifications. Produce reports and daily logs. Responsible for project management by liaising directly with offshore and onshore management. Represent survey team at relevant planning and safety meetings. Operate the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion 2, Visual Soft, Compatt 6G+, Varipos Quantum MRU/GNSS, Compatt ROVNAV, SPRINT-Nav INS/Doppler, iXBlue Rovins INS, Valeport Midas CTD, Valeport Mini IPS, Valeport bathy, Edgetech 2025 Sides Scan Sonar, R2Sonic 2024 multibeam sonar, Innova Mux/Topside, MOXA network switch. Mobilized the construction acoustic spread. Performed party chief duties that include directing vessel and ROV and maintaining logs.

LLOG & TecnipFMC; Buckskin Project; Gulf of Mexico; *mpsv Harvey Sub-Sea*, UTEC; May – June 2024

Responsible as senior surveyor for a 12-beacon LBL array installation/calibration and pipeline pre-lay survey in 2000 m water depth aboard a 104 m multi-purpose support vessel. Performed mobilization, calibrations, data acquisition, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion 2, Compatt 6G, Compatt ROVNAV, Valeport Midas CTD, Valeport Mini IPS, Valeport bathy, iXBlue ROVINS gyro/MRU, Vaisala Barometer, Innova Mux/Topside, MOXA network switch. Mobilized the Sonardyne 6G system and acoustic spread. Performed online surveyor duties that included directing ROV and maintaining logs. Demobilized LBL spread.

Ørsted Hornsea Project Three; UXO Inspection and Disposal; Offshore UK; N-Sea; *m/v 4 Winds*; May 2024

Responsible for executing project as offshore manager / party chief; in close liaison with vessel master, client representative and office-based managers. Responsible for ensuring adherence to procedures and safe working practices during survey, inspection and dredging. Supervised the ROV and UXO identification operations and acted as liaison between departments. Reported to the onshore project manager. Oversaw a 39-member marine survey, UXO and ROV crew aboard a 60 m subsea support vessel in 8.5 to 40 m.w.d. offshore England. Ensured data quality and procedures followed were in accordance with contract specifications and company policy. Performed project management on a daily basis and delivered reports at various stages of operations. Equipment included Fugro MarineStar GNSS with G4 + PPP corrections, C-Nav GNSS with SF2 + PPP corrections, iXBlue Hydrins IMU & Heading and Kongsberg MRU5 MRU, AML 3 LGR and Valeport Swift CTD, HiPAP501 USBL, Valeport BFM106 Current Meter, Kongsberg cNode min and Maxi transponders, Innova Matrix MKII Multiplexer + Bottle, TriTech SeaKing 704-7 Depth and Altitude Sensor, iXBlue ROVINS INS, Nortek 1000 Doppler Velocity Log, Tritech Gemini 720iS Obstacle Avoidance Sonar, ARIS Acoustic Camera, Teledyne TSS440 Pipe Tracker, Piranha 6" Dredge Pump, Norbit WBMS Multibeam Echosounder, IME T6 Angel Sark Subsea laser.; Software utilized by team included MOffice, Qinsy Nav and Qimera Data Processing Software, APOS USBL tracking, Digital Edge Subsea Camera and Sonar recording and QGIS GIS.

Ørsted Hornsea Project Three; UXO Inspection and Disposal; Offshore UK; N-Sea; *m/v Braveheart Spirit*; April 2024

Responsible as night shift supervisor/report coordinator for coordinating all offshore reporting. Responsible for ensuring adherence to correct procedures and safe working practices during survey operations. Supervised the online operations of the project and acted as a liaison between departments. Reported to the offshore manager. Oversaw an 11-member survey, UXO and ROV crew aboard a 70 m offshore supply vessel in 10 to 40 m.w.d. offshore England. Ensured data quality and procedures followed were in accordance with contract specifications and company policy. Delivered field reports at various stages of operations. Equipment included Starpack Omnistar XP2/G4 and Septentrion AsteRx U3 GNSS, iXBlue Hydrins and Kongsberg Seatex MRU, AML 3 LGR and Valeport Swift CTD, HiPAP 501 USBL, Valeport BFM308 and BFM106 Current Meters, Kongsberg cNode min and Maxi transponders, TriTech SeaKing 704-7 Depth and Altitude Sensor, iXBlue ROVINS INS, Nortek 1000 Doppler Velocity Log, Tritech Gemini 720iS Obstacle Avoidance Sonar, ARIS Acoustic Camera, Teledyne HydroPACT440 Electromagnetic system 6" Vortex Dredge Pump, Norbit WBMS Multibeam Echosounder, IME T6 Angel Sark Subsea laser.; Software utilized by team included MS Office, Qinsy Nav and Qimera Data Processing Software, APOS USBL tracking, Digital Edge Subsea Camera and Sonar recording and QGIS GIS.

Equinor Wind U.S., Beacon Wind; Massachusetts, USA; *o/s/v Berto L Miller and m/v Joseph E Pearce*; December 2023 – March 2024.

Responsible charge as client vessel representative tasked with technical oversight of decommissioning campaign for five oceanographic meteorological moorings. Ensured conformance to project specifications. Promoted HSEQ throughout project. Communicated with Equinor operational units as required. Conducted daily inspections of the work site. Monitored HSEQ goals and objectives. Ensured personnel received appropriate inductions. Conducted daily monitoring of performance of contractor personnel. Performed planning and project management daily. Investigated all hazards, accidents/incidents and near misses and reported to the Equinor Onshore Management. Ensured implementation of stop work authority when unsafe acts were observed. Followed-up with contractor compliance to project execution plan and HSE bridging document. Ensured contractor compliance with deployment/recovery scope of work. Performed debrief with project management onshore at project close out that included contractor performance appraisal, lessons learned and recommendations.

Chevron; Anchor, Ballymore & Neptune Projects; Gulf of Mexico; *o/s/v Brandon Bordelon*; October - November 2023.

Responsible charge as client survey representative tasked with technical oversight of drilling demarcation for four proposed well sites with alternate locations and 16 ROV sonar contact investigations. Promoted HSEQ throughout project. Communicated with Chevron operational units as required. Conducted daily inspections of the work site. Monitored HSEQ goals and objectives. Responsible charge as survey representative for LBL acoustic array deployment/calibration & buoy placement at proposed drilling locations in water depths between 1500 - 2000 m. Conducted oversight during ROV investigations of sonar contacts to better identify objects to be recovered in the future. Acted as sole client representative on a 78 m offshore supply vessel operating with one work-class ROV and a 60-ton crane. Survey equipment included Paroscientific Digiquartz depth sensor, mini SVX sound velocity probe, Seabird CTD, Compatt/RovNav 6G LBL and MS Office software. Field operations included LBL mobilization, LBL array deployment/calibration, and seabed buoy installation using LBL tracking for location at well sites. Responsible for positioning and video archive oversight and QC of project systems. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Ørsted Offshore Wind Power North America LLC; Southfork Monopile Installations; Offshore USA; Boskalis; HLCV Bokalift 2; August 2023.

Responsible charge as senior surveyor for technical oversight of surface positioning, crane management, conventional land survey and calibration operations during 90-meter monopile installations in 40-meter water depth with a 4000-ton crane. Surface positioning spread included AsteRX-U Marine Septentrio GNSS RTK & PPP Positioning, Heading, Pitch and Roll, Fugro Marine Star Corrections, Trimble SPS855 CenterPoint RTX GNSS, Trimble SPS930 Tracking Total Station, Octans Surface Gyrocompass and Motion Sensor, Velodyne LiDAR Puck Sensor, Dredgeview Tug Management System (TMS) and Crane Monitoring System (CMS) Unix Software. Positioning provided during pile transfer from transport vessel to upending hinge. Calibration conducted of heading misalignment between pile north and flange lifting tool (FLT). Final pile position determined by coordination between vessel DP and motion compensated pile gripper frame (MCPGF). Inside MCPGF the Pliant scanner provided monopile verticality. Heading determined from the calibrated FLT. Generated field reports and project communication. Ensured standards were met for QA/QC and HSE and that the procedures followed were in accordance with contract specifications.

Copenhagen Infrastructure Partners/Changfang Wind Power Generation Co; Changfang Wind Turbine Jacket Installations; Offshore Taiwan; Boskalis; HLCV Bokalift 1; June–July 2023.

Responsible charge as survey party chief for surface and subsurface positioning, crane management, conventional land survey and dimensional control operations during 1200-ton jacket installations in 40-meter water depth with a 3000-ton crane. Surface positioning spread included Trimble SPS855 CenterPoint RTX GNSS, Trimble SPS552H RTK GNSS Heading, Trimble SpS852 Rover, Kongsberg HiPAP 502 and cNode mini USBL, Valeport miniSVS, Saiv SD204 CTD, Easy Laser Flange Measuring Laser, Sokia Digital Level, COAS CCTV, Dredgeview Dive Support Vessel (DSV) and Crane Monitoring System (CMS) Unix Software. Observation class ROVs deployed from the vessel configured for installation support operations included cNode USBL, altimeter, strain-gauge depth transducer, Simrad Sonar, Compass and Video overlay positioned with APOS navigation software. Acoustic Doppler current profiler installed on vessel and operated for real-time current data. Conventional land survey instruments used to control jacket level. Flange flatness measured with flange specific laser. Generated field reports and project communication. Ensured standards were met for QA/QC and HSE and that the procedures followed were in accordance with contract specifications.

Equinor ASA, Norwegian Continental Shelf MetOcean Campaign; Norway; MS Elisabeth; April-May 2023

Responsible charge as client vessel representative tasked with technical oversight of installation and servicing campaign for fifteen oceanographic, meteorological and wildlife moorings. Ensured conformance to project specifications. Promoted HSEQ throughout project. Communicated with Equinor operational units as required. Conducted daily inspections of the work site. Monitored HSEQ goals and objectives. Ensured personnel received appropriate inductions. Conducted daily monitoring of performance of contractor personnel. Performed planning and project management daily. Investigated all hazards, accidents/incidents and near misses and reported to the Equinor Onshore Management. Ensured implementation of stop work authority when unsafe acts were observed. Followed-up with contractor compliance to project execution plan and HSE bridging document. Ensured contractor compliance with deployment/recovery scope of work. Performed debrief with project management onshore at project close out that included contractor performance appraisal and lessons learned.

Equinor ASA, Gullfaks/Gina Krog Debris Clearance; Oseberg Pipeline IMR; Offshore Norway; i/m/r/v Havila Subsea; December 2022

Responsible charge as client vessel representative tasked with technical oversight of debris clearance and pipeline IMR survey operations in 90-100 m.w.d. offshore Norway aboard an 8552 GRT, 98 m IMR vessel. Supervised survey contractor calibrations, geophysical surveys, debris clearance, pipeline inspection and reporting to ensure compliance with project contracts and specifications. Produced permits, management plans, reports and daily logs. Responsible for project communication by liaising directly with offshore management including vessel master, offshore manager and survey party chief. Communicated with Equinor operational units as required. Performed planning and project management daily. Investigated all hazards, accidents/incidents and near misses. Represented Equinor at relevant planning and safety meetings. Equipment included Kongsberg DPS 232 GNSS, Kongsberg Seapath 300 & MRU 5 Attitude Sensors, Valeport mini-CT CTD, HiPAP 502 USBL, CNode Transponders, IxBlue PHINS, ROVINS, Octans ROV Heading & Attitude, R2Sonic 2024 MBES, Nortek DVL1000 Doppler, Valeport IPS Depth Sensor, Tritech PA500 Altimeter, Edgetech DW106 SBP 300/600 SSS. Software included MS Office, QINSy Navigation, EIVA NaviSuite Data Processing Software, SonarWiz SSS Processing, Kongsberg APOS USBL, HIS Kingdom SBP software, AutoCAD and Global Mapper GIS

Equinor Wind U.S., Beacon Wind; Massachusetts, USA; osv Josephine K Miller; November 2022

Responsible charge as client vessel representative tasked with technical oversight of servicing campaign for five oceanographic meteorological moorings. Ensured conformance to project specifications. Promoted HSEQ throughout project. Communicated with Equinor operational units as required. Conducted daily inspections of the work site. Monitored HSEQ goals and objectives. Ensured personnel received appropriate inductions. Conducted daily monitoring of performance of contractor personnel. Performed planning and project management daily. Investigated all hazards, accidents/incidents and near misses and reported to the Equinor Onshore Management. Ensured implementation of stop work authority when unsafe acts were observed. Followed-up with contractor compliance to project execution plan and HSE bridging document. Ensured contractor compliance with deployment/recovery scope of work. Performed debrief with project management onshore at project close out that included contractor performance appraisal and lessons learned.

Xlinks; Morocco-UK Power Project; Onshore Zwevegem, Belgium and remote; GEOxyz; Sept – Oct 2022

Responsible charge as project surveyor overseeing management and planning of geophysical, geotechnical, environmental and ROV crossing inspection surveys for a 3800 km HVDC interconnector cable route between Morocco and UK. Developed Excel spreadsheets to estimate vessel times and efficiencies based on weather statistics along the route. Prepared project schedules using MS

Projects. Updated timings and plannings based on differing scenarios related to permit availability and differing project conflicts. Designed line and vessel plans to fulfill contract requirements most economically. Participated in conference calls and project workshops together with teams internally from management, survey, engineering, geophysics, GIS, data management, HR and commercial departments. Coordinated with suppliers. Met with client during routine project meetings.

Chevron; Tamar Southwest Project; Israel; m/v Nor Naomi; Interocean; August 2022

Responsible charge as party chief overseeing a 5-member survey team for four jumper metrologies in 1675 m water depth aboard a 86 m multipurpose offshore vessel. Performed project management that included planning, mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, EIVA, APOS, Compatt 6G, Compatt ROVNAV, Valeport CTD, Valeport mini IPS, Valeport Minis SVX, Octans gyro/MRU. Mobilized the Sonardyne 6G system, metrology tools and sensors. Executed data acquisition and post processing in Fusion software. Calculated jumper metrology results. Prepared final report complete with data sheets in ACAD for presentation to client. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures. Demobilized metrology spread, conducted project close out including lessons learned and thorough project debrief.

Infratel Italia; Minor Islands Submarine Cable System Design Geophysical and Geotechnical Survey Campaign; Offshore Italy; GeoTeam; osv Urbano Monti; July 2022

Carried out side scan sonar, sub-bottom profiler, multibeam, gradiometer, CPT, gravity core and grab sample surveys along 300 km of proposed cable corridors. Responsible charge of technical oversight and overseeing the operations and an 11-member survey crew aboard a 60 m offshore supply vessel in 15 to 1300 m.w.d. offshore Italy. Ensured data quality and procedures followed were in accordance with contract specifications and company policy. Delivered field reports at various stages of operations. Equipment included Kongsberg Seapath 330 and C&C C-Nav 3050 GNSS, Octans Attitude Sensor, Valeport Midas CTD, HiPAP 501 USBL, Teledyne T150-P and Seabat 7150 MBES, Edgetech 2000 SSS/SBP, Geometrics G-882 Gradiometer, Neptune 3000 CPT, custom built gravity core, and Van Veen grab sample; Software utilized by team included MS Office, QINSy Nav and Qimera Data Processing Software, SonarWiz SSS and SBP, Oasis Montaj Gradiometer Processing, AutoCAD, APOS USBL tracking, Global Mapper GIS.

Equinor Wind U.S., Beacon Wind; Massachusetts, USA; osv Josephine K Miller; June 2022

Responsible charge as client vessel representative tasked with technical oversight of servicing campaign for five oceanographic meteorological moorings. Ensured conformance to project specifications. Promoted HSEQ throughout project. Communicated with Equinor operational units as required. Conducted daily inspections of the work site. Monitored HSEQ goals and objectives. Ensured personnel received appropriate inductions. Conducted daily monitoring of performance of contractor personnel. Performed planning and project management daily. Investigated all hazards, accidents/incidents and near misses and reported to the Equinor Onshore Management. Ensured implementation of stop work authority when unsafe acts were observed. Followed-up with contractor compliance to project execution plan and HSE bridging document. Ensured contractor compliance with deployment/recovery scope of work. Performed debrief with project management onshore at project close out that included contractor performance appraisal and lessons learned.

Harbour Energy PLC, Southern North Sea Debris Clearance Campaign; England, UK; Gardline; r/v Ocean Resolution; April 2022

Responsible charge as party chief overseeing a 13-member survey team during a geophysical debris clearance UXO survey in 20-50 m.w.d. offshore UK aboard a 79 m research vessel. Completed

offshore and alongside calibrations that included GNSS Position Verification; Gyro & USBL calibrations; Side Scan Sonar and Magnetometer verifications, multibeam patch test and Sub bottom profiler dynamic range test. Carried out surface-acquired sub-bottom profiler, multibeam, magnetometer, side-scan, MMO and passive acoustic monitoring surveys within five proposed 500m x 500m mobile offshore drilling sites. Responsible for supervision and coordination of geologists, environmentalists, data processors, online surveyors and survey engineers. Performed analysis and QC prior to presentation of results to the client. Ensured operations were according to QHSE standard. Maintained communications with client rep, marine crew onboard and management onshore. Delivered field reports at various stages of operations. Equipment included Hemisphere VS1000 & CNAV 3050 GNSS, Kongsberg Seapath 380 & MRU 5 Attitude Sensors, Valeport Midas SVP, HiPAP 502 USBL, Kongsberg EM 2040C MBES, 16-Element GeoPulse 5430A Pinger SBP, Geometrics G882 Transverse Gradiometer, EdgeTech 4200 100/400 kHz Side-scan sonar; Software included MS Office, MS Projects, Voyager Navigation, GeoFusion and Caris HIPS/SIPS Data Processing Software, Oasis Montaj Gradiometer Processing, Kongsberg APOS USBL, HIS Kingdom SBP software, AutoCAD and Global Mapper GIS

**US Navy Facilities Engineering Command, Propulsion
Welding Shop Fragment Analysis; Naval Air Weapons Station
China Lake, China Lake, California, Construction Quality
Control Manager (CQCM), California, USA; Jan-Feb 2022**

Responsible charge as Construction Quality Control Manger for a \$1.5 m design build, building improvement and repair project for a NAVFAC facility in California. Managed QC organization: Acted on behalf of contractor on all Quality Control matters; Identified, scheduled and performed the three phases of control on all Definable Features of Work (DFOW) as referenced in the construction schedule; Coordinated factory tests/inspections and scheduled onsite; ensured no construction began before the Designer of Record (DOR) had finalized the design for that segment of work and construction submittals were approved as required; ensured the design and construction submittals were reviewed and approved prior to allowing material on site and work to proceed; maintained a submittal register; ensured contract activities were performed according to the contract plans and specifications; created agenda and schedule, lead and reported on the weekly Quality Control meetings and special quality coordination meetings; prepared acceptable documentation for all QC activities; recorded the events of each workday in the QC report; communicated/collaborated with project team; submitted deliverables; met deadlines/milestones.

**Equinor Wind U.S., Beacon Wind; Massachusetts, USA; osv
Berto L Miller; Nov 2021**

Responsible charge as Equinor vessel representative overseeing a 12-member oceanographic and marine team aboard a 50 m supply ship during installation of five oceanographic/meteorological moorings (one Floating LiDAR, two Wave/Met buoys and two Current Moorings) within the Massachusetts Beacon Wind lease area in 40-60 m.w.d offshore USA. Promoted HSEQ throughout project. Communicated with Equinor operational units as required. Conducted daily inspections of the work site. Monitored HSE goals and objectives. Ensured personnel received appropriate inductions. Conducted daily monitoring of performance of contractor personnel. Performed planning and project management daily. Investigated all hazards, accidents/incidents and near misses and reported to the Equinor Onshore Management. Ensured implementation of stop work authority when unsafe acts were observed. Followed-up with contractor compliance to project execution plan and HSE bridging document. Ensured contractor compliance with deployment/recovery scope of work. Performed debrief with project management onshore at project close out that included contractor performance appraisal and lessons learned.

**Ørsted Wind Power North America, Skipjack 2 Windfarm;
Delaware, USA; Gardline; r/v Ocean Endeavour; Sep-Oct 2021**

Responsible charge as party chief overseeing a 22-member survey team during a geophysical/UXO survey in 15-40 m.w.d. offshore USA aboard a 72 m research vessel. Completed offshore and

alongside calibrations that included GNSS Position Verification; Gyro & USBL calibrations; Side Scan Sonar and Transverse gradiometer verifications, multibeam patch test, Sub bottom profiler dynamic range test, ping rate test and noise removal and multi-channel ultra-high resolution seismic source, streamer noise and positioning system tests; Carried out surface-acquired and towed, sparker, sub-bottom profiler, multibeam, gradiometer and side-scan surveys within a proposed 500m x 210m wind turbine development site. Responsible for supervision and coordination of geologists, environmentalists, data processors, online surveyors, and survey engineers. Performed analysis and QC prior to presentation of results to the client. Ensured operations were according to QHSE standard. Maintained communications with client rep, marine crew onboard and management onshore. Delivered field reports at various stages of operations. Equipment included Hemisphere VS1000 & CNAV 3050 GNSS, Kongsberg Seapath 380 & MRU 5 Attitude Sensors, AML MVP SVP, Sonardyne Ranger 2 USBL, Kongsberg EM 2040D MBES, Innomar SES-2000 Medium-100 SBP, AAE Dura Spark 200 tip 1 channel, 8 element S-UHRS, Geometrics G882 Transverse Gradiometer, EdgeTech 4205 230/540/850 kHz Side-scan sonar; Software included MS Office, MS Projects, Voyager Navigation, GeoFusion and Caris HIPS/SIPS Data Processing Software, Oasis Montaj Gradiometer Processing, Sonardyne Cassius USBL, RadExPro SBP software, AutoCAD, APOS USBL acoustic positioning, and Global Mapper GIS.

US Navy Facilities Engineering Command, Building 16 Gym Improvements; Naval Weapons Station Seal Beach, Seal Beach, Pre-Construction Manager, California, USA; August 2021

Responsible charge as Pre-Construction & HSEQ Manger. Prepared Quality Control Plan and Accident Prevention Plan in preparation of a \$1m design build, building renovation project for a NAVFAC facility in California. Communicated/collaborated with project team; submitted deliverables; met deadlines/milestones. Evaluated government request for proposal and construction site to develop methodology, scope of work, resource planning, task plans, checklists, and procedures to meet contract requirements. Developed detailed QC and Safety Plans to satisfy NAVFAC standards.

US Marine Corps, Lighterage Wharf Lift Launch and Pier Project; Topographic, Utility and Hydrographic Surveys, Olin Hydrographic Solutions; Blount Island Marine Base, Jacksonville, Florida, USA; March 2021

Established RTK survey control points. Designed flight plan and operated drone for coverage of project area. Calculated topography utilizing Pix 4D mapping software and aerial photographs. In addition, located and mapped existing above ground utilities with Trimble RTK. Designed, executed, and processed bathymetric mapping within the project area using Trimble RTK GPS and SonarMite echosounder. Compiled existing records of underground utilities with photogrammetrically found features, bathymetry and topography to create a base map utilizing AutoCAD Civil3D for purposes of engineering design.

Lennar Homes, Keys Gate II Lake Surveys Project; Hydrographic Surveys, Olin Hydrographic Solutions; Miami, Florida, USA; February 2021

Established RTK survey control points. Designed, performed and calculated hydrographic bathymetric mapping within the project area using Trimble RTK GPS and SonarMite echosounder. Processed bathymetric data and generated bathymetric contour maps of golf course lakes; calculated areas and lake fill volumes for purposes of engineering design of future subdivisions.

PROJECT EXPERIENCE (Ballard Marine: 2019 – 2020)

Great Lakes Water Authority, Design-Build/Repair for Portions of the Pennsylvania, Springwells and Northeast Raw Water Tunnels, Detroit, Michigan, USA; September – December 2020.

Responsible charge as QC manager responsible for implementation and management of the QC Program for an \$80 million design-build project, overseeing a team of three QC engineers, consultants, suppliers, testing labs, vendors and sub-contractors. Responsible for attending the partnering meetings, QC Plan Meetings, Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control except for those phases of control designated to be performed by QC Specialists, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required by the contract. Inspect the work performed daily for compliance with current plans and specifications. Responsible to inspect and certify that all materials and equipment delivered to the job site meet required specifications. Ensure that all test and/or inspections required or necessary are performed and report the results in the Contractor Quality Control (QC) Report. File certified daily reports on the required forms. These reports cover all work and tests performed, inspections completed, all material and equipment received at the job site on that day, all corrective action items identified and completed that day.

Enbridge Energy, Straits of Mackinac Line 5 Inspection, Maintenance and Repair Project, Mackinaw City, Michigan, USA; May 2020 – August 2020.

Responsible charge as hydrographic operations manager overseeing a 20-30-member survey, ROV, AUV, diving, engineering and construction team during a \$5 million, 2 x 6 km pipeline inspection, maintenance and repair operation in 10-70 m.w.d. in the Great Lakes, USA. Completed dive, ROV and AUV inspections/ mapping, free-span stabilization and coating repair from a 7m survey boat and spud-barge platform towed by tug boat. Executed GNSS Position Verification; Gyro & USBL calibrations; Side Scan Sonar verification, multibeam patch test, Sub bottom profiler dynamic range test, ping rate test and noise removal. Responsible for supervision and coordination of ROV pilots, surveyors, AUV operators and survey engineers. Ensured operations were according to QHSE standard. Maintained communications with client rep, marine/dive/construction crew and stakeholder onshore. Delivered reports at various stages of operations. Equipment included Trimble SPS461 RTK Heading & Positioning, Coda Octopus F175 Pitch & Roll, CSI Vector GPS Heading, Pitch and Roll, Link Quest TrackLink 1500 USBL, Teledyne Odom Digibar Pro Velocity Probe, Valeport 106 Current Meter, VideoRay Pro 4 ROV, Teledyne Seabotix vLBV 950 ROV, Kongsberg Hugin AUV, Kongsberg NavP aided inertial navigation system (AINS) with Honeywell HG9900 IMU, cNODE acoustic positioning telemetry link, RDI Workhorse 300kHz DVL, Paroscientific Digiquartz depth/pressure transducer, EdgeTech 2205 dual frequency SSS, Kongsberg EM2040 MBES, SAIV SD208 CTD sound velocity probe, Neo Digital Underwater Camera, CathX Ultra High-Resolution Camera, AutoCAD and Digital Edge DVR.

Web Water Development Association, Intake Structure Survey & Inspection, Mobridge, South Dakota, USA; June 2020.

Responsible charge as hydrographic operations manager & surveyor overseeing a 2-member survey/ROV and 4-member dive inspection crew in 3-25 m.w.d. Completed dive/ROV inspections and multibeam sonar mapping for a 450m raw water intake pipe from a lakebed intake crib to a water plant on shore using a 7m survey boat in Lake Oahe, South Dakota. Executed GNSS Position Verification; a gyro calibration and a multibeam patch test. Prior to survey, performed dimensional control of survey vessel and sensors with Topcon GTS-213 Total Station. Ensured operations were according to QHSE standard. Maintained communications with client representatives, dive crew and stakeholders inside and outside the organization. Prepared and delivered charts and a final report presenting the results. Equipment included Kongsberg M3 multibeam sonar, Trimble SPS461 RTK Heading & Positioning, Coda Octopus F175 Pitch & Roll, TSS DMS 12 motion sensor, Digibar Pro Velocity Probe, Teledyne Seabotix vLBV 950 ROV & AutoCAD.

Port City Tug, Kinnikinic River Dock Wall Inspection, Milwaukee, Wisconsin, USA; April 2020.

Responsible charge as hydrographic operations manager & ROV operator of a 2-member ROV crew in 3m w.d. at the Kinnikinic River dock in Milwaukee, Wisconsin. Completed ROV video inspections of the dock wall to identify and distinguish new damage vs. old damage after a collision by a tug caused damage. Ensured operations were according to QHSE standard. Maintained communications with client representatives and stakeholders inside and outside the organization. Prepared and delivered images, drawings and a final report presenting the results. Equipment included Video Ray Pro 4 ROV & AutoCAD.

Courtesy Electric, Jardine Cable Lay, Chicago, Illinois, USA; December 2019 - February 2020.

Responsible charge as hydrographic operations manager overseeing a 20-member survey, diving, engineering, construction and marine team during a \$2 million, 3.2 km submarine electrical cable installation in 3-10 m.w.d. in Chicago Harbor, USA. Executed GNSS Position Verification and gyro calibration of the work platform spud barge and telemetered heading and position of a tug. Maintained communications with client representatives, dive crew and stakeholders inside and outside the organization. Prepared and delivered charts and a final report presenting the results. Equipment included Trimble SPS461 RTK Heading & Positioning, Coda Octopus F175 Pitch & Roll, CSI Vector GPS Heading, Pitch and Roll.

PROJECT EXPERIENCE (SUBSEA METRICS: 2001-2019)

Shell New Energies US, Atlantic Shores Offshore Wind; New Jersey, USA; TerraSond; r/v Geosea; October 2019

Responsible charge as party chief overseeing a 22-member survey team during a geophysical survey in 17-40 m.w.d. offshore USA. Completed offshore and alongside calibrations that included GNSS Position Verification; Gyro & USBL calibrations; Side Scan Sonar and Transverse gradiometer verifications, multibeam patch test, Sub bottom profiler dynamic range test, ping rate test and noise removal and multi-channel ultra-high resolution seismic source, streamer noise and positioning system tests. Carried out surface-acquired and towed, sparker, sub-bottom profiler, multibeam, gradiometer and side-scan surveys within a proposed 500m x 210m wind turbine development site. Responsible for supervision and coordination of geologists, data processors, online surveyors, GIS technicians and survey engineers. Performed analysis and QC prior to presentation of results to the client. Ensured operations were according to QHSE standard. Maintained communications with client rep, marine crew onboard and management onshore. Delivered field reports at various stages of operations. Equipment included Applanix POSMV OceanMaster & CNAV 3050 GNSS, Applanix POSMV OceanMaster Attitude Sensor, Valeport SWiFT & AML Micro X SVP, Sonardyne Ranger 3 USBL, Teledyne T50 Dual Head MBES, Innomar SES-2000 Medium Parametric SBP, Geometrics G882 Transverse Gradiometer, Geomarine Sparker, EdgeTech 4200 300/600 kHz Side-scan sonar; Software included MS Office, MS Projects, QINSy Nav and Qimera 2.0.1 Data Processing Software, Oasis Montaj Gradiometer Processing, Sonardyne CASIUS, RadExPro SBP software, AutoCAD, APOS USBL acoustic positioning, and Global Mapper GIS

Shell Renewables, Mayflower Wind; Geophysical Site Investigation Survey; Offshore Massachusetts, USA; TerraSond; r/v Geosea; August-September 2019

Responsible charge as party chief overseeing a 22-member survey team during a geophysical survey in 15-60 m.w.d. offshore USA. Completed offshore and alongside calibrations that included GNSS Position Verification; Gyro & USBL calibrations; Side Scan Sonar and Transverse gradiometer verifications, multibeam patch test, Sub bottom profiler dynamic range test, ping rate test and noise removal and multi-channel ultra-high resolution seismic source, streamer noise and positioning system tests. Carried out surface-acquired and towed, sparker, sub-bottom profiler, multibeam, gradiometer and side-scan surveys within a proposed wind turbine development site. Responsible for supervision and coordination of geologists, data processors, online surveyors, GIS technicians and survey engineers. Performed analysis and QC prior to presentation of results to the client. Ensured operations were according to QHSE standard. Maintained communications with client rep, marine crew onboard and management onshore. Delivered field reports at various stages of operations. Equipment included Applanix POSMV OceanMaster & CNAV 3050 GNSS, Applanix POSMV OceanMaster Attitude Sensor, Valeport SWiFT & AML Micro X SVP, Sonardyne Ranger 3 USBL, Teledyne T50 Dual Head MBES, Innomar SES-2000 Medium Parametric SBP, Geometrics G882 Transverse Gradiometer, Geomarine Sparker, EdgeTech 4200 300/600 kHz Side-scan sonar; Software included MS Office, MS Projects, QINSy Nav and Qimera 2.0.1 Data Processing Software, Oasis Montaj Gradiometer Processing, Sonardyne CASIUS, RadExPro SBP software, AutoCAD, APOS acoustic positioning and Global Mapper GIS

U.S. Army Corps of Engineers & Orion; Cape Lisburne Seawall Reconstruction; TerraSond; Onshore/Inshore Chukchi Sea, Alaska; June – July 2019

Responsible charge as party chief performing construction and boundary surveys in support of seawall reconstruction from elev +4.5 m to - 4.5 m. Performed hydrographic and topographic surveys to ensure material placement at correct thickness and grade. RTK positioning utilized on land and excavator machine control positioning subsea. MSHA New Miner Safety Training completed for surface mining/quarrying operations. Marked boundaries for quarry and rock placement areas. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures. Equipment included Trimble R10 Base/Rover UHF RTK GNSS, Trimble TSC3 Controller/Handheld computing system, Kubota 4-wheeler, passenger vehicle for remote office and trailered generator. Software included Civil 3D, Trimble Business Center and MS Office.

Nord Stream 2 & Saipem; Nord Stream 2 Gas Pipeline; Offshore Denmark; NEXT; mpsv levoli Ivory; October 2018

Responsible charge as report coordinator overseeing an 11-member survey team during a geophysical survey in 70-100 m.w.d. offshore Denmark. Completed offshore calibrations that included USBL verification and multibeam patch test. Carried out sub-bottom profiler, multibeam, gradiometer and visual surveys along a proposed pipeline corridor. Responsible for supervision and coordination of geologists, data processors, online surveyors, CAD technicians and survey engineers. Performed analysis and QC prior to presentation of results to the client. Ensured operations were according to QHSE standard. Maintained communications with client rep, marine crew onboard and management onshore. Delivered field reports at various stages of operations. Equipment included Kongsberg Seapath 330 and C&C C-Nav 3050 GNSS, Octans 300 Attitude Sensor, ROVINS Inertial, RDI Doppler, Valeport Midas CTD, Trittech SeaKing 704 Bathy, HiPAP 501 USBL, R2Sonic 2024 MBES, Edgetech D2200 SBP, Innovatum Smartsearch 12 Gradiometer, TSS 440 Pipetracker, Software

included MS Office, QINSy Nav and Data Processing Software, Oasis Montaj Gradiometer Processing, AutoCAD, QGIS GIS, APOS USBL positioning, Visual Archive and Visual Edit Eventing.

Scottish Power & James Fisher Marine Services; East Anglia One Offshore Windfarm; Offshore England; Interocean; dsv MTS Terramare; August 2018

Responsible charge as party chief overseeing surface and subsurface positioning during a multi-vessel diver UXO investigation survey in 5-20 m.w.d. offshore UK. Performed offshore and alongside calibrations that included USBL, GNSS, gyrocompass and Hemisphere system. Remote positioning of tug was managed using telemetry and Wi-Fi. Positioning of four-point dsv and aht using tug management system. Divers sweeping with magnetic locator positioned using USBL NaviPac used as navigation software. Responsible for, anchor design, survey QC and issue of survey results and analysis in the form of field reports. Ensured operations were according to QHSE standard. Maintained communications with marine rep onboard and management onshore. Delivered daily reports in writing and field report at various stages of operations. Equipment included Veripos Ultra GNSS, Meridian Gyrocompass, Kongsberg Seatex MRU-5, NaviPac Smart Remotes, AHV Tug Tracking Systems, Valeport Midas SVX-2 CTD, Applied Acoustics Nexus USBL, Applied Acoustics 1019 mini-Transponders. Software included MS Office, AutoCAD and QGIS GIS.

Fairfield Energy; Merlin Central Development; Semi-Submersible Rig Move; Offshore UK; Interocean; ahv Normand Prosper; July 2018

Responsible charge as party chief overseeing surface positioning during a multi-vessel rig move anchor pre-lay in 150 m.w.d. offshore UK in the North Sea. Performed offshore calibrations that included the gyrocompass and Hemisphere system. Remote positioning of tugs was managed using telemetry and Wi-Fi. Anchor final fixes were taken using Veripos and catenary calculation spreadsheets. Surface positioning spread included Veripos LD5 DGPS, Hemisphere VS113 and Meridian SGBrown gyrocompass. NaviPac was used as surface navigation software. Responsible for preparation, QC and issue of survey data results and analysis in the form of field reports. Ensured operations were according to HSE standard. Maintained good communications with marine rep onboard and management onshore. Delivered daily reports in writing and field report on completion of operations.

Marathon & TecnipFMC; Brae Bravo Subsea Gas Bypass Project; Offshore Scotland; dsv Deep Explorer, Andrews; April – May 2018

Responsible charge as acoustic surveyor for three LBL spool piece metrologies in 100 m water depth aboard a 156 m dive support vessel. Performed mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt 6G, Compatt ROVNAV, Valeport Midas CTD, Valeport Mini IPS DigiQuartz bathy, Octans gyro/MRU. Mobilized the Sonardyne 6G system, metrology tools and sensors. Executed data acquisition and post processing in Fusion software. Calculated spool piece metrology results. Prepared field reports complete with data sheets in ACAD for presentation to client. Demobilized metrology spread.

EnQuest & TecnipFMC; Mallard Development Project; Offshore Scotland; pls/v Deep Energy, Andrews; July 2017

Responsible charge as acoustic surveyor for three LBL spool piece metrologies in 90 m water depth aboard a 195 m pipelay vessel. Performed mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt 6G, Compatt ROVNAV, Valeport Midas CTD, Valeport Mini IPS DigiQuartz bathy, Octans gyro/MRU. Mobilized the Sonardyne 6G system,

metrology tools and sensors. Executed data acquisition and post processing in Fusion software. Calculated spool piece metrology results. Prepared field reports complete with data sheets in ACAD for presentation to client. Demobilized metrology spread.

Noble Energy; Tamar Project; Israel Shipyard; Interocean; February 2017

Responsible charge as party chief overseeing a 2-member survey team for dimensional control during jumper fabrication in the Israel Shipyard, Haifa. Performed oversight and liaison with both client and construction contractor while acting as representative of Interocean. Oversaw jumper dimensions were fabricated in accordance with the results from metrology and the engineering design. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Noble Energy; Tamar Project; Israel; m/v Nordic Prince; Interocean; January 2017

Responsible charge as party chief overseeing a 3-member survey team for one jumper metrology in 1675 m water depth aboard a 76 m multipurpose subsea services support vessel. Assisted in writing procedures and task plans. Performed planning, mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt 6G, Compatt ROVNAV, Valeport CTD, Valeport mini IPS, Valeport Minis SVX, Octans gyro/MRU. Mobilized the Sonardyne 6G system, metrology tools and sensors. Executed data acquisition and post processing in Fusion software. Calculated jumper metrology results. Prepared field report complete with data sheets in ACAD for presentation to client. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures. Demobilized metrology spread.

Total Upstream Nigeria; Akpo Development Project; Offshore Nigeria; m/v Bourbon Evolution; Brone; October 2016

Responsible charge as party chief overseeing a 4-member survey team for Brone Positioning & Survey for one jumper metrology in 1300m water depth aboard a 100 m multipurpose subsea services support vessel. Performed planning, mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt 6G, Compatt ROVNAV, SAIV CTD, SeaKing Digiquartz bathy/altimeter, Octans gyro/MRU. Mobilized the Sonardyne 6G system, metrology tools and sensors. Executed data acquisition and post processing in Fusion software. Calculated jumper metrology results. Prepared field report complete with data sheets in ACAD for presentation to client. Demobilized metrology spread.

Noble Energy; Tamar Project; Israel; m/v Nordic Prince; Interocean; September 2016

Responsible charge as senior acoustic surveyor for acoustic array deployment/calibration & buoy placement at a drilling location and several structure locations in water depths roughly 1700 m. Provided survey support for a 76 m construction support vessel operating with one work-class ROV and a 100-ton crane. Equipment included miniIPS Digiquartz depth sensor, mini SVX sound velocity probe, Compatt/RovNav 6G LBL; AutoCAD and Sonardyne Fusion LBL software. Field operations included LBL mobilization, LBL array deployment/calibration, and seabed buoy installation using LBL tracking for location of well and structure sites. Responsible for operation and QC of LBL system. Processed LBL data, generated drawings with AutoCAD and QCd field reports. Ensured standards

were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Shell Nigeria Exploration and Production; Bonga Development Project; Offshore Nigeria; m/v African Vision; UTEC; February 2016

Responsible charge as acoustic surveyor for two LBL jumper metrologies in 1100m water depth aboard an 83 m multipurpose subsea services support vessel. Performed planning, array design, mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt 6G, Compatt ROVNAV, Valeport Midas CTD, Valeport Mini IPS Diquartz bathy, Octans gyro/MRU. Mobilized the Sonardyne 6G system, metrology tools and sensors. Prepared task plan. Executed data acquisition and post processing in Fusion software. Calculated jumper metrology results. Prepared field report complete with data sheets in ACAD for presentation to client. Demobilized metrology spread.

Total Upstream Nigeria; Akpo Development Project; Offshore Nigeria; Brone; January 2016

Responsible charge as project surveyor writing procedures for upcoming work by Brone for Total in the Akpo field. Specific procedures include LBL array installation and calibration, spool-piece metrology, CTD operation and subsea bathymetry operation.

Total Upstream Nigeria; Akpo Development Project; Offshore Nigeria; m/v Bourbon Trieste; Brone; December 2015

Responsible charge as party chief overseeing a 4-member survey team for Brone Positioning & Survey for one jumper metrology in 1300m water depth aboard a 79 m multipurpose subsea services support vessel. Performed planning, array design, mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt 6G, Compatt ROVNAV, SAIV CTD, SeaKing Diquartz bathy/altimeter, Octans gyro/MRU. Mobilized the Sonardyne 6G system, metrology tools and sensors. Prepared task plan. Executed data acquisition and post processing in Fusion software. Calculated jumper metrology results. Prepared field report complete with data sheets in ACAD for presentation to client. Demobilized metrology spread.

Freeport McMoRan; KOQV South; Offshore USA; m/v Grant Candies; Subsea 7; October 2015

Responsible charge as senior acoustic surveyor for acoustic array deployment/calibration & pile/mudmat installations at SPAR location in water depths roughly 1450 m. Provided survey support for an 89m construction support vessel operating with two work-class ROVs, and a 100-ton crane. Equipment included Trittech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, HiPAP 501 USBL, Compatt 6G LBL; AutoCAD, Kongsberg APOS, and Sonardyne Fusion LBL software. Field operations included LBL mobilization, ASV box in, LBL array deployment/calibration, and mattress installation using LBL tracking. Responsible for operation and QC of LBL system. Processed LBL data, generated drawings with AutoCAD and QCd field reports. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Murphy E&P; Dalmatian South Project; Offshore USA; m/v Grant Candies; Subsea 7; October 2015

Responsible charge as senior acoustic surveyor for 3 LBL array deployments/calibrations & pre-lay survey in water depths up to 1900 m. Provided survey support for an 89m construction support vessel operating with two work-class ROVs, and a 100-ton crane. Equipment spread included Trittech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, HiPAP 501 USBL, Compatt 6G LBL; AutoCAD,

Kongsberg APOS, and Sonardyne Fusion LBL software. Field operations included LBL mobilization, ASV box in, LBL array deployment/calibration, and flowline pre-lay survey. Responsible for operation and QC of LBL system. Processed LBL data, generated drawings with AutoCAD and maintained survey logs. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Chevron North America E&P; Tahiti Field; Offshore USA; m/v HOS Bayou; DOF; July 2015

Responsible charge as senior acoustic surveyor for drill string debris removal in water depths roughly 1225 m in the Tahiti field. Provided survey support for a 92m construction support vessel operating with two work-class ROVs, and a 150-ton crane. Equipment spread included Fugro 3D Lidar, Tritech Seaking Sidescan Sonar, Tritech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, Seabird CTD, Valeport mini SVS, HiPAP 500 USBL, Compatt 6G LBL; Sarfix.nav, Sonar Wiz, AutoCAD, Kongsberg APOS, and Sonardyne Fusion LBL software. Field operations included Sidescan Sonar, Lidar & LBL mobilization; Sidescan sonar & Lidar 3d mapping using LBL tracking in preparation for drill string removal. Responsible for operation and QC of LBL system. Processed LBL data, generated drawings with AutoCAD and maintained survey logs. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

BP America; Atlantis/Kepler; Offshore USA; m/v Grant Candies; DOF; June 2015

Responsible charge as senior acoustic surveyor for 2 LBL array deployments/calibrations & buoy placements at drilling locations.in water depths roughly 2125 m for Atlantis and 1450 for Kepler. Provided survey support for an 89m construction support vessel operating with two work-class ROVs, and a 100-ton crane. Equipment spread included Paroscientific Digiquartz depth sensor, Tritech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, Valeport Midas SVP, HiPAP 501 USBL, Compatt 6G LBL; Winfrog, AutoCAD, Kongsberg APOS, and Sonardyne Fusion LBL software. Field operations included LBL mobilization, USBL box in, LBL array deployment/calibration, and seabed buoy installation using LBL tracking for location of well site. Responsible for operation and QC of LBL system. Processed LBL data, generated drawings with AutoCAD and maintained survey logs. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

BP America; Mad Dog Phase II; Offshore USA; m/v Grant Candies; DOF; Feb 2015

Responsible charge as senior acoustic surveyor for acoustic array deployment/calibration & buoy placement at drilling location.in water depths roughly 1250 m. Provided survey support for an 89m construction support vessel operating with two work-class ROVs, and a 100-ton crane. Equipment included Paroscientific Digiquartz depth sensor, Tritech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, Valeport Midas SVP, HiPAP 501 USBL, Compatt 6G LBL; Winfrog, AutoCAD, Kongsberg APOS, and Sonardyne Fusion LBL software. Field operations included LBL mobilization, USBL box in, LBL array deployment/calibration, and seabed buoy installation using LBL tracking for location of well site. Responsible for operation and QC of LBL system. Processed LBL data, generated drawings with AutoCAD and QCd field reports. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Total E&P Angola; Clov Development Project; Offshore Angola; pls/v Seven Borealis, ms/v Seisranger & ms/v Seven Sisters (Simar Esperanca); Total; Nov 2012 – August 2014

Responsible charge as senior client survey representative on behalf of Total for pre-lay survey, structure installation, spool piece metrology, touchdown monitoring, array installation and as-built survey in water depths between 1050 m – 1400 m aboard three construction vessels. Supervise survey contractor mobilizations, calibrations, geophysical surveys, structure installations, metrologies and

charting to ensure compliance with project contracts and specifications. Produce reports and daily logs. Responsible for project communication by liaising directly with offshore management including vessel master, offshore manager and survey party chief; onshore management liaising includes contractor's project surveyor and Total's management. Represent owner at relevant planning and safety meetings.

Total Upstream Nigeria; USAN FPSO Mooring Phase 3; Offshore Nigeria; Total; c/v S3000; May to June & July, 2013.

Responsible charge as senior client survey representative on behalf of Total during FPSO mooring positioning, FPSO mooring as built survey and FPSO final fix, aboard a crane vessel and an FPSO. Supervise survey contractor during FPSO survey mobilization, final fix methodologies on FPSO, crane vessel positioning during FPSO mooring connection and as built methodologies of FPSO mooring, to ensure compliance with project specifications and contract documents. Produce reports and daily logs. Responsible for project communication by liaising directly with offshore management including Total project manager and RSES, vessel master, offshore manager and survey party chief. Represent owner at relevant planning and safety meetings

Murphy/Technip; Interim Crude Evacuation System Tieback; Gumusut Kakap Project; Offshore Malaysia; Fugro, csv Southern Ocean; August, 2012.

Responsible charge as party chief overseeing 5-member survey crew for structure installation, umbilical installation and as-laid survey in water depths between 1200-1400 m. In charge of survey operations for a 137m construction support vessel operating with two FCV3000 150hp work-class ROVs, a 110-ton crane and a 250-ton crane. Equipment included Trittech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, RDI Workhorse Doppler velocity log, Valeport Midas SVP, AutoCAD charting suite, Starfix HP DGPS, Meridian Gyrocompass, HiPAP 500 USBL, Compatt MK5 LBL; Starfix.seis, Starfix.Acoustics and Kongsberg APOS software. Field operations included alongside and offshore gyro, GPS, USBL, Doppler and LBL calibrations, LBL tracking for structure installation, USBL positioning for umbilical installation. QC'd and issued survey data, results and analysis in the form of field reports. Responsible for project communication with Murphy client rep and Technip offshore manager onboard and Fugro management onshore. Subsurface positioning included Paroscientific Digiquartz Bathy, Sonardyne Wideband MK 5 Compatts and ROVNAV Transceiver, HiPAP500 USBL, Octans 3000 Fiber optic gyro and Valeport SVP. Starfix.seis, Starfix.Acoustics, Sonardyne Fusion & AutoCAD were the utilized software. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

CNOOC/Technip; Jumper Metrology & Oil Field Refurbishment; Liu Hua Project; Offshore China; Fugro, csv Southern Ocean; April-July, 2012.

Responsible charge as senior acoustic surveyor then party chief overseeing 5-member survey crew for jumper metrology, structure installation, umbilical installation and as-laid survey in water depths between 265-310 m. Oversaw survey operations of a 137m construction support vessel operating with two FCV3000 150hp work-class ROVs, a 110-ton crane and a 250-ton crane. Equipment included Trittech bathy, PSA 900 altimeter, Reson OAS, Octans 3000 FOG, RDI Workhorse Doppler velocity log, Valeport Midas SVP, AutoCAD charting suite, Starfix HP DGPS, Meridian Gyrocompass, HiPAP 500 USBL, Compatt MK5 and 6G LBL; Starfix.seis, Starfix.Acoustics, Kongsberg APOS, and Sonardyne Fusion LBL software. Field operations included alongside and offshore gyro, GPS, USBL and LBL calibrations, 14 LBL jumper metrologies, LBL tracking for structure installation, USBL positioning for umbilical installation. QC'd and issued survey data, results and analysis in the form of field reports. Responsible for project communication with CNOOC client rep and Technip offshore manager onboard and Fugro management onshore. Performed LBL acoustic survey system deployment and calibrations offshore; processed acoustic data; analyzed dimensional control and engineering

documents and drawings; performed metrology calculations; processed bathymetry and CTD data; generated results for jumper fabrication. Subsurface positioning included Paroscientific Digiquartz Bathy, Sonardyne Wideband MK 5/6G Compatts and ROVNAV Transceiver, HiPAP500 USBL, Octans 3000 Fiber optic gyro and Valeport SVP. Starfix.seis, Starfix.Acoustics, Sonardyne Fusion & AutoCAD were the utilized software. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Total UK, Laggan & Tormore Gas Fields Development Project; Offshore Shetland Islands; m/v Highland Fortress; Allseas; January & February 2012

Responsible charge as online surveyor for pre-lay survey in 20-140 m.w.d. aboard a 72m support vessel. Mobilized survey for project in Rotterdam and Lerwick harbors. Operated Navipac and NaviScan software online. Ensured Pipetracker, Multibeam, video and positioning data were complete and of good quality during data acquisition. Performed calibrations both alongside and offshore. Kept detailed logs in writing and on computer. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion v1.11.01.2319, EIVA Navipac version 3.5, patch 21, NetMC Video Review software, NaviScan Online v.8.2.86.885; VNC Viewer, Valeport DataLog Express, Kongsberg APOS; Digiquartz Interactive; Compatt MK5, Valeport CTD, Paroscientific Digiquartz bathy, Octans IV gyro/MRU, Reson 7P/7K Multibeam dual head system, TSS 440 Pipetracker, RDI Workhorse 1200 KHz Doppler Velocity Log, Veripos Ultra DGPS, XOPS Quad Channel DVR, Septentrio GPS heading system. During weather downtime: prepared Compatts for upcoming LBL operations; Reprocessed previous problematic LBL array calibration; provided analysis for improvement of upcoming LBL work in challenging sound velocity environment.

CNOOC China Ltd.; YC 13-4 Gas Field Development Project; Offshore China; hlc/v Kan Sheng Kou; China Offshore Fugro Geosolutions; November 2011

Responsible charge as LBL surveyor for one LBL metrology and structure tracking in approximately 90m water depth aboard a 156 m semi-submersible float over cargo ship. Mobilized the Sonardyne 6G system, metrology tools and sensors. Executed data acquisition and post processing in Fusion software. Calculated spool piece metrology results. Prepared data sheets in ACAD and field reports for presentation to client. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion v1.11.07, Compatt 6G, Compatt Dunker, Valeport CTD, SeaKing Digiquartz bathy/altimeter, Orion gyro/MRU. Clients desired to perform metrology and structure installation using deep water techniques in shallow water in preparation for an upcoming project in deep water. Client had no prior deep-water experience and brought me into provide expertise. LBL survey results were compared with diver results. The LBL techniques proved to be a success as a 6 m error in spool piece measurement by the divers was caught by survey. The client reluctantly praised survey. The reluctance was due to the fact that the spool piece metrology took 24 hours using LBL techniques whereas the divers finished the same task in 5 hours.

Bibby Offshore; RWE Breagh A Development Project; Offshore UK; m/v Bibby Topaz; Andrews; October 2011 – November 2011

Responsible charge as LBL metrology surveyor representing Andrews for two spool piece metrologies in 60m water depth aboard a 107 m dive support vessel. Performed planning, array design, mobilization, data acquisition, calibrations, post processing, calculations, QA/QC, data analysis, and reporting. Operated the following software and hardware: AutoCAD, MS Word, MS Excel, Sonardyne Fusion, Compatt MK5, Compatt Dunker, Valeport CTD, SeaKing Digiquartz bathy/altimeter, Octans gyro/MRU. Mobilized the Sonardyne MK5 system, metrology tools and sensors. Prepared task plan. Executed data acquisition and post processing in Fusion software. Calculated spool piece metrology results. Prepared data sheets in ACAD for presentation to client. Demobilized metrology spread.

Total E&P Angola; Pazflor Development Project; Offshore Angola; m/v Acergy Legend; Total; September 2010 – September 2011

Responsible charge as senior client survey representative representing Total for pre-lay survey, spool piece metrology, touchdown monitoring, array installation and as-built survey in water depths between 600 m – 1200 m aboard a 64m construction support vessel. Supervised survey contractor mobilizations, calibrations, geophysical surveys, structure installations, metrologies and charting to ensure compliance with project specifications. Produced reports and daily logs. Responsible for project communication by liaising directly with offshore management including vessel master, offshore manager and senior surveyor; onshore liaising was with contractor's project surveyor and Total's management. Represented owner at required planning and safety meetings. Responsible charge as senior Total E&P offshore survey representative for the entire Pazflor development that included two Technip and one Acergy Pipelay vessels and several additional Acergy support vessels. In charge of reviewing the Contractors reports that were previously reviewed by Total survey representatives from each of those vessels to ensure survey deliverables were in accordance with contract specifications and company requirements.

BP/Technip; Field Development; Macondo Project; Gulf of Mexico; UTEC Survey; July-August, 2010

Acoustic surveyor for a field development project in water depth of 1400 m aboard a 93m construction service vessel. Contributed to survey crew that included hydrographic surveyors and technicians aboard a support vessel fitted with two work class ROVs and a 140-ton crane. Project included LBL array installation calibration and recovery; crossing mattress installation; as-laid survey of installed flowlines. Specific duties included deployment and calibrations offshore; processed acoustic, bathymetry and CTD data. Subsurface positioning included ParoScientific Digiquartz Bathy, Sonardyne Wideband MK 5 Compatts and Dunking Transducer, Octans 3000 Fiber optic gyro and Valeport CTD. Sonardyne Fusion & Winfrog were the utilized software. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

BP Norge/Subsea 7; Spoolpiece Metrology & Field Development; Skarv Project; Offshore Norway; Subsea 7, dsv Toisa Polaris; May-June, 2010.

Responsible charge as reporting surveyor (night party chief) overseeing 7-member survey crew for spool piece metrology, structure installation, and as-laid survey in water depths between 300-380 m. Oversaw night survey operations of a dive support vessel operating with two Hercules work-class ROVs and a 400-ton crane. Equipment included Trittech bathy, PSA 900 altimeter, Titech OAS, Reson Seabat 8125 MBES, Octans 3000 FOG, P/C/S ROV boom camera system, RDI Workhorse Doppler velocity log, Valeport Midas CTD, QINSy online navigation suite, Visualworks digital video recording, AutoCAD charting suite, Veripos DGPS, Meridian Gyrocompass, HiPAP 500 USBL, Compatt MK5 LBL, and Sonardyne Fusion LBL software. Field operations included 5 LBL spool piece metrologies, as-found and as-installed surveys of pipelines and flexible jumpers; QC'd and issued survey data, results and analysis in the form of field reports. Responsible for project communication with BP client rep onboard and Subsea 7 management onshore. Performed LBL acoustic survey system deployment and calibrations offshore; processed acoustic data; analyzed dimensional control and engineering documents and drawings; performed metrology calculations; processed bathymetry and CTD data; generated results for DTM. Subsurface positioning included ParoScientific Digiquartz Bathy, Sonardyne Wideband MK 5 Compatts and ROVNAV Transceiver, Octans 3000 Fiber optic gyro and Valeport CTD. Sonardyne Fusion & AutoCAD were the utilized software. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Ageotec; PDS2000 Refresher Course; Bologna, Italy; May, 2010

Two-day refresher course covering use of PDS 2000 software and specific topics including calibration, data acquisition, and data processing.

Shell GTL/JRay McDermott; Spoolpiece Metrology; Northfield Qatar Project; Offshore Qatar; Fugro Survey ME, ssc/v DB 101; November 2009.

Acoustic surveyor for 1 LBL metrology in water depth of 38 m that was utilized for 3D spool piece fabrication. Contributed to survey crew that included hydrographic surveyors and technicians aboard a 479-foot semi-submersible crane vessel fitted with one ROV. Performed LBL acoustic survey system mobilization, deployment and calibrations offshore; processed acoustic data; analyzed dimensional control and engineering documents and drawings; performed metrology calculations; processed bathymetry and CTD data; generated results for DTM. Subsurface positioning included ParoScientific Digiquartz Bathy, Sonardyne Wideband MK 5 Compatts and Dunking Transducer, Octans 3000 Fiber optic gyro and Valeport CTD. Sonardyne Fusion & AutoCAD were the utilized software. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Petrobel (ENI); Spool Piece Metrology, Umbilical Installation and Trenching; North Bardawil Project; Offshore Port Said, Egypt; Deep Ocean; m/v Volantis; July-August, 2009

Responsible charge as reports coordinator then party chief overseeing 6-member survey crew for spool piece metrology, structure installation, and umbilical laying and trenching in water depths between 105-330 m. Oversaw all survey operations of a multi-role subsea support vessel operating with two ROVs and a trencher. Equipment included Tritech bathy, PSA 900 altimeter, Titech OAS, Tritech Delta T MBES, Octans 3000 FOG, P/C/S ROV boom camera system, RDI Workhorse Doppler velocity log, TSS 440 pipetracker, Valeport Midas CTD, QINSy online navigation suite, Visualworks digital video recording, AutoCAD charting suite, Starfix HP DGPS, Meridian Gyrocompass, HiPAP 500 USBL, Compatt MK5 LBL, and Sonardyne Fusion LBL software. Field operations included 2 LBL spool piece metrologies, pre-lay surveys and as-trenched surveys of umbilicals; QC'd and issued survey data, results and analysis in the form of field reports. Responsible for project communication with Petrobel client rep onboard and Deep Ocean management onshore. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Total E&P Congo; Spoolpiece Metrology; Moho Bilondo Field Development Project; Offshore Congo; Zupt LLC, m/v Polar Prince; May 2009.

Acoustic surveyor for 1 LBL (and inertial) metrology in water depth of 450 m that was utilized for 3D spool piece fabrication. Performed LBL positioning system calibrations offshore; processed acoustic data; analyzed dimensional control and engineering drawings; performed metrology calculations; processed bathymetry and CTD data; generated results for DTM. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Seabird CTD, Sonardyne Wideband MK 5 Compatts, Octans Fibre optic gyro, Sonardyne Fusion & AutoCAD software. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures

Exxon Mobil; Kizomba C Field Development; LBL Semi-Submersible Rig Move; Offshore Angola; Fugro Survey B.V.; semisub rig Jim Cunningham; February to March, 2009

Responsible charge as party chief overseeing surface and subsurface positioning during an LBL multi-vessel rig move in 800 m. w.d. offshore Angola in the Atlantic Ocean. Performed offshore calibrations that included the gyrocompass and the LBL array. Remote positioning of tugs was managed using the Fugro Drone system. LBL final fixes were taken on the well using a Sonardyne MK5 array and ROVNAV. Surface positioning spread included Starfix HP dual frequency DGPS, Trimble L1/L2 dual frequency DGPS, Starfix.VBS single frequency DGPS and Meridian SGBrown gyrocompass. Starfix.nav was used as surface navigation software and the subsurface software used was Starfix.acoustics (Fusion). A Leica total station was used for the sunshot. Responsible for preparation, QC and issue of survey data results and analysis in the form of field reports to client. Prepared JSA for operations involving risk and ensured team members were operating according to HSE standard. Responsible for communications with client rep onboard and Fugro management onshore. Delivered daily reports in writing. Prepared final report in the office on completion of field operations.

BP Exploration.; Baku IMR Project; Offshore Azerbaijan; Saipem UK, Sonsub Division; DSV Akademik Tofiq Ismayilov; December, 2008.

Responsible charge as party chief overseeing 18-member survey crew for inspection, maintenance and repair survey in water depths between 250-300 m. Complete mobilization of DSV operating with two ROVs at the commencement of a long-term contract. Equipment included Tritech bathy, PSA 900 altimeter, Titech OAS, Tritech DHS Profiler, Octans 3000 FOG, P/C/S ROV boom camera system, RDI Workhorse Doppler velocity log, Imenco green laser, TSS pipetracker, Neptune LD system, Valeport Midas CTD, Navipac online navigation suite, Visualworks digital video recording, AutoCAD charting suite, Veripos DGPS, Meridian Gyrocompass, HiPAP 500 USBL, Leica TCR 1205 total station, Leica 500 series RTK GPS. Field operations included alongside and offshore calibrations; GVI and CP survey of flowlines and umbilicals; Asset inspections including 3.4u reports/video stills of clamps risers, flanges, etc; Reviewed survey sub-contractor mobilization and calibrations to ensure compliance with project specifications. QC'd and issued survey data, results and analysis in the form of field reports. Responsible for project communication with BP client rep onboard and Sonsub management onshore. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Enagas S.A.; Balearic Submarine Pipeline Project; Offshore Spain; Saipem UK, Sonsub Division; m/v VOS Sympathy; October, 2008.

Responsible charge as offshore survey representative for pre-lay survey in water depths between 5 m – 1000 m. Reviewed survey sub-contractor mobilization and calibrations to ensure compliance with project specifications. QC'd sub-contractor field data, field reports, and charts, to ensure that relevant specifications were met. Generated field reports and was responsible for project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Total Exploration & Production Norge; Frigg Field Cessation Project; Offshore Norway; Saipem UK, Sonsub Division; m/v Normand Cutter; August, 2008.

Responsible charge as party chief for removal and disposal of obsolete sealines and associated ancillaries in approximately 100 meters water depth. Performed survey system mobilization and calibrations. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Valeport 604 STD/CTD, Kongsberg HiPAP 500P USBL, Octans Fiber optic gyro (MRU), Sonardyne

mini-beacon (transponder/responder). Mobilization report written offshore. Generated field reports and responsible for project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Nexen UK; Umbilical and Service Line Installations for Etrick FPSO Project; Offshore UK; Saipem UK, Sonsub Division; m/v Normand Cutter; July, 2008.

Responsible charge as party chief for 3 umbilical and 3 service line installations in approximately 100 meters water depth. Performed umbilical load out measurements and overage loop calculations on-the-fly. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Valeport 604 STD/CTD, Kongsberg HiPAP 500P USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder). Final reports written offshore during ongoing operations. Generated field reports (that included plan/profile sheets) and responsible for project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Total Upstream Nigeria; Spoolpiece Metrologies for AKPO Field Development Project; Offshore Nigeria; Saipem UK, Sonsub Division; m/v Bourbon Trieste; May to June, 2008.

Report Coordinator for 7 LBL metrologies in water depths between 1250 and 1480 meters that were utilized for 3D spool piece fabrication. Performed LBL positioning system calibrations offshore; processed acoustic data; analyzed dimensional control and engineering drawings; performed metrology calculations; processed bathymetry data; generated results for DTM. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Valeport Midas & Mini STD/CTD, Sonardyne Wideband MK 5 Compatts, Sonardyne Ranger USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder). Sonardyne Fusion software. Final reports written offshore during ongoing operations. Generated field reports and project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

BP GUPCO; Spoolpiece Metrologies for Taurt LNG Train 1 Supply Project; Offshore Egypt; Saipem UK, Sonsub Division; m/v Normand Cutter; March to April, 2008.

Report Coordinator for 5 LBL metrologies in approximately 100 meters water depth that were utilized for 3D spool piece fabrication. Performed LBL positioning system calibrations offshore; processed acoustic data; analyzed dimensional control and engineering drawings; performed metrology calculations; processed bathymetry data; generated results for DTM. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Valeport 604 STD/CTD, Sonardyne Wideband MK 5 Compatts, Kongsberg HiPAP 500P USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder). Sonardyne Fusion software. Final reports written offshore during ongoing operations. Generated field reports and project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications and company procedures.

Reliance Industries; KG-D6 Platform Jacket Installation; Offshore India; Fugro Survey M.E.; SSCV D/B 101; January to February, 2008.

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management, conventional land survey and ROV operations; 100-meter water depth. Surface positioning spread included Starfix Plus/L1, DGPS with MRDGPS QC software, Meridian Gyrocompasses, CDL Mini Tilt pitch and roll sensor, and Starfix.seis/wombat/usbl-- multi-vessel surface/sub-surface survey software. Work class ROV deployed from the vessel configured for installation support operations included Sonardyne Scout MK5 USBL, altimeter, strain-gauge depth transducer, Simrad Sonar, Compass and Video overlay. Valeport tide gauge installed to determine mean sea level. RD acoustic Doppler current profiler installed and operated for real-time current data. Conventional land survey instruments used to control jacket level, mark legs for cut-off and to install boat landings. Generated field reports and project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications.

ONGC; Vasai East Development Platform Project; Offshore India; Fugro Survey M.E.; SSCV D/B 101; November to December, 2007.

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management, conventional land survey and ROV operations; 54-meter water depth; 3000-ton jacket. Surface positioning spread included Starfix Plus/L1, DGPS with MRDGPS QC software, Trimble robotic total stations, Meridian Gyrocompasses and Starfix.seis/wombat/usbl-- multi-vessel surface/sub-surface survey software. Work class ROV deployed from the barge configured for installation support operations included Sonardyne Scout MK5 USBL, altimeter, strain-gauge depth transducer, Simrad Sonar, Compass and Video overlay. Valeport tide gauge installed to determine mean sea level. Conventional land survey instruments used to control jacket level, mark legs for cut-off, install boat landings and for final as-built survey relative to existing platforms. Generated field reports and project communication. Ensured standards were met for QA/QC and HSE and that procedures followed were in accordance with contract specifications.

Shell UK; Caravel, L09-FA-1 and L09-FB-1 Monotower Platform Installations; Offshore Netherlands and U.K.; Fugro Survey B.V.; SSCV Hermod; August to September, 2007.

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management and conventional land survey; 250-ton structures; from 30 to 80-meter water depth. Surface positioning spread included Starfix L1, DGPS with MRDGPS QC software, Leica robotic total stations, Octans FOG/MRU and Starfix.seis/drone/usbl-- multi-vessel surface/sub-surface survey software. Subsea instrumentation included MK5 LBL with dual axis inclinometer for measuring monopile verticality. Conventional land survey instruments used to control level and for positioning template installation. Generated field reports and final reports. Ensured standards were met for QA/QC and HSE.

Total E&P Angola; Pre-Installation Pipeline Repair Survey; Offshore Angola; Fugro Survey B.V.; m/v Bourbon Jade; July, 2007.

Responsible charge as party chief for LBL ROV positioning as part of the combined pipeline as-found survey and bathymetric seabed survey in 1350 meters water depth. Ensured subsea positioning operations were in accordance with specifications and procedures. Performed LBL, USBL, GPS, gyro, dual-head scanning sonar, bathymetry and sound velocity system calibrations offshore. Generated centimeter level accuracy for as-found position reports of existing damaged pipeline. Ensured standards were met for QA/QC and HSE. Subsurface positioning included SeaKing 704 Bathy and dual-head scanning sonar, Tritech PA500/6-S Altimeter, Valeport Mini & Midas STD/CTD, SAIV CTD, Sonardyne Wideband MK 5 Compatts, Kongsberg HPR400 USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder). Generated final reports that included plan/profile sheets

Total E&P Angola; LBL Rig Move for Dalia Development Project; Offshore Angola; Fugro Survey B.V.; d/s Pride Angola; June 2007.

Responsible charge as party chief for LBL DP Rig Move in 1250 m water depth. Ensured subsea positioning operations were in accordance with specifications and procedures. Performed LBL positioning system calibrations offshore. Generated field reports. Ensured standards were met for QA/QC and HSE. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Valeport Mini & Midas STD/CTD, SAIV CTD, Sonardyne Wideband MK 5 Compatts, Kongsberg HiPAP 450 USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder).

Total E&P Angola; Metrology for Rosa & Dalia Development Projects; Offshore Angola; Fugro Survey B.V.; m/v Bourbon Helene; February 2007 to June 2007.

Responsible charge as party chief for 12 LBL metrologies in water depth between 1300 and 1425 meters that were utilized for 3D spool piece fabrication. Ensured positioning operations were in accordance with specifications and procedures. Performed LBL positioning system calibrations offshore. Generated field reports that included plan/profile sheets. Ensured standards were met for QA/QC and HSE. Processed data that generated results for DTM. Subsurface positioning included SeaKing 704 Bathy, Tritech PA500/6-S Altimeter, Valeport Mini & Midas STD/CTD, SAIV CTD, Sonardyne Wideband MK 5 Compatts, Kongsberg HiPAP 450 USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder). Final reports written in the office upon completion.

Total E&P Angola; Service Line Installation for Rosa Development Project; Offshore Angola; Fugro Survey B.V.; Saipem FDS; December, 2006 to January, 2007.

Responsible charge as party chief for 3 x 120 km service line installations in water depth between 1300 and 1425 meters. Ensured positioning operations were in accordance with specifications and procedures. Generated field reports that included AutoCAD drawings. Ensured standards were met for QA/QC and HSE. Performed sensor calibrations in addition to data processing and reporting. Surface positioning spread included Starfix-HP and Plus DGPS (SPM2000), Kongsberg Seapath DGPS and inertial heading, SGBrown gyrocompass, and Fanbeam infrared tracking; sub-surface positioning included Kongsberg HiPap USBL acoustics, Sonardyne ROV Nav, MK5 Compatts, transponders, responders; SeaKing bathy, Octans MRU, Valeport CTD; Fugro Starfix.seis survey software, and MRDGPS QA/QC software; Leica total station and digital inclinometer for sensor calibrations.

Noordgastransport B.V. (NGT); Deep Water Annual Inspection Pipeline Survey; Offshore Netherlands; Fugro Survey B.V.; r/v Imor; October, 2006 to November, 2006.

Responsible charge as party chief for geophysical survey with surface and sub-surface data acquisition systems in water depths between 10-85 meters. Ensured positioning and geophysical operations were in accordance with specifications and procedures. Performed system calibrations in the harbor (for Gyro/GPS) and offshore (USBL/SSS/SBP). Surface positioning spread included Starfix-HP and Plus DGPS (SPM2000), Meridian gyrocompass, TSS MRU, Starfix.Seis navigation software and MRDGPS GPS QC software. Subsurface positioning included Atlas Deso Echo-sounder, Nautronix USBL, ORE sub-bottom profiler, EG&G side-scan sonar, SAIV STD/CTD

British Gas; Maria Module Installation; Offshore U.K.; Fugro Survey B.V.; SSCV Stanislav Yudin; September, 2006.

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management, conventional land survey and ROV operations; 50-meter water depth; 125-ton module. Surface positioning spread included Trimble, Starfix SPOT, Sercel DGPS with MRDGPS QC software, Tokimec gyrocompass, Octans FOG/MRU and Starfix.nav/drone/usbl-- multi-vessel surface/sub-

surface survey software. Survey class ROV deployed from the barge configured for pre-installation site survey included HiPAP 500-SSBL, altimeter, bathy, Simrad Sonar, Compass, Sensordata SD204 CTD and Video overlay. Conventional land survey instruments used to control level and for calibration in port.

Bluewater Industries; Wenlock & Chiswick Jacket Installations; Offshore U.K.; Fugro Survey B.V.; SSCV Stanislav Yudin; August, 2006 to September, 2006.

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management, conventional land survey and ROV operations; 25-meter water depth; 250-ton jackets. Surface positioning spread included Trimble, Starfix SPOT, Sercel DGPS with MRDGPS QC software, Tokimec gyrocompass, Octans FOG/MRU and Starfix.nav/drone/usbl-- multi-vessel surface/sub-surface survey software. Survey class ROV deployed from the barge configured for pre-installation site survey included HiPAP 500-SSBL, altimeter, bathy, Simrad Sonar, Compass, Sensordata SD204 CTD and Video overlay. Conventional land survey instruments used to control jacket level and for calibration in port.

Total E&P Angola; Metrology for Rosa Development Project; Offshore Angola; Fugro Survey B.V.; m/v Bourbon Jade; June, 2006 to July, 2006.

Responsible charge as party chief for 15 LBL metrologies in water depth between 1300 and 1425 meters that were utilized for 3D spool piece fabrication. Ensured positioning operations were in accordance with specifications and procedures. Performed positioning system calibrations in the harbor (for ROV/Gyro/GPS) and offshore (USBL/LBL). Generated field reports that included plan/profile sheets. Ensured standards were met for QA/QC and HSE. Surface positioning spread included Starfix-HP and Plus DGPS (SPM2000), Meridian gyrocompass, TSS MRU, Videotel transceivers, digital barometer, Freewave modem telemetry, Starfix.Seis/Acoustics navigation software and MRDGPS GPS QC software. Subsurface positioning included SeaKing 700 Bathy, Valeport Midas STD/CTD, Sonardyne MK4, 5 Compatts, Kongsberg HiPAP USBL, Octans Fiber optic gyro (MRU), Sonardyne mini-beacon (transponder/responder) Tritech Altimeter, Tritech Bathy.

Noordgastransport B.V. (NGT); Deep Water Annual Inspection Pipeline Survey; Offshore Netherlands; Fugro Survey B.V.; r/v Victor Hansen; March, 2006 to May, 2006.

Senior online surveyor responsible for surface and sub-surface positioning systems in water depths between 10-85 meters. Ensured positioning operations were in accordance with specifications and procedures. Performed positioning system calibrations in the harbor (for Gyro/GPS) and offshore (USBL). Surface positioning spread included Starfix-HP and Plus DGPS (SPM2000), Meridian gyrocompass, TSS MRU, Starfix.Seis navigation software and MRDGPS GPS QC software. Subsurface positioning included Atlas Deso Echo-sounder, Nautronix USBL, ORE sub-bottom profiler, EG&G side-scan sonar, SAIV STD/CTD

Chevron/Shell; West Area Gas Pipeline; Offshore Ghana; Fugro Survey B.V.; December, 2005 to February, 2006.

Responsible charge as party chief for surface positioning, anchor handling tug management, and laser-tracking survey during gas pipeline installation; 14-80-meter water depth. Surface positioning spread included Starfix-HP and Plus DGPS (SPM2000), Meridian gyrocompass, Free Wave Modem/Telemetry, CSI Vector GPS/gyro; Fanbeam Laser tracking; Drone hardware and software; Starfix.Nav navigation software and MRDGPS GPS QC software.

Canadian Natural Resources; FPSO Field Development; West Esprit Project; Offshore Ivory Coast; Fugro Survey B.V.; September to October, 2005

Responsible charge as survey party chief overseeing surface and subsurface positioning operations during multi-vessel FPSO field development in 100-meter water depth, offshore Ivory Coast. Construction included 3 x 5.5 km pipelines, pipeline initiation/laydown, and mattress installation; Surface positioning spread included Starfix HP/Plus DGPS, Meridian gyrocompass, Drone hardware and software; Free Wave Modem/Telemetry, CSI Vector GPS/gyro. ROV support vessel configured with Sonardyne MK 4 LBL & ROV Nav acoustics for pipeline initiation/laydown; touchdown monitoring and as-laid survey configuration included profiler, USBL, strain gauge pressure transducer, altimeter, fiber optic gyrocompass, MRUs, eventing software and Starfix.nav survey software.

Mobil Producing Nigeria/Nigerian National Petroleum Corp; Riser Installation East Area EPC2 Project; Offshore Nigeria; Fugro Survey B.V.; August, 2005

Responsible charge as party chief for surface positioning, anchor handling tug management, and laser-tracking survey during riser installations; 20-meter water depth. Surface positioning spread included Starfix-HP and Plus DGPS (SPM2000), Meridian gyrocompass, Free Wave Modem/Telemetry, CSI Vector GPS/gyro; Golf Laser tracking; Drone hardware and software; Starfix.Nav navigation software and MRDGPS GPS QC software.

BP Angola; Greater Plutonio Rig Positioning and Batch Set; Block 18 Angola; Fugro Survey B.V.; M/V Iberville; June to July, 2005

Senior online surveyor responsible for LBL box-in and array calibration for positioning during production and injection well drilling in 1400 meters water depth. Performed testing, rigging and deployment of Sonardyne MK 5 Compatts, followed by box-in and array calibration and subsequent recovery of MF Compatt arrays. Surface positioning software utilized was Starfix.Nav with MRDGPS and Multifix QA/QC software. Subsurface positioning utilized Starfix.acoustics/Sonardyne Data Fusion engine/software. Equipment included Sonardyne RovNav transceiver, MK5 Compatts, PAM acoustic tester/charger, SAIV STD/CTD, SGBrown Gyrocompass, Trimble, Skyfix XP and Starfix HP GPS, and TSS MRU.

Exxon Mobil; Kizomba B Field Development & FPSO Installation; Offshore Angola; Fugro Survey B.V.; Saibos FDS; December, 2004 to June, 2005

Senior online surveyor responsible for surface and sub-surface positioning during J-Lay pipelay, jumper/flexible jumper, single hybrid riser (SHR), suction anchor, subsea distribution unit, floating production storage and offloading (FPSO) and OOB (oil offloading buoy) mooring installations in deep water between 900 to 1100 meters water depth. Performed sensor calibrations in addition to data and reporting QA/QC. Surface positioning spread included Skyfix Multifix DGPS, Kongsberg Seapath DGPS and inertial heading, SGBrown gyrocompass, and Fanbeam infrared tracking; sub-surface positioning included Simrad HiPap USBL acoustics, Sonardyne ROV Nav, MK4 Compatts, transponders, responders; SeaKing bathy, Octans MRU, Valeport CTD; Fugro Starfix.seis survey software, and Thales Multifix QA/QC software; Leica total station and digital inclinometer for sensor calibrations.

Iranian Offshore Oil Co (IOOC) Sirri-Qeshm 12" Pipeline Installation; Offshore Iran; MSS; p/l/v S355; October to November, 2004

Responsible charge as party chief overseeing surface positioning operations during conventional multi-vessel pipelay in water depths between 10 – 85 meters in the Persian Gulf. Conventional surface

positioning spread included Veripos and CNAV GPS, SG Brown gyrocompass, NavyStar2003, multi-vessel survey software. Three tugs outfitted with Sercel GPS, Oceantools gyrocompass or Simrad Fluxgate compass, Satel and Pacific Crest telemetry, and Navystar tug management software.

AGIP Exploration; Jacket Dimensional Control and Sensor Calibration Surveys; Viktor Lenac Shipyard; Rijeka, Croatia; Mediterranean Survey Services (MSS); September, 2004

Responsible charge as party chief for IKA-B jacket dimensional control survey and sensor calibration prior to jacket load-out. Conventional land survey techniques involving a total station were utilized. Octans MRU base plate misalignment for determination of C-O values was determined using the total station.

AGIP Exploration; Naide Monopod Installation; Adriatic Sea, Offshore Italy; Mediterranean Survey Services; Crawler; September, 2004

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management, conventional land survey and ROV operations; 35-meter water depth; 250 ton jacket. Surface positioning spread included C-Nav, Veripos, Omnistar and Sercel DGPS, Meridian gyrocompass, Octans MRU and NavyStar2004-- multi-vessel survey software. Survey class ROV deployed from the barge configured for installation support operations included HPR 400-SSBL, altimeter, Simrad Sonar, Compass and Video overlay. Conventional land survey instrument used to control jacket level.

AGIP Exploration; IKA-A Jacket Installation; IKA Gas Field, North Adriatic Sea, Offshore Croatia; Mediterranean Survey Services; Taklift 7; August, 2004

Responsible charge as party chief for surface and subsurface positioning, anchor handling tug management, conventional land survey and ROV operations; 65-meter water depth; 550-ton jacket. Surface positioning spread included C-Nav, Veripos, Omnistar and Sercel DGPS, Meridian gyrocompass, Octans MRU and NavyStar2004-- multi-vessel survey software. Survey class ROV deployed from the barge configured for installation support operations included HPR 400-SSBL, altimeter, Simrad Sonar, Compass and Video overlay. Wave Rider Buoy deployed for monitoring sea state. Conventional land survey instrument used to control jacket level and mark legs for cut-off.

AGIP Exploration; Jacket Dimensional Control and Sensor Calibration Surveys; Rosetti Marino Fabrication Yard; Ravenna, Italy; Mediterranean Survey Services; August, 2004

Responsible charge as party chief for IKA-A jacket dimensional control survey and sensor calibration prior to jacket load-out. Conventional land survey techniques involving a total station and level combined with static GPS were utilized. Octans MRU was calibrated for C-O values using the established baseline and the total station. Octans base plate misalignment was determined using the total station.

Madison Oil (Lotus); Jack-Up Rig Move; Ayazli-1 Well Site; Offshore Erelgi, Turkey; Fugro Oceansismica; Prometeu; July, 2004

Senior online surveyor responsible for surface positioning during a conventional multi-vessel rig move offshore Turkey in the Black Sea. Surface positioning spread included Starfix Spot DGPS, gyrocompass, Fugro Starfix.seis survey software, and Fugro MRDGPS QA/QC software.

Petrobel (AGIP); Jack-Up Rig Move; Temsah NW-1 Platform; Offshore Port Said, Egypt; Impresub; Adriatic IV; June, 2004

Responsible charge as party chief overseeing surface positioning, subsurface positioning and ROV site inspection during a conventional multi-vessel rig move offshore Egypt in the Mediterranean Sea. Surface positioning spread included Skyfix MK5 Spot DGPS, gyrocompass, Thales GNS II survey software, and Thales Multifix 4 GPS QA/QC software. Subsurface positioning included Simrad HPR 400 acoustics.

IEOC-International Egyptian Oil Company (AGIP); Semi-Submersible Rig Move; Taurt 2 Well; Offshore Port Said, Egypt; Impresub; Actinia; May, 2004

Responsible charge as party chief overseeing surface positioning during a conventional multi-vessel rig move offshore Egypt in the Mediterranean Sea. Surface positioning spread included Skyfix MK5 Spot DGPS, gyrocompass, Thales TRACS-TDMA (tug management), Thales GNS II multi-vessel survey software, and Thales Multifix 4 GPS QA/QC software.

BP Exploration (Shah Deniz); Platform Installation; Central Azeri Platform; Caspian Sea, Azerbaijan; Mediterranean Survey Services (MSS); DBA; March-April, 2004

Senior online surveyor responsible for surface and subsurface positioning; conventional land survey techniques; and review and documentation of survey procedures for a conventional multi-vessel jacket installation in 70 m water depth in the Caspian Sea. Conventional surface positioning spread included Skyfix Spot DGPS, Sercel GPS, gyrocompass, Thales TRACS-TDMA bridge card (tug management) NavyStar2003-- multi-vessel survey software, and Thales Multifix 4 GPS QA/QC software. Two ROVs deployed from the derrick barge configured for construction support operations included, HPR-USBL, bathymetric pressure transducer, altimeter, fiber optic gyrocompass, MRUs and Ocean Tools video overlay.

IEOC-International Egyptian Oil Company (AGIP); Semi-Submersible Rig Move; Taurt 1 Well; Actinia; Offshore Port Said, Egypt; Impresub; March, 2004

Responsible charge as party chief overseeing surface positioning during a conventional multi-vessel rig move offshore Egypt in the Mediterranean Sea. Surface positioning spread included Skyfix MK5 Spot DGPS, gyrocompass, Thales TRACS-TDMA (tug management), Thales GNS II multi-vessel survey software, and Thales Multifix 4 GPS QA/QC software.

AGIP Exploration (Iran); South Pars Phase 4 & 5, 30" Gas with 4" Piggyback Pipeline Installation; Offshore Iran; MSS; BOS355; October, 2003 to February, 2004

Responsible charge as survey party chief overseeing surface and subsurface positioning operations during conventional multi-vessel pipelay in water depths between 10 – 85 meters in the Persian Gulf. Conventional surface positioning spread included Skyfix Spot DGPS, gyrocompass, NavyStar2003,

multi-vessel survey software, and Sercel QA/QC software. ROV support vessel configured with LBL acoustics for pipeline laydown; touchdown monitoring and as-laid survey configuration included profiler, USBL, pipetracker, bathymetric pressure transducer, altimeter, fiber optic gyrocompass, MRUs, Sercel DGPS, eventing software and NavyStar survey software.

BP Exploration (Shah Deniz); Well Site Surveys and Gravity Coring; Deep Water Gunashli Prospect; Caspian Sea, Azerbaijan; Thales Geosolutions (Caspian); August-September, 2003

Senior surveyor responsible for onboard multibeam acquisition, processing and QC for conventional HR, UHR, and Analogue well site surveys, gravity coring, and pipeline route surveys in water depths ranging between 50 m and 500 m. Conventional HR, UHR and Analogue well site surveys utilizing 2-D seismic, sparker, sub-bottom profiler, side-scan sonar, multibeam sonar and single-beam sonar, gyrocompass, Skyfix MK5 Spot DGPS, PDS 2000 multibeam software, and GNS II navigation software.

Dragon Oil; Well Site Survey and Gravity Coring; Zikh 2 Well; Caspian Sea, Offshore Turkmenistan; Fugro Oceansismica; July, 2003

Senior online surveyor responsible for navigation and positioning during a conventional well site survey with gravity coring in a developed field with many navigation hazards. Conventional HR, UHR and Analogue route surveys utilizing 2-D seismic, sparker, sub-bottom profiler, side-scan sonar, single-beam sonar, gyrocompass, MRUs, Starfix Spot and MN8 DGPS and Starfix.seis/proc navigation/processing software.

ADOC-Abu Dhabi Oil Company; Ocean Bottom Cable (OBC) Route Survey; Offshore Abu Dhabi, U.A.E.; Fugro Oceansismica; April-June, 2003

Senior surveyor responsible for multibeam acquisition; offline multibeam processing; and online navigation and positioning during a conventional OBC route survey in shallow water between 5 – 50 meters water depth. Conventional HR, UHR and Analogue route surveys utilizing 2-D seismic, sparker, sub-bottom profiler, side-scan sonar, multibeam sonar and single-beam sonar, gyrocompass, Oistar Fieldbus, MRUs, Starfix Spot, MN8 and HP DGPS and Starfix.seis/proc navigation/processing software. Onboard processing, CAD and reporting performed to deliver preliminary results at completion of data acquisition.

AGIBA (AGIP); Jack-Up Rig Move; Offshore Abu Rudeis, Red Sea, Egypt; Fugro Oceansismica; January, 2003

Responsible charge as party chief overseeing surface positioning and ROV drilling inspection during a conventional multi-vessel rig move offshore Egypt in the Red Sea. Conventional surface positioning spread included Starfix Spot DGPS, gyrocompass, Thales GNS-II, multi-vessel survey software, and Fugro MRDGPS QA/QC software.

IEOC-International Egyptian Oil Company (AGIP); Semi-Submersible Rig Move; Offshore Port Said, Egypt; Fugro Oceansismica; December, 2002

Responsible charge as party chief for surface positioning during a conventional multi-vessel rig move offshore Egypt in the Mediterranean Sea. Conventional surface positioning spread included Starfix Spot DGPS, gyrocompass, Svitzer Rig Move System multi-vessel survey software, and Fugro MRDGPS QA/QC software.

AGIP Gas BV– Libyan Branch; Western Libya Gas Project; Bahr Essalam Subsea Production System; Pre-Installation Survey; Offshore Libya; Fugro Oceansismica; 10-11/2002

Surveyor/Draftsman responsible for report QC, survey processing and AutoCAD drawing for two manifold site surveys in water depth from 140 m to 150 m. Conventional high resolution and analogue site surveys utilizing Chirp sub-bottom profiler, side-scan sonar, HPR acoustics, multibeam and single-beam echo-sounder, gyrocompass, MRUs, Starfix Spot GPS, and Starfix Seis/Proc survey software.

BP Exploration; As-Trenched/Out of Straightness, As-Backfilled and As-Laid surveys; ETAP Satellites Project; North Sea, U.K.; Geolab; August-September, 2002

Senior Surveyor responsible for offline video eventing/processing, survey report QC and AutoCAD for ROV pipelay survey in water depths approximately 100 meters in the U.K. sector of the North Sea. ROV platform utilizing profiler, Doppler velocity log, USBL, pipetracker, bathymetric pressure transducer, altimeter, fiber optic gyrocompass, MRUs, Sercel DGPS, Pisys eventing software and Norcom survey software.

Red Electra/O.N.E.; Electric/Fiber Optic Cable Pre-Engineering Route Survey, As-Laid Survey and Gravity Coring; Strait of Gibraltar, Spain and Morocco; Impresub, May-June, 2002

Senior Surveyor responsible for offline multibeam processing and bathymetry QC for ROV bathymetric survey and gravity coring in water depths between 5 – 700 meters in the Strait of Gibraltar. ROV platform utilizing multibeam, Doppler velocity log, USBL, Innovatum pipe (cable) tracker, bathymetric pressure transducer, altimeter, fiber optic gyrocompass, MRUs, Skyfix Spotbeam DGPS, and PDS2000 survey software.

Coparex; Well Site Survey; Offshore Tunisia; Fugro Oceansismica; February, 2002

Senior online Surveyor responsible for navigation and positioning for conventional digital and analogue well site survey offshore Tunisia. Conventional site survey utilizing 2-D seismic, sub-bottom profiler, side-scan sonar, single-beam echo-sounder, gyrocompass, Starfix Spot GPS, and PCNAV/PROC survey software.

British Gas; Well Site Survey; Offshore Tunisia; Fugro Oceansismica; January, 2002

Senior online Surveyor responsible for navigation and positioning for conventional digital and analogue well site survey offshore Tunisia. Conventional site survey utilizing 2-D seismic, sub-bottom profiler, side-scan sonar, single-beam echo-sounder, gyrocompass, Starfix Spot GPS, and PCNAV/PROC survey software.

BP Exploration (Shah Deniz); Inshore Route Survey; Sangachal Pipeline; Shah Deniz Prospect; Caspian Sea, Azerbaijan; Fugro Oceansismica; 10-11/2001

Senior online Surveyor responsible for multibeam processing and QC; survey report QC; AutoCAD drawings for conventional inshore pipeline route survey in water depths ranging between 2-5 meters. Conventional Analogue route survey utilizing sub-bottom profiler, side-scan sonar, multibeam sonar and single-beam sonar, gyrocompass, Starfix Spot GPS, PDS 2000 multibeam software, and PCNAV/PROC navigation software.

Techint International; Pre-Engineering Survey and Gravity Coring; Ecuador OCP Project, Marine Terminals Facilities; Esmerandas, Ecuador; Fugro Oceansismica; October, 2001

Surveyor/Draftsman responsible for report QC, survey processing and AutoCAD drawing for single point mooring (SPM) site survey, shore approach route survey, and gravity coring from water depth 2 m to 42 m. Conventional site survey utilizing sub-bottom profiler, side-scan sonar, sparker, single-beam echo-sounder, gyrocompass, Starfix Spot GPS, PCNAV/PROC survey software and Surfer DTM software.

BP Exploration (Shah Deniz); Pipeline Route/Well Site Survey and Gravity Coring; Sangachal Pipeline; Shah Deniz Prospect; Caspian Sea, Azerbaijan; Fugro Oceansismica; 8-9/2001

Senior online Surveyor responsible for onboard multibeam processing and QC for conventional HR, UHR, and Analogue well site survey, gravity coring and pipeline route survey in water depths ranging between 80 m and 380 m. Conventional HR, UHR and Analogue well site surveys utilizing 2-D seismic, sparker, sub-bottom profiler, side-scan sonar, multibeam sonar and single-beam sonar, gyrocompass, Starfix Spot GPS, PDS 2000 multibeam software, and PCNAV/PROC navigation software.

Calabria District Flood Control; Flood Damage, Debris Survey; Ionian Sea; Catanzaro, Italy; Fugro Oceansismica; July, 2001

Senior online Surveyor responsible for online navigation and positioning for nearshore flood damage, debris survey in water depth between 0-30 meters. Conventional site survey utilizing sub-bottom profiler, side-scan sonar, magnetometer, single-beam echo-sounder, gyrocompass, Starfix Spot GPS, and PCNAV/PROC survey software.

Tyco Submarine Systems; TGN Central Mediterranean Extension; Submarine Fiber-Optic Cable System; Calvi, Corsica, France; Fugro Oceansismica; June, 2001

Surveyor/Draftsman responsible for reporting QC and AutoCAD drawing for inshore site survey from water depth 25 m to 0 m and land survey from shoreline to beach front development. Conventional site survey utilizing sub-bottom profiler, side-scan sonar, magnetometer, single-beam echo-sounder, gyrocompass, Starfix Spot GPS, and PCNAV/PROC survey software. Conventional land survey utilizing GPS, total station, and automatic level.

Tyco Submarine Systems; TGN Eastern Mediterranean Extension; Submarine Fiber-Optic Cable System; Pentaskinos, Cyprus; Fugro Oceansismica; May, 2001

Surveyor/Draftsman responsible for reporting QC and AutoCAD drawing for inshore site survey from water depth 25 m to 0 m and land survey from shoreline to beach front development. Conventional site survey utilizing sub-bottom profiler, side-scan sonar, magnetometer, single-beam echo-sounder, gyrocompass, Starfix Spot GPS, and PCNAV/PROC survey software. Conventional land survey utilizing GPS, total station, and automatic level.

Tyco Submarine Systems; TGN Eastern Mediterranean Extension; Submarine Fiber-Optic Cable System; Tel Aviv, Israel; Fugro Oceansismica; April, 2001

Responsible as survey client representative for inshore landfall survey from water depth 25 m to 0 m and land survey from shoreline to beach front development. Conventional site survey utilizing sub-bottom profiler, side-scan sonar, magnetometer, single-beam echo-sounder, gyrocompass, Starfix Spot

Eric Isaac

GPS, and PCNAV/PROC survey software. Conventional land survey utilizing GPS, total station, and automatic level.