Marine Operations

Contract Plan

for

Apache Energy Limited

for the

Gippsland Basin Seismic Project (GBSP)

Acquired by

M/V Western Trident

Job Number 9429

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Distribution List

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1. Management Summary

The purpose of the Contract Plan is to document how HSE and Quality will be managed in the course of this Contract for ***Apache Energy Limited***, hereafter referred to as the 'Client'.

The Contract Plan consists essentially of:

- A description of how the vessel will apply the Oil Field Services QHSE Management System in order to manage all aspects relating to the Health, Safety, Environment and Quality for the types of operation being performed as part of planning and executing project specific seismic services.

- A Hazard Register, which documents the identification of the Hazards, encountered in the course of the operations, the assessment of the associated Risk, and its reduction to an acceptable level through control and recovery measures.

The structure of this Contract Plan conforms to the OGP document 6.92/317 – May 2001, "HSE Aspects in a Contracting Environment for Geophysical Operations".

The Contract Plan is a project specific document that will be updated prior to and during every Marine Seismic Project undertaken by subject vessel. The Contract Plan is a sub-set of the annual crew HSE plan.

The construction of the Contract Plan consists of:

- The review and implementation of the WesternGeco (OFS) QHSE Management System in a top to bottom approach during the planning and mobilization phase of the Contract including where applicable any bridging documentation to interface to Client's QHSE Management System.
- The starting point shall be previous client experience with projects in the same or similar areas.

- The identification and assessment of major new Contract specific risks and review of previously documented major Vessel specific generic risks and update of the Hazard Register. If the area is entirely new, scouting operations shall be performed so that any unknown major hazards are detected as early as possible.

- The identification of legal requirements for the pertinent area such as reporting requirements to external parties, specific environmental restrictions etc.

All required actions identified during the process are documented in the Remedial Work Plan (RWP)

The RWP is administered via the OFS Risk Identification Reporting, Data Capture and Accident Investigation tool, - QUEST.

2. Description of Operations

2.1. General

The Western Trident has been contracted to undertake a number of 3D marine seismic surveys for ***Apache Energy Limited*** within offshore permit areas VIC/P 41, VIC/P 42, VIC/P 47, VIC/P 53 and VIC/P 58 of the Gippsland Basin, Australia.

The Western Trident will tow an in-sea configuration comprising eight streamers, each 6000 m long, at a separation of 100 m and a depth of 7m. The energy source will comprise of dual 3147 cubic inch Bolt airgun, clustered arrays, towed astern of the vessel at a depth of 5m fired every 18.75 meters along the pre-plotted survey line. The operating pressure of the energy source will be 2000 psi.

2.2. Vessels

2.2.1. Seismic Vessel

The ***M/V Western Trident*** is a purpose built vessel for seismic operations and is one of the largest vessels in WesternGeco's fleet. She was delivered in November 1999. The vessel has carried out many complex 3D surveys in various locations worldwide. She is capable of towing 12 x 6,000m TMS Sentry Solid streamers with a maximum separation of 1,200m when using the Monowings.

The vessel is built to DNV+1A1 ICE-1A, EO Helideck classification and to the satisfaction of the rules and regulations of SOLAS 1974. International load line requirements are according to international load line convention of 1966.

The previous client conducted an audit of the vessel in the port of Dampier prior to their survey start up. In addition WesternGeco plan to conduct a QHSE Management Systems audit before the end of April.

Western Trident has a fully equipped hospital onboard staffed by an SOS medic. In the event of a medical evacuation (medevac) the Captain or Party Manager will liaise directly with the personnel listed in the contact list in *Appendix B.*

A tail-buoy is attached at the end of each towed streamer. The tail-buoy model used is the TB98 comprising a stainless steel frame and a heavy-duty yellow plastic hull. GPS navigation receivers will be installed on board the tail-buoys to provide positioning data at the tail of each streamer. It also comes equipped with a radar reflector and a quick flashing light.

A full vessel description can be found in the Vessel Specifications.

2.2.2. Guard Boat(s)

2.3. Area

The work scope for the survey is as follows:

GAP04B : exploration permit VIC/P58 – Approximately 1050 square kilometres
GAP04D : exploration permit VIC/P41 – Approximately 600 square kilometres
GAP04C : exploration permit VIC/P42 – Approximately 450 square kilometres
GAP04A : exploration permit VIC/P47 – Approximately 100 square kilometres
GAP04E : exploration permit VIC/P53 – Approximately 470 square kilometres

2.4. Communications

The *M/V Western Trident* is equipped with VSAT and Inmarsat B satellite communication systems and full GMDSS radio capabilities. Emphasis must always be placed on VSAT as the preferred method of communications. For a listing of the Western Trident's contact numbers refer to Appendix B2

2.5. Fishing Activity

Fishing activity is expected to be low, however there are four main commercial fisheries that may periodically operate in the survey area. These are the South East Fishery, the Southern Shark Fishery, the Southern Bluefin Tuna Fishery and the Eastern Tuna and Billfish Fishery. Of these, vessels of the South East Fishery are most likely to frequent the area. Contact will be made with the local fishing cooperatives to inform local fishermen of the survey. This dialogue will continue and every effort will be made to remain in contact with vessels fishing in the area to minimise interference between fishing and survey activities.

The support vessel will be used to divert fishing vessels away from the towed equipment if necessary.

2.6. Subcontractors

Where possible WesternGeco prefers to use local services and suppliers in the area of operation. There are often issues of getting suppliers to understand the HSE culture, and WesternGeco will work with them as much as possible to achieve the necessary standards, particularly with regards to OFS QHSE Standard 1: Journey Management & Driving.

The following subcontractors will provide services during the survey:

International SOS will provide a paramedic onboard the vessel for 24hr medical support. The medic has been inducted and instructed on WesternGeco's QHSE policies and safe working procedures. International SOS also provides a Medevac response organisation that can be called on.

Total Marine Services have been contracted to supply maritime crew on the Western Trident. Monson Agencies will be used as the shipping agents.

Helicopters for crew change and SAR / Medevac will be provided by CHC Helicopters or Bristow Helicopters.

2.7. Timing

The survey is scheduled to commence in late December 2004 with an approximate 3 month duration, weather permitting.

Maritime crew rotations are of five weeks duration; Seismic crew rotations are of six weeks duration. First crew change during this survey is expected to be on December 21, 2004 for the seismic crew.

On entering into Australian waters, the vessel is expected to port call in Portland prior to mobilization on the prospect area. There are expected to be no port calls for the Trident during the survey.

2.8. Hazards and Obstructions

The GAP04B survey area in Vic/P58 includes three above sea level obstructions in the form monopod platforms, situated further offshore, for which there is no requirement to undershoot. Expected hazards for the survey have been classified as follows:

2.8.1. Specific Hazards

Hazards foreseen in the course of carrying out marine seismic acquisition activities have been identified using local information and experience. A list of the main hazards can be found within section 4 of the Contract Plan, the Activity Catalogue. A register of Specific Hazards can be found within section 5 of the Contract Plan, the Hazard Register.

2.8.2. Personnel Transfer at Sea

Transfer of personnel at sea between the Western Trident and support vessels will be carried out during the survey. Further to the contents of the Maritime Quality/Safety Procedures, Transfers Of Personnel At Sea (M3ISM/P11), the following is applicable for the duration of this survey:

1. Personnel will be transferred according to Manual Of Permitted Operations (MOPO).
2. The consent of the persons to be transferred must be obtained.
3. Such transfers should comply with locally enforced regulations.

2.8.3. Bunkering or/and other Transfers at Sea

The Western Trident could be refueled at sea and spares and stores may also be transferred between vessels. WesternGeco uses documented procedures and checklists for such activities. These can be found in the Maritime Quality/Safety Procedures, Bunkering M3ISM/P008.

2.8.4. Helicopter Operations

The Western Trident has a helideck rated with D value of 22.8m and a weight limit of 9.3t, allowing it to take up to a Sikorsky S61 helicopter.

CHC Helicopters will provide a Bell 412 from West Sale for the Western Trident's crew changes, scheduled to occur every five and six weeks for the maritime crew and the seismic crew respectively. The same can be arranged for medevacs or client visits, if need be.

Procedures relating to helicopter operations are outlined in the Maritime Quality/Safety Management System, Deck Instruction manual (M3ISM/M001) section 6.2..

2.8.5. Maritime Activity

Fishing activity in the area is expected to remain low.

With the two ARPA radars and satellite navigation systems available onboard, it is possible to get sufficient warning if such passing vessels pose a danger to the Western Trident or its towed equipment. Communication systems available onboard the Western Trident will be able to alert any vessel of the potential hazard posed by the towed equipment. Any vessels entering the survey area will be contacted by the Western Trident or the support vessel and asked to stay clear of the vessel and the towed equipment by a distance of 2 nautical miles.

The chase vessel shall be used to gain attention and to mark limits of towed equipment also indicated by the tail-buoy with flashing hazard light and radar reflector.

The Support vessel will assist in guarding and escorting vessels away from the towed equipment.

2.8.6. Sun Exposure

When working in exposed deck areas or in the work-boat/ Fast Rescue Boat (FRB) care must be taken to avoid sunburn. PPE including long sleeves overalls and hats should be worn during such operations to avoid over exposure. In addition sunscreen lotions are available onboard the Western Trident and are part of the Work/FRB inventory. Use is recommended in all operations where exposure to the sun is likely to occur. In addition to the above drinking water and refreshments are taken on all deployments.

2.8.7. Piracy & Security

The area of operation is not prone to Piracy or Security issues. However there are procedures in place for such situations; refer to Fleet QHSE: Piracy.

2.8.8. Marine Fauna

Marine Mammals

The Humpback Whale northward migration usually starts mid June, ending in the middle of July. The survey acquisition period is expected to finish mid June also, so a greater chance of Humpback encounters are likely at the end of survey. Procedures to revert to in the event of whale sightings are detailed in the Environment Plan.

"Soft start" procedure will be used before every gun start-up in order to alert undetected sea mammals of the commencement of operations. During a Soft Start-up each element of a sub array, starting from the lowest, is brought on line one at a time.

Shut down of the source on sighting of marine mammals will comply with Australian environmental rules for cetaceans. (Refer to Environment Plan for details)

Sharks

Sharks are present in the survey location and may attack towed in-sea equipment. The FRB boat will not be launched (other than in an emergency) when sharks have been sighted. Procedures written to reduce the possibilities of shark attacks on equipment can be found on the Best Practices web site:

InTouch - Best Practices - Shark attacks

In the event that the streamer is severed by shark bite the course of action would be for the chase vessel to guard the lost equipment; Western Trident to retrieve required in-sea equipment while staying within visual / radar / GPS range of the tail-buoy connected to the free floating streamer. Once the remaining streamers have been retrieved, the Western Trident will be able to back down on the tail-buoy in an attempt to retrieve the free-floating streamer. Alternatively if conditions are suitable the workboat could be used to reattach the parted streamer to the Western Trident. A successful retrieval operation will be subject to favourable weather conditions at the time. Toolbox meetings, involving all personnel involved in the retrieval operation, will be conducted before the commencement of any such non-routine operation. Support vessels also have the ability to take in tow lost equipment if necessary.

Sea Snakes

Snakes may be encountered in the survey area and care must be taken when retrieving in-sea equipment to ensure snakes are not caught in gun arrays. In the event of a snakebite,

medical advice will immediately be obtained from SOS International and a Medevac may be required. Onsite immediate treatment should aim to prevent the venom from spreading. The following actions should be undertaken:

- Calm down the patient.
- Position the patient so as to get the heart at a level higher than the area of the bite.
- Firmly bandage the whole limb and immobilize by the use of a splint or sling.
- Keep the snake that inflicted the bite, as it is useful in identifying the correct anti-venom to administer.

2.9. Weather, Tides, etc.

Bass Strait is located on the northern edge of the westerly wind belt known as the Roaring Forties. Wind direction and speed depend on the position and movement of synoptic systems. In all seasons, winds often freshen to gale force from the north and northwest, ahead of approaching fronts. They then swing abruptly southwest behind the front at similar speeds and abate until they again freshen ahead of the next front. Wind speeds are typically in the range of 10-30 km/h, with maximum gusts reaching 100 km/h. Over the winter, their direction is predominantly from the west, especially when stronger winds occur.

Average annual rainfall along the coast ranges from approximately 500 to > 1,000 mm, being dependent mostly on proximity to major rainfall affecting features such as the Strzelecki Ranges and the Great Dividing Range.

Currents within Bass Strait include components due to tides and to wind stress. In the open waters, tides generally result in elliptical movement of water particles. Tides ebb and flood into both sides of Bass Strait simultaneously, with higher velocities in the relatively constricted waters to the north and south of the main Bass Strait islands (Black and Hatton 1992). Tidal streams are dominated by the lunar tidal constituent (M2), which has a period of 12.4 hours. Tidal movements in eastern Bass Strait are predominantly in a northeast-southwest orientation.

Wind driven currents in eastern Bass Strait tend to be constrained by the topography to run parallel with the coast and thus the dominant directions are along the north-east to south-west axis. The currents are caused by the direct influence of weather systems passing over the Strait (wind and pressure-driven currents) and the indirect effects of weather systems passing over the Great Australian Bight, which cause shelf waves and coastal-trapped waves to enter the Strait.

Waters of Bass Strait are generally well mixed but weak stratification sometimes occurs in calm summer conditions through surface warming. Occasionally, mixing and interaction between varying water masses leads to variations in water temperature horizontally and changes in temperature profiles. An effect of boundary mixing is a phenomenon known as the Bass Strait cascade, which occurs when colder, more saline Bass Strait water flows down the continental slope beneath the less saline Tasman Sea water (Tomczak 1985).

Temperatures in the sub-surface waters of central Bass Strait range from about 13°C in August/September to 19ºC in summer (decreasing to 11-12ºC under the influence of the localised, nutrient rich, coastal upwellings that are known to occur in mid to late summer).

Bass Strait is a high-energy environment exposed to frequent storms and significant wave heights. The highest wave conditions are generally associated with strong west to southwest winds caused by the eastward passage of low-pressure systems across Bass Strait. Monitoring of wave climate has been undertaken within the Gippsland Basin (at the Kingfish B platform) since 1977. Storms may occur several times a month resulting in wave heights of 3-4 m or more. In severe cases, southwest storms can result in significant wave heights of greater

than 6 m.

It should be emphasized that continual monitoring of weather patterns is extremely crucial to avoid being caught in a sudden storm. Additional weather information is available in the Environment Plan.

Several sources of weather information are available which include weather fax data and Coastal Radio Station broadcasts for weather prognosis/warnings. In addition to this the vessel will subscribe to the WNI Oceanroutes weather forecasting service and have access to a dedicated website and also receive regular, site specific forecasts by email as part of this service.

Cyclone Alert Procedures

The following phases are used to define the sequence of events in coping with cyclonic conditions.

1 Blue – Safe 

A cyclone exists, but is more than 1000 nautical miles from location.

Steps to be taken: No immediate action is required at this stage other than monitoring weather reports and plotting the cyclone's path.

2 Green – Safe 

A tropical cyclone has been reported in or approaching the area, 900-1000 nautical miles away.

Steps to be taken: Monitor cyclone movement.

3 Yellow - Prepare

A tropical storm is developing within or entering a circle with a 900 nautical miles radius, but more than 500 nautical miles from the prospect.

Steps to be taken:

a. Secure all loose items
b. Monitor cyclone movement

4 Red - Danger 

A tropical storm is developing within or entering a circle with a 500 nautical mile radius from the prospect.

Steps to be taken:

a. Take evasive action
b. Take decision to recover equipment
c. Move to shelter

Note:

If a tropical storm could develop into a cyclone, the key words are:

'Likely' meaning a greater than 50% chance of development;

OR

'Unlikely' meaning less than 50% chance of development.

Historically, 80% of developing tropical storms become cyclones.

If likely development is reported within 900 nautical miles of operating centres the plan is to proceed as if it were a cyclone. If unlikely development is reported within 900 miles, phase green would be brought into force.

More information on prevailing weather patterns is obtainable in the Australia Pilot, a copy of which is available onboard. The decision to recover equipment and proceed to shelter or take evasive action ultimately lies with the Master of Western Trident.

Another source of weather information, reported to be very accurate in it's forecasting by other seismic vessels in the WesternGeco fleet, can be found at the following website:

http://www.buoyweather.com/

2.10. Interruption to Operations by Environmental Activists

WesternGeco considers the possibility of protests by environmental activists during Hazard and Risk assessment Workshops. Western Trident has in place a contingency plan for dealing with interruption to operations by third party pressure or direct action groups; Reference: "Guidelines and Procedures, Disruptive Action to Geophysical Survey Operations".

The Operations Manager is responsible for co-ordination with the ENI Survey Project Manager to establish and agree on response procedures in such situations.

The Master will ensure that all situations are controlled in accordance with Maritime Law, rules, and regulations, both national and international.

The Party Chief is responsible for the co-ordination of onboard seismic personnel and for direct liaison with onboard client representatives.

2.11. Timeshare

No other seismic operations are known to be planned in the vicinity at this time.

2.12. Job Book

SuperVISION is a web-based project monitoring service to provide clients with an efficient and secure method for monitoring the progress of acquisition and processing projects performed by WesternGeco.

The Job Book is a group of documents that are stored in SuperVISION. The following sections below are contained in the SuperVISION job book and may be quickly viewed by employees and clients requesting special access to SuperVision.

01 Survey Objectives

02 AcquisitionParameters

03 Positioning
04 Source
05 TechSpecs
06 SeisQC
07 SeisProc
08 Deliverables
09 JobStartChecklist
10 Preplots
11 RevisionHistory
12 Binning

3. Contract QHSE Management System

This section describes the QHSE Management System to be implemented throughout the duration of the Contract.

The structure of this section has been kept identical to, and complements, the WesternGeco (OFS) QHSE-MS as described in the OFS QHSE Management System and supported by the SLB QHSE Standards.

3.1. Leadership and Commitment

All Party Managers and Vessel Managers shall perform a self-assessment using leadership questionnaires which are reviewed by their immediate supervisor at 6 monthly intervals. As part of the Crew HSE plan, the vessel's status shall be assessed using " A Guide to Assessing the QHSE Management System and Developing a QHSE Improvement Plan", in January of each year and forward the results to the next higher level of management by 31. January (ref. Standard SLB-QHSE-S007 or Intouch case id: 3312250)

3.2. Policies and Objectives

3.2.1. Policies

WesternGeco and Schlumberger OFS policies can be found on the WesternGeco Web Home Page and the OFS QHSE hub.

The WesternGeco QHSE and OFS Drug and Alcohol policies are also displayed in prominent locations around the Vessel. The support vessel will also be provided with copies of the OFS Drug and Alcohol policies.

3.2.2. Objectives

WesternGeco Marine QHSE Objectives are set annually and known as the WesternGeco Marine QHSE Plan. These objectives are maintained and reviewed quarterly and are stored on the Vessel Web site. Individual objectives are set for personnel which shall include QHSE goals, reviewed quarterly and as part of the annual appraisal process.

The site specific QHSE objectives are broken down to supervisory and individual levels. These objectives are focused on personal achievements in terms of risk identification and reporting, active involvement in safety inspections and audits and attaining higher levels of QHSE competence through defining Personal Training Sets. Objectives are reviewed quarterly.

3.3. Organization, Responsibilities and Resources

3.3.1. Organization Responsibilities

Job descriptions for all key personnel on Vessel are available onboard and stored on the Vessel Web site, including where relevant, the Marine Administrator. The WesternGeco references for all seismic job descriptions are located on the Marine Personnel Web site.

Job descriptions for the Maritime personnel are also included in the Job Descriptions for Vessel Crew located on the web and also available onboard.

Responsibilities of Client personnel involved in the Contract, where relevant, shall be included in the appendices of this Contract Plan.

3.3.2. Organizational Structure

Organization charts describing the structure of the business management and the HSE management of this survey, showing direct lines of accountability and reporting paths on Operational and Safety issues are included in Appendix 7.1.

3.3.3. Training & Competence

Standards for competence assurance of the seismic personnel are defined in the LMS training program and OFS training catalogue. Standards for Maritime personnel are defined by STCW 95.

HSE training requirements for all personnel onboard the Vessel during the Contract are defined by the OFS QHSE minimum training augmented with the Marine HSE Training Matrix located on the Marine QHSE Web site.

"STOP" (**S**afety **T**raining and **O**bservation **P**rogram) unsafe act auditing program and **"SIPP"** (Schlumberger Injury Prevention Program, which addresses **S**tepping, **H**andling and **L**ifting) training schemes are in place on the Vessel.

Safety and Emergency training drills shall be carried out as specified by the MQSMS Emergency Preparedness Procedure. A detailed program for the drills shall be documented using the form Drill Program

Medical requirements for all personnel onboard the Vessel are defined in WesternGeco standard WesternGeco_Marine_Health_and_Medical_Standard

Unless the QHSE training modules are constituent parts of LMS, the Vessel Captain maintains the records of, and monitors the HSE training of seismic and maritime crew and reports this to the Regional Office.

3.3.3.1. QHSE Passports

All WesternGeco personnel are issued with a Schlumberger Oilfield Services QHSE passport (OFS Standard SLB-QHSE-S005 or Intouch case id: 3312250).

3.3.4. Information management

All functions on board the ***Western Trident*** have access to information via the WesternGeco Intranet. E-mail is used extensively for information exchange on a daily basis.

InTouchSupport.com is the main repository for all technical and operational information and is used actively to obtain current and validated content.

All key personnel and supervisory positions being involved in the Project have personalized Quest subscription criteria entered as part of their Quest configuration. Through this subscriptions system, they are notified; near real-time - of accidents, near-accidents and hazardous situations taking place in WesternGeco's world-wide Marine Operations.

3.3.4.1. Contact Numbers

These can be found in **Appendix B**.

3.3.4.2. QHSE meetings

- **Operations QHSE Meeting**

  This shall be held at the Regional headquarters and shall include the following subjects:

Review of safety reports and statistics from the field, including but not limited to:

- Monthly Safety Report
- Accident reports
- Incident or near accident reports
- Vessel safety statistics

Interval: Monthly

Location: Regional Office

Organized by: Regional Vessel Manager

Fixed members (as available):

- Regional Vessel Managers
- Marine QHSE Manager/Supervsior
- Regional Marine Administrator

Minutes of the meeting shall be taken and published.

- **General QHSE Meeting**

This meeting shall be held onboard the Vessel and shall include the following subjects:

Review of the implementation of the Contract Plan, review of incidents and near accidents, review of audit and inspection reports, review of drills, feedback from Operations QHSE Meetings, findings and recommendations from Vessel's LPT Meetings

Interval: 2-Weekly

Organized by: Captain and/or Party Manager

Fixed members:

- Maritime and Seismic Crew on duty
- Trainees
- Client representatives
- Sub-contractors
- Visitors

Minutes of the meeting shall be taken and published. Participants shall sign that they have attended.

- **Loss Prevention Team (incorporating PEC)**

The organization of the LPT is as described in SLB QHSE Standard S009 or Intouch case id: 3312250.

The LPT shall meet on a monthly basis. Minutes of the meeting are posted on the vessel notice board for crew review and any important points or recommendations are brought up in the General QHSE meeting.

- **Toolbox HSE Meetings**

Toolbox meetings shall be held by every Vessel department on an, "as necessary basis". Further toolbox meetings shall be held before the commencement of any unusual operations or whenever specific problems arise. Meetings shall also be held after any incident or accident to disseminate information.

Subjects: Briefing or review of procedures for specific operations, introduction for new personnel, discussion of near accidents or hazardous conditions for HSE. (Active use of Hazard Catalogue/RACS)

Interval: Ad hoc

Location: Work site

Organized by: Accountable party for subject operation.

Fixed members:

- Vessel department members

All action points from all meetings, unsafe acts and audits shall be added to the Remedial Work Plan.

3.3.5. Documentation

InTouchSupport.com contains information relevant to the type of operations being performed. Documentation such as Manuals, Procedures, Standards and Work instructions residing inside InTouchSupport.com are considered controlled material and content. When such documents are printed, they are considered "uncontrolled" contents.

3.3.6. Standards

Applicable standards are defined in:

OFS QHSE Management System

All SLB QHSE standards or Intouch case id: 3312250

IMO International Safety Management Code.

SOLAS 1974.

MARPOL 1973/78.

STCW 95.

The OFS QHSE Management system is also designed to be compliant with the following guidelines:

E&P Forum, 1993b, Exploration and Production (E&P) Waste Management Guidelines, Report No. 6.27/183.

E&P Forum, 1993c, Guidelines on Permit to Work (PTW) Systems, report No.6.29/189

E&P Forum/IAGC, 1993d, Safety Training Guidelines for Geophysical Personnel, Report No.6.27/183

E&P Forum, 1994a, Guidelines for the Development and Application of Health, Safety and Environmental Systems, Report No. 6.36/210

E&P Forum, 1995, Guidelines for the use of Small Boats in Marine Geophysical Operations, Report No. 6.42/220

IAGC, 1997, Marine Geophysical Operations Safety Manual, Eighth Edition

IAGC Environmental Manual for Worldwide Geophysical Operations - On CD ROM Only

International Agreements and Conventions

- IMO International Maritime Organisation.
- ISM International Safety Management Code
- SOLAS 1974.
- MARPOL 1973/78.
- STCW 95.
- China Australia Migratory Birds Agreement (CAMBA).
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).
- Convention on Wetlands of International Importance Especially as Waterfowl Habit (RAMSAR).
- United Nations Framework Convention on Climate Change.

- Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer.

Commonwealth Legislation

- Australian Maritime Safety Authority 1990
- Environment Protection and Biodiversity Conservation Act, 1999
- Environmental Protection (Sea Dumping) Act 1981
- Historic Shipwrecks Act, 1976
- Navigation Act, 1912
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983
- Petroleum (Submerged Lands) Act 1967, and delegated legislation;
  - P(SL) Acts Schedule – Specific Requirements as to Offshore Petroleum Exploration and Production 1995
  - Petroleum (Submerged Lands) (Management of Environment) Regulations (1999)
  -

Victorian Legislation & Victorian Department of Natural Resources and Environment (DNRE)

- Environment Protection Act, 1970
- Environment Protection (Prescribed Waste) Regulations 1998
- Marine Act, 1995
  Gives responsibility for combating oil spills in Victorian Waters to the Marine Board of Victoria (MBV). The MBV has "Primary Agency" status under the National Plan for the Combat of Oil Spills at Sea (NATPLAN)
- Pollution of Water by Oil and Noxious Substances, 1987

3.4. Contractor & Supplier Management

3.4.1. Evaluation, qualification and selection

When selecting sub-contractors, WesternGeco's preference shall be given to companies with functioning and active QHSE Management Systems and programs.

Suppliers and contractors are managed to ensure that their products and services meet applicable QHSE standards as defined in SLB Contractor & Supplier Management Standard SLB-QHSE-S012. WesternGeco Line Management is responsible for compliance with this standard.

<Chase Vessel Contractor Name> is the key sub-contractor involved in this project. **<Chase Vessel Contractor Name>** has a standing Supply Time 89 charter agreement in place with an annex "d" to cover QHSE expectations during the charter agreement. A Bridging Document has been written that outlines how the supply vessel will be managed for the project. The following documents have also been issued to the support vessel: Support Vessel Manual M3MAQ/M001 and Charter and Operation of Support Boats Standard M3MAQ/S003.

Total Marine Services was contracted after a pre selection audit conducted by the Fleet Personnel Manager on August 1st, 2001. Total Marine Services have written an HSE Management Plan and bridging document to interface their QHSE system with that of WesternGeco. The Vessel Supervisor reporting to the Operations Manager is responsible for the pre-qualification process.

3.4.2. Management

A pre-start briefing shall be held with all subcontractor representatives and senior personnel prior to the survey start-up. Where sub-contractor personnel are co-located with WesternGeco personnel (e.g. contract maritime staff), they shall be integrated into the WesternGeco QHSE Management System.

Western Trident Captain will be responsible for supervising the onboard QHSE integration of the Total Marine Services maritime crew. Western Trident Captain will be responsible for supervising and reviewing supply vessel movements in the survey area and for including supply vessel weekly reports in Safety Net and to collect all support documentation for the supply vessel as outlined in the supply vessel-bridging document.

Key Performance indicators are used to measure the sub-contractor's performance.

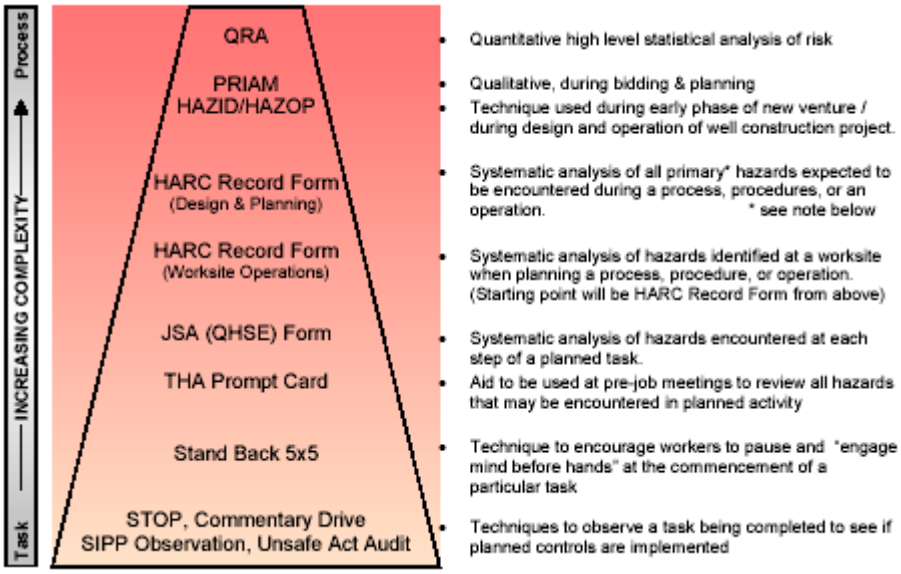
3.5. Risk Management

3.5.1. Definitions

The definitions used shall be as defined in the OFS Management system and as in the SLB QHSE Standard S002 or Intouch case id: 3312250.

3.5.2. Risk Management Process

WesternGeco enforces the "HARC" standard (SLB-QHSE-S020) to manage risk in the workplace.
HARC or in full **Hazard Analysis and Risk Control** describes the main methods for analysis and control of risk and are summarized in the diagram below.



At the design and implementation stage of a new project it is critical for all new risks to be identified and controlled. The Top 10 Major risks for this crew & project have been evaluated and mitigated to be "as low as is reasonably practical" (ALARP) by use of the HARC record form and are recorded within section 5 of this Contract Plan. Additionally where there is value in sharing the analysis with other crews the HARC records are stored in the Schlumberger "InTouch" system

For lower levels risks on the crew, a JSA (Job safety analysis) of a suite of tasks related to a specific activity are normally performed and used to develop comprehensive procedures and work instructions.
For "non routine" tasks or when operational variations might arise to a standard activity, crews will conduct a

Task Hazard analysis (THA) to determine what new risks might arise and discuss the agreed controls / mitigations at a toolbox meeting with all involved crew prior to the task commencement.
o specifically reduce risks and subsequent injury caused by human behavior, the crew make full use of behavioral based programmes such as “Take 5 for injury prevention” and promote good practice by use of SLB in-house training in SIPP (Schlumberger Injury Prevention Programme) and other self auditing and observation methods, such as STOP.

3.5.3. Prevention & Mitigation measures

Controls and Recoveries identified during the process of risks management are applied to minimize the exposure to the risk of loss and to reduce the severity of any loss should it occur.

3.5.3.1. Personal Protective Equipment (PPE)

PPE shall be provided onboard the Vessel for all personnel, in line SLB QHSE Standard S003 or Intouch case id: 3312250. This standard has a Marine appendix specifically detailing additional PPE requirements for Marine. More detailed PPE survival suit information can be obtained from the engineering standard: Life Preserver.

3.5.3.2. Permit To Work (PTW)

A permit to work system consistent with E&P Forum, 1993c, Guidelines on Permit to Work (PTW) Systems, Report No. 6.29/189, shall be in place covering

- the use of hot work equipment (welding, cutting, burning)
- confined space entry and use of equipment in confined spaces
- working aloft or at height
- work on high pressure systems, and
- electrical systems.

A lock out/tag out procedure (called “Isolation” in the E&P Forum PTW Guidelines) shall be in place for all stored energy systems (high pressure, electrical, gravitational, mechanical, etc.) to enable maintenance workers to positively lock the system out (in a guaranteed safe configuration) and hold the key to the lock, while informing others (with the tag) why the system is locked out and when it will be restored.

The MQSMS’ Special and Critical Shipboard Operations defines what operations should be governed and controlled by a PTW system.

WesternGeco Marine Operations shall use the OFS PTW standard.

This standard is not written specifically for vessel operations so additional controls are instituted as per the requirements prescribed in the Special and Critical Ship board Operations section 6.7 of the MQSMS.

3.5.4. Management of temporary change

All changes to agreed plans and Standards shall be approved at the appropriate level in the company. This process is defined in SLB QHSE Standard S010 or Intouch case id: 3312250.

3.5.5. International Ship and Port Facility Security Code (ISPS)

The ISPS Code is a mandatory requirement as detailed in SOLAS Chapter XI – 2 effective from 01 July 2004. WesternGeco has adopted both Part A and B of this code and implemented the recommendations therein. Each vessel has in place the Ship Security Plan (SSP) and has implemented strategies as required for the 3 levels of security. All persons working on board or requiring access to the vessel will comply with all instruction pertaining to this code as advised by the Vessel Security Officer (VSO) or Company Security Officer (CSO).

Levels of Security.

SECURITY LEVEL ONE

The level for which minimum appropriate protective security measures shall be maintained at all times.

SECURITY LEVEL TWO

The level for which appropriate additional protective security measures shall be maintained for a period of time as a result of heightened security risk of a security incident.

SECURITY LEVEL THREE

The level for which further specific protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target

CSO (Company Security Officer)

Person assigned by the company to ensure that SSA's are carried out, SSP's developed and implemented and gains approval. He also has to act as liaison with PFSO's and SSO's He must support the Master in the accordance with the code. The Company Security Officer is Martin Anderson.

SSO / VSO (Vessel Security Officer)

Person on board ship assigned by the company and accountable to the Master holding the responsibility for the ships security including the implementation and operation of the SSP. He liaises with the CSO and PFSO. The VSO is generally the Chief Officer unless advised otherwise.

WesternGeco Standards and Policies associated with the ISPS Code.

SL Employee Security Policy and SL IT Security Policy

SL QHSE Standard S002, Employee and Asset Security, SLB QHSE Standard S002, HSE Reporting, SLB QHSE Standard S020, HARC standard, WG Marine Contingency Manual, M3ISM-M003 2.14(Piracy), WG Procedure for Third Party Activists

Acronyms associated with the code.

CSO:- Company Security Officer

SSO / VSO:- Ship Security Officer. In WG this will be VSO so as not to create confusion with the SSO in terms of our IT Security System

SSA:- Ship Security Assessment

SSP:- Ship Security Plan

CG's:- Contracting Governments

PFSO:- Port Facility Security Officer

DoS:- Declaration of Security

3.6. Design & Planning

3.6.1. Asset Integrity

All quality and safety critical equipment is maintained as per schedules and routines detailed in the Planned Maintenance System (PMS). The equipment is divided into three main categories, - engine department, deck department and back-deck department. The PMS schedules are defined for major and critical equipment and it's use understood by all involved parties.

3.6.1.1. Design and Purchase

QHSE requirements are taken into consideration when new equipment or products are designed or

purchased. WesternGeco Technology Domains are the owners of equipment standards. Quality or Safety critical items will be obtained from suppliers that are qualified by WesternGeco the procurement department.

3.6.1.2. Modifications of designs.

No modifications of designs or maintenance schedules will be implemented unless specially approved by the design authority of subject equipment. If design or process limits must be exceeded, an exemption request shall be forwarded to the appropriate level of management (ref. SLB QHSE Standard S010 or Intouch case id: 3312250)

3.6.2. Processes

3.6.2.1. Manual of Permitted Operations

The MOPO is a table that defines when activities, which are safety critical, can take place and when they must not due to conditions or because another activity is in progress.

The MOPO for Small Boat Operations can be found in the 'Small Boat Operations Manual'

Condition	Cable deployment / retrieval	Gun arrays deployment / retrieval	Diverter deployment/ recovery	Passing obstructions < 500M (All with OIM approval)	Entering < 12M Water Depth	Bunkering at sea	Helicopter operations
Hours of darkness	Normally acceptable	Normally acceptable	Normally acceptable	Normally acceptable	Normally acceptable	Normally acceptable	See note
Sea state >3.5m	only if guard boat is available	only if guard boat is available	only if guard boat is available	See note	Not acceptable	See note	See Pitch & Roll
Sea state >6m	Not acceptable	Not acceptable	Not acceptable	Not acceptable	Not acceptable	Not acceptable	See Pitch & Roll
Pitch, roll or heave exceed helicopter operators spec.	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not acceptable
Visibility < 500m	only if guard boat is available	only if guard boat is available	only if guard boat is available	See note	Not acceptable	Not acceptable	Not acceptable
Visibility < 3Km	Normally acceptable	Normally acceptable	Normally acceptable	Normally acceptable	Normally acceptable	See note	Normally acceptable
MOB boat inoperative	only if guard boat or FRC is available	only if guard boat or FRC is available	only if guard boat or FRC is available	Normally acceptable	Normally acceptable	Normally acceptable	only if guard boat or FRC is available
Passing obstruction < 500M	Not acceptable	Not acceptable	Not acceptable		Normally acceptable	Not acceptable	Not acceptable
MOB boat deployed	Normally acceptable	Normally acceptable	Normally acceptable	See note	Normally acceptable	See note	See note
Emergency training	Normally acceptable	Normally acceptable	Normally acceptable	Not acceptable	Normally acceptable	Not acceptable	Not acceptable
Bunkering at sea	See note	See note	See note	Not acceptable	Not acceptable		Not acceptable
Engines or back up systems on Vessel on maintenance	Normally acceptable	Normally acceptable	Normally acceptable	Not acceptable	Not acceptable	Not acceptable	Normally acceptable
Helicopter operations	Normally acceptable	Normally acceptable	Normally acceptable	Not acceptable	Normally acceptable	Not acceptable	

Note - routine procedures and Work Instructions do not cover this activity. Before undertaking this activity a Risk Assessment must take place to ensure that all effective Controls and Recovery Measures are in place, approved by Captain and Party Manager, and a Toolbox meeting of all involved parties completed. Captain has over-riding authority.

3.6.3. Planning

3.6.3.1. Yearly Plan

The Marine and Vessel specific QHSE Plans with a list of objectives and a plan on how these objectives will be achieved, are communicated to all personnel and available on the vessel.

3.6.3.2. Contract Plan

The Contract Plan is an integral part of the operation. It is a controlled document and is updated and revised as necessary.

The Contract Plan is prepared by the Operations Business Team in co-operation with the Vessel Captain and Party Manager and approved by the Vessel Manager.

There shall be a continuous review of critical information such as contact lists, contingency and emergency plans, risks and HDS's, etc. and a formal review of the whole Contract Plan in the Planning and Mobilization phases of any new Contract.

3.6.3.3. Bridging Documents

Bridging documents exist to connect the QHSE Management Systems of our clients and contractors with the Project specific QHSE MS as detailed in the Contract Plan document. The bridging documents for this survey were developed with the participation of relevant personnel to identify similarities and differences between systems and offer methods so that the different systems can co-exist be used effectively by the involved parties.

3.6.3.4. Daily Operations Plan (DOP)

The Party Manager defines the daily operations plan. It is established in close co-operation will all departments on board taking into consideration the nature of the area, the lay-out of the project, weather forecasts, planned maintenance or supply operations, fishing and shipping activities, other seismic operations etc. The daily operations plan and updates to it, are communicated to all concerned parties by the Party Manager.

The DOP is used during all phases of the Contract including in-port mobilization and demobilizations – as applicable.

3.6.3.5. Health Planning

Refer to SLB QHSE Standard S006 or Intouch case id: 3312250 and the Health Hub.

For country specific information on travel, food, water, diseases, approved hospitals, security, etc, refer to Schlumberger 'Hub' travel page.

All crew shall have up to date vaccinations as per WesternGeco standard WesternGeco_Marine_Vaccination_Standard.

All crew shall have up to date Medical as per standard WesternGeco_Health_and_Medical_Standard

3.6.3.6. Environmental Planning

Details regarding Environmental Planning for this survey can be found in the Apache Environment Plan.

3.6.3.7. Waste Management

It is a legal requirement (MARPOL 1973/78) that all waste onboard the vessel should be disposed of in an environmentally friendly manner. A record of all disposals of all oil waste products should be kept in the Oil Record Book. Other disposal of waste should be recorded in the Waste Disposal Register.

An example Waste log Form can be obtained from the MQSMS.

3.6.4. Emergency Response

The following Contingency and Emergency Response Plans are in place on the Vessel and/or Divisional Office and shall be covered during the HSE induction of seismic and maritime crew members, and posted in a prominent position e.g. on Bridge or Instrument Room :

- Emergency Contact Numbers
- Contingency group
- Medical Evacuation
- Vessel Emergency
- Fatality
- Oil Spill (Shipboard Oil Pollution Emergency Plan, SOPEP)

Other response plans shall be put in place as required, e.g. Environmental Activists. The primary responsibility for all emergencies lies with the Vessel Captain contacting the Coastguard and/or medical facilities. From there all appropriate assistance can be called upon.

These plans are included in the appendices.

3.6.4.1. Emergency Contact Numbers

All appropriate emergency contact numbers should be posted in a prominent position on the bridge so that they are readily available and easy to access if required.

The responsibility for emergency response lies with WesternGeco. It is important, however, that the interface between WesternGeco, the Client, and Chartered Vessel owners is thoroughly understood and managed.

The WesternGeco Marine Vessel Manager is responsible for verifying the suitability and completeness of the emergency procedures. The Vessel Captain is responsible for ensuring that the emergency response facilities and materials as specified in the emergency procedures are available and fit for purpose at all times.

The Captain and/or Party Manager are responsible for testing the Plans and Emergency Response Numbers within 24 hours of departure from port.

All Emergency Contact Numbers are located in Appendix B

3.6.4.2. Contingency Group

The "contingency group" is called in the case of an emergency of severity scale "Catastrophic" or "Major" (reference SLB QHSE Standard S002 or Intouch case id: 3312250).

The contingency group is members of WesternGeco or OFS shore management nominated for the purpose. Whilst the Captain deals with the emergency onboard, the Party Manager should call any member of the contingency group, who in turn shall then become responsible for calling all other members of the contingency group if necessary.

Contingency Group members and Contact Numbers can be found in Appendix A4

3.7. Implementation and Monitoring

3.7.1. Performance review

Date enabling the production of Key Performance Indicators (KPIs) are captured by the Introspection and Quest tools. The Project Specific Gainshare and SafetyNet tools provide a near real-time update on progress vs. plan on selected Key Performance Indicators (KPIs).

QHSE key performance indicators shall be reviewed by the Operations Business Team on a monthly basis.

3.7.2. Incident reporting, investigation and review

Accident/Near Accident and Hazardous Situation reporting and investigation shall be conducted according to:

- OFS Standard (SLB-QHSE-S002 or Intouch case id: 3312250)

Follow up shall be conducted through the Remedial Work Plan. The RWP is maintained in the QUEST system and regular reviews are held onboard and with onshore management.

All accidents shall be recorded into the QUEST database.

3.7.2.1. Unsafe Act Reporting

The **'STOP'** **S**afety **T**raining and **O**bservation **P**rogram shall be implemented on the Vessel. **'STOP'** is a program developed by DuPont and it is licensed to users on a commercial basis.

The **'STOP'** program aims to train personnel to observe, correct, prevent and report unsafe acts systematically.

A target for individual reporting of RIR plus Unsafe Acts shall be set annually in the Vessel QHSE Plan. The QUEST system shall be used to record STOP events.

3.7.2.2. End of month reporting

QHSE monthly reports are submitted in the 1st 24hrs of each month in SafetyNet. Most of the data in the report is linked automatically from QUEST, but the Captain or Party Manager shall review and edit the statistics as required.

3.7.3. Inspections

Vessel management shall carry out a regular formal inspection on each Vessel department. The target shall be one inspection every 2 weeks.

The crew and supervisors shall carry out vessel departmental cross inspections. The Party Manager shall schedule the cross inspection program. The target shall be one inspection per Vessel department per month.

Any action points shall be added to the Remedial Work Plan

3.7.4. Corrective action and continuous improvement

All accidents shall be recorded into the QUEST database.

Accident/Near Accident and Hazardous Situation reporting and investigation shall be conducted according to: OFS Standard OFS-QHSE-S002

Follow up shall be conducted through the QUEST Remedial Work Plan (RWP). The RWP will document

corrective action, responsibility and targets for closure and completion date. QUEST will automatically e-mail the person responsible for the corrective action and send a reminder if the corrective action is not closed before the completion date.

Accident/Near Accident, Hazardous Situation reports and the RWP are reviewed by the Loss Prevention Team (LPT) and at Vessel Operation Meetings.

3.7.5. QHSE recognition programs

A Quality & Safety award scheme shall be run as per WesternGeco guidelines, all awards and points awarded shall be recorded in personal QHSE passports.

3.7.6. Records

The following records shall be entered in either QUEST or Introspection where they are available for further analysis as required.

- Accident reports (QUEST)
- Near Accident/Hazard reports (QUEST)
- Unsafe act reports (STOP) (QUEST)
- QHSE Inspection/Audit reports (QUEST)
- Minutes of QHSE meetings (QUEST)
- QHSE inductions (Introspection) (file check-lists separately)
- Training records (until further notice; Excel spreadsheet kept by Captain)
- Small boat launches (Introspection)
- Toolbox meetings (QUEST)
- Helicopter movements (Introspection)
- Drills (Introspection)
- Waste Disposal Register (until further notice, Excel spreadsheet kept by Captain)

3.8. Audit and Review

The Vessel Manager will arrange for and participate in an audit of the implementation and effectiveness of the QHSE management system as outlined in this Contract Plan at least once every 12 months. Additionally an OFS audit will be organized at no more than 36 months intervals.

Inspections, audits and reviews are an essential element of the WesternGeco (OFS) QHSE Management System.

They shall be used to evaluate the adherence to, and develop the 'continuous improvement cycle', as well as monitoring the adequacy and effectiveness of the QHSE Management System.

Reference :

- OFS QHSE Management System Audit Standard (SLB-QHSE-S007 or Intouch case id: 3312250)

3.8.1. Audits

A QHSE Management System audit was conducted on the Trident from 17th to 21st May 2004. The QHSE/ISM audit report is available on request.

The Loss Prevention Team (LPT) schedules departmental cross audits. These cross audits are used to evaluate the adherence to, and develop a continuous improvement cycle, as well as to monitor the adequacy and effectiveness of the QHSE Management System.

Reference: OFS QHSE Management System Audit Standard (SLB-QHSE-S007 or Intouch case id: 3312250)

3.8.2. Reviews

The Contract Plan QHSE-MS shall be reviewed as deficiencies are highlighted through audits, accident reports, hazard reports, and whenever the Vessel is moving to a new prospect.

4. Activity Catalogue

The following table illustrates the processes involved in this project, and what Major Risks have been identified to be associated with the activities at each stage of the process. A list of "best practices" that describe the recommended way to manage these activities can be found at the following WesternGeco web site and through the InTouch portal.

Activity Phase	Main Risk	Main Hazards
Mobilisation / DeMobilisation	Equipment	Streamer ballast
	Equipment	Logs / Traffic / Restricted area for deployment and recovery
	Equipment	Fishing gears
	Equipment	Working in variable current, shallow waters
	Personnel	Piracy
	Personnel	Small boat work at front ends of streamers
	Personnel	Monowing handling
	Equipment	Monowing collapse
	Personnel/Equipment	Guns handling
	Personnel/ Equipment	High air pressure
	Personnel/ Equipment	Weather
Maintenance	Environment	Environmental impact
	Personnel/ Equipment	Weather
	Equipment	Streamer work stacking etc
	Equipment	Logs / Fishing gears/ Traffic / Restricted area for deployment/recovery / shallow waters
	Personnel	Monowing handling
	Personnel/ Equipment	Guns handling
	Personnel/ Equipment	High air pressure
	Personnel	Marine life attacks
Acquisition	Equipment	Monowing collapse
	Equipment	Logs/ Fishing Gears
	Equipment	2-Boat undershooting
	Equipment	Fishing activity
	Equipment	Ships traffic/Ships at anchor
	Personnel	Piracy
	Personnel/ Equipment	Weather
Logistics	Personnel/Equipment	Supply vessel operations
	Personnel/Equipment	Crane operations including reels
	Personnel	Helicopter operation/Vessel to vessel transfer
	Personnel/ Equipment	Weather

5. Hazard Catalogue

The table below lists HARCs for the activities involving major risks for the vessel:

1. HARC TDT-001-Crane & Lifting Operations
2. HARC TDT-002-Stepping, Handling & Lifting
3. HARC TDT-003-Launch and Recovery of Work Boat
4. HARC TDT-004-Tailbuoy Deployment
5. HARC TDT-005-Streamer Deployment
6. HARC TDT-006-Miniwing Deployment & Recovery
7. HARC TDT-007-Monowing Deployment
8. HARC TDT-008-Gun Deployment & Recovery
9. HARC TDT-009-In-sea Lead-in Transfer
10. HARC TDT-010-Bunkering at Sea
11. HARC TDT-011-Helicopter Operations
12. HARC TDT-012-Weather
13. HARC TDT-013-Working Aloft Navigation Mast
14. HARC TDT-014-MWA Handling
15. HARC TDT-015-Instrument Room Power Failure
16. HARC TDT-016-Data Security
17. HARC TDT 017-Reel Transfer from B deck to Crane Deck
18. HARC TDT-018-Techno Float Deployment
19. HARC TDT-019-Record Form Yokohama deployment
20. HARC TDT-020-Record Form TX Valve Replacement
21. HARC TDT-021-Mooring Lines for Resupply
22. HARC TDT-022-Streamer Recovery & Deployment during Rough Weather
23. HARC TDT-023-Section Change
24. HARC TDT-024-Insertion of Tire Frame between two Aluminum Wheels
25. HARC TDT-025-Mass Transfer of solid streamer
26. HARC TDT-026-Port Calls
27. HARC TDT-027-Small Boat Transfer
28. HARC TDT-028-Hotwork D Deck

6. Remedial Work Plan

The Remedial Work Plan (RWP) is a dynamic document and shall be updated regularly as action points are cleared and found. The main RWP is found in Quest under the location's name. The latest version shall be available on the Vessel Network.

7. Work Instructions

Work Instructions are dynamic documents reviewed and updated regularly based on audit, review, toolbox meetings, risk assessment etc. etc. Work instructions detailing the workflow and actions involving equipment or design specific to one particular vessel, will as a rule be maintained and controlled locally by heads of departments. Work instructions detailing the workflow and actions involving equipment and designs that are found on many WesternGeco vessels, will be maintained and controlled centrally by the Global Operations Support groups.

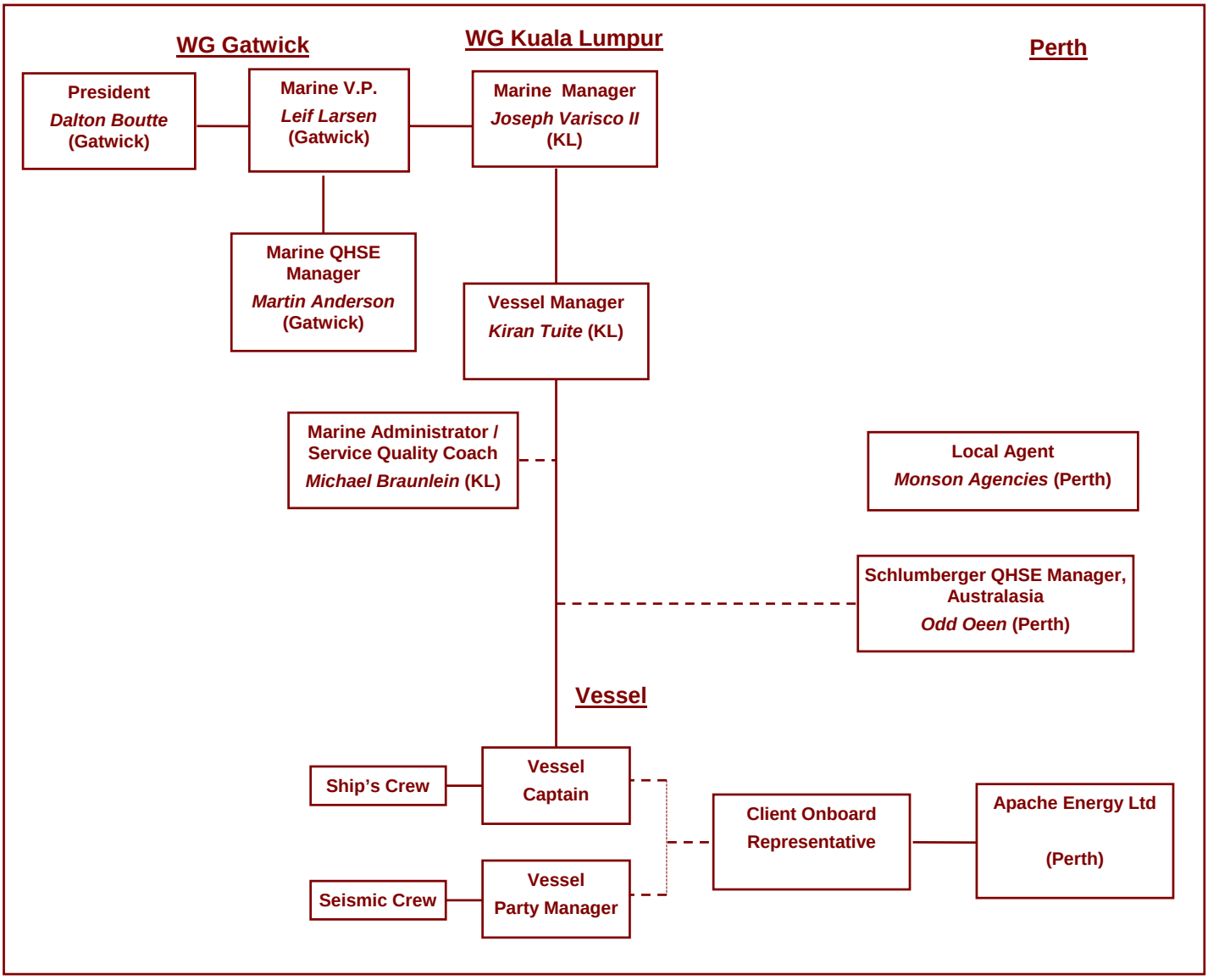
8. Job Descriptions

All positions have job descriptions. A summary web page linking to all job descriptions is available from the Marine personnel home page.

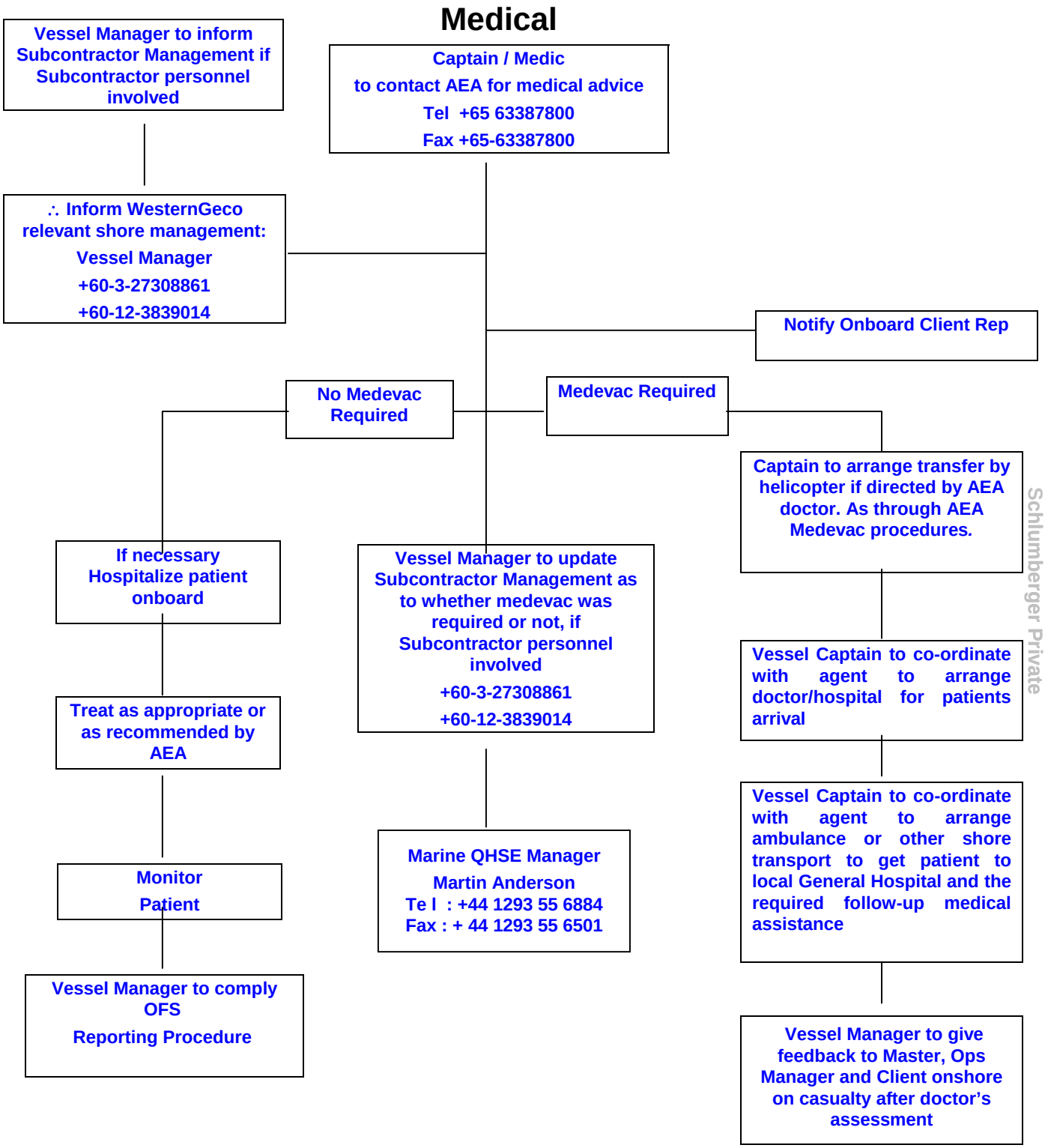
9. Appendices

A. Organization Charts

A.1 Project Safety Organization



A.2 Medical Emergency Response Plan



∴ In the event of Vessel Manager not contactable, the next in line is the QHSE Manager

A.3 Response Procedures

The organization for emergency response, the actions to be taken in the event of an emergency and the emergency duties are outlined in this chapter.

Procedures in place include:

- Injury/ illness requiring Medevac to hospital
- Fatal Accident/Illness
- Vessel emergency (Oil Spill, FRB, Fire, Explosion, Grounding)
- Adverse Weather
- Aircraft Incident
- Emergency Communications
- Search and Rescue Procedure

The responsibilities for emergency response lie with WesternGeco, however, it is vital that the interface with the Client is thoroughly understood and managed. WesternGeco, with the Client providing or organizing external assistance where appropriate, handles on-site emergencies on the vessel.

The WesternGeco Marine Vessel Manager is responsible for verifying the suitability and completeness of the emergency procedures.

The Master is responsible on-board the vessel for ensuring that the emergency response facilities and materials as specified in the emergency procedures are available and fit for purpose at all times.

WesternGeco Marine Emergency Response Team

Vessel: Western Trident	This Emergency Response Team is triggered by a single call to the nominated ERT leader, or the first substitute who can be contacted
OFS Geomarket: APG	***Note that this team may change as operations move between different OFS Geomarkets within a single WG Region***

ERT Leader

Main Contact	**Kiran Tuite**	+60327308861	+60123065210
1st Substitute	Hong Chai	+6032708822	+60122146580
2nd Substitute	Michael Braunlein	+60327308859	+60123833634
3rd Substitute			

Marine VP

Main contact	**Leif Larsen**
1st Substitute	Jeff Mayville
2nd Substitute	Martin Anderson
3rd Substitute	
4th Substitute	

Next-of-Kin Support

Main contact	**Karen Hartley**
1st Substitute	Roger LeGrand
2nd Substitute	Richard Lawson
3rd Substitute	Nasreen Khairuddin

Media

Main contact	**Rhonda Boone**
1st Substitute	Joseph Varisco II
2nd Substitute	
3rd Substitute	

Fleet Technical Support

Main contact	**John Hattendorf**
1st Substitute	Sigurd-P Karlsen
2nd Substitute	Larry Howard
3rd Substitute	

Recorder

Main contact	**Michael Braunlein**
1st Substitute	Hong Chai
2nd Substitute	Steve Harries
3rd Substitute	

Legal

Main contact	**Alex Juden**
1st Substitute	
2nd Substitute	
3rd Substitute	

IT & Facilities

Main contact	**Maizatul Aliza**
1st Substitute	Eileen Dowen
2nd Substitute	
3rd Substitute	

Geomarket ERT Leader

Main contact	**Gus Melbourne**
1st Substitute	Odd Oeen
2nd Substitute	Melissa Waldon
3rd Substitute	

Geomarket Media Contact

Main contact	**Gus Melbourne**
1st Substitute	Odd Oeen
2nd Substitute	Melissa Waldon
3rd Substitute	

Summary of Roles and Responsibilities in the Marine ERT	
ERT Leader This person will be the first point of contact from the field site. He/she will make the decision on what the appropriate response is and what resources are required. Once the ERT is assembled this person will coordinate the team activities, maintaining the big picture, and always delegating rather than getting involved in support activities	**Marine VP** The Marine VP or his substitute will act as and adviser to the ERT, providing an interface to the Crisis Management Team if required, and ensuring good communications to the wider organization and all other stakeholders.
Next-of-Kin Support This person or team will provide the resources to communicate with family members and colleagues of the crew, to be a link to the N-o-K support organisation in subcontractor companies including the manning agents, and to liase with the Geomarket organizations and or other agents to provide for reception centres for crew and family members as required.	**Media** This person or team will prepare the initial holding statements, ensure that the switchboard operators are briefed, and to prepare briefing to the Crisis Management Team or to the Geomarket ERT media representatives as appropriate.
Fleet Technical Support This person or team provides technical advice on all maritime issues, has access to all the technical specifications and drawing for the vessel, will be the main communication link to the P&I club, to the Rescue Coordination Centre, to Salvage organizations, to Flag State, Port State, and Classification Societies.	**Recorder** This person will typically be the deputy ERT leader and will organize the logging of all events as they happen, and ensure that adequate admin resources are available to make electronic logs and to share these by Netmeeting with remote sites if applicable.
Legal This person will provide legal advice to the ERT as required, and to liase with Geomarket legal expertise.	**IT & Facilities** Help may be required from the local Facilities Management organization to provide physical resources, to protect the building from intrusion of Press, and to ensure that adequate IT and communication facilities are available.
Geomarket ERT Leader This person who should be briefed at project start-up of what we expect from the Geomarket in the way of support. This person will probably assemble a team to either support the main marine team, or in some cases to take over if it is a very local emergency. (eg single medevac)	**Geomarket Media Contact** This person will be part of the Geomarket ERT. It is very likely that after the initial holding statement if not before, the Marine ERT media person would hand over to this person in the Geomarket where the media interest lies.

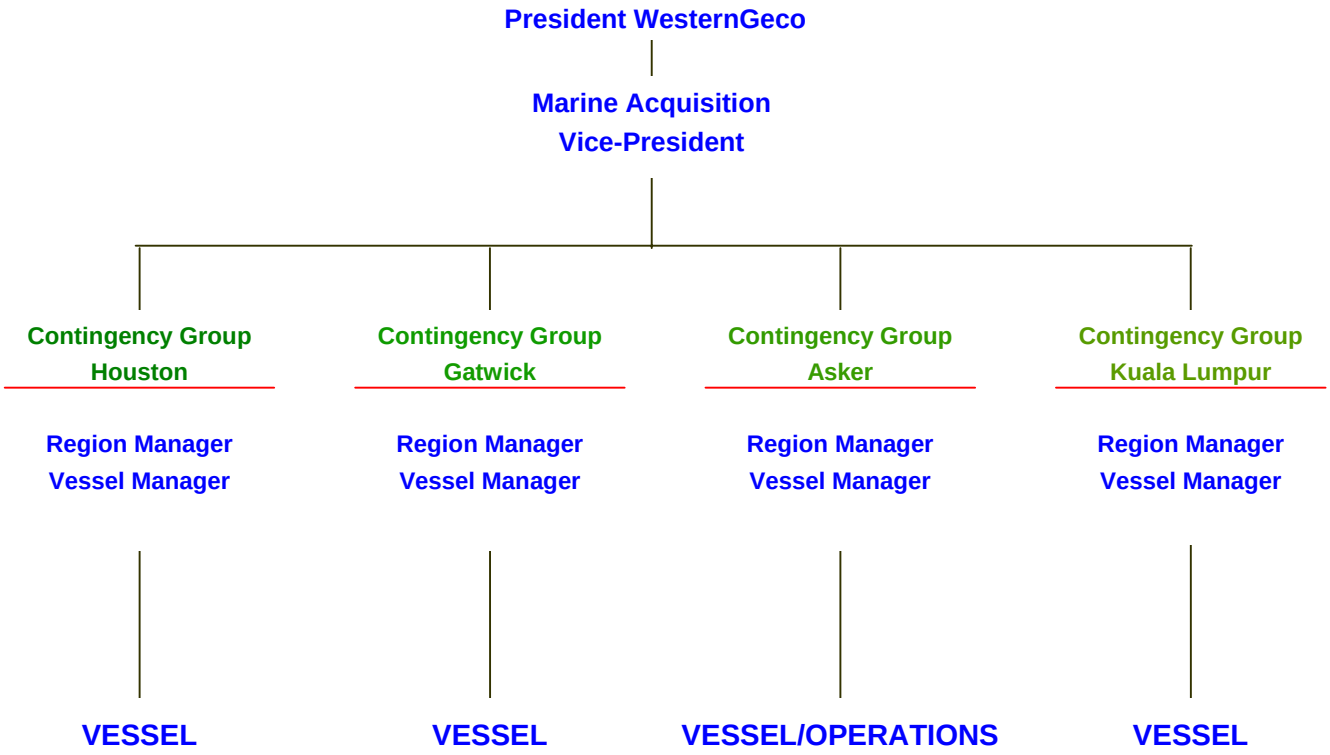
- *Contingency Group*

  The "Contingency Group" is called in the case of an emergency of severity scale "Catastrophic" or "Major".

  The Contingency Group are members of WesternGeco's shore management nominated for the purpose. The list of members of the contingency group is kept up to date by the issuing of the latest phone list from Kuala Lumpur. The vessel should first call the vessel manager in an emergency, if no reply then any member of the Contingency Group can be called, and he then will become responsible for calling all other members of the group. Support vessels operation will refer to the captain of the Mother vessel in emergency situation.

  Refer overleaf for the contingency group information and call-out scheme.

A.4 WesternGeco Marine Acquisition Contingency Groups



CONTINGENCY GROUP
ASA MARINE KUALA LUMPUR

MAIN OFFICE PHONE: +(603) 2730 8800 FAX: +(603) 2715 6588
DELEGATION OF RESPONSIBILITY

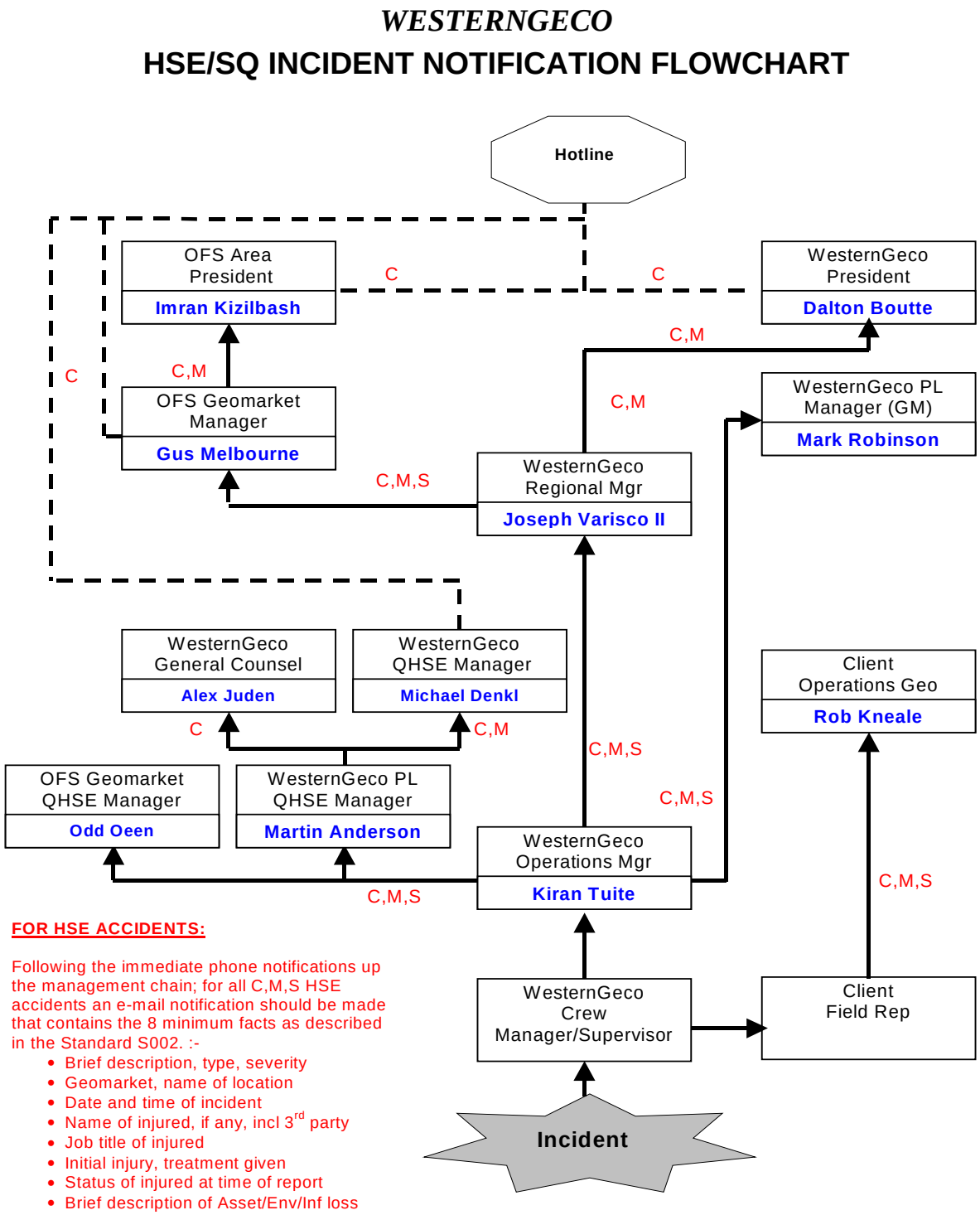
Delegation is instrumental in terms of being able to handle an emergency. The following diagram is to be used as a basis for delegating tasks to the members of the ASA Marine Contingency Group.
When tasks are delegated, check off with a cross.

GROUP LEADER	**Marine Operations Manager**				**References and Contact Numbers:**
GROUP MEMBER (LEADER)	**Marine Administrator/ SQ Coach**				
GROUP MEMBER	**Marine Ops. Support**				
GROUP MEMBER	**Marine Ops. Support**				
GROUP MEMBER	**WG Personnel Manager**				
GROUP MEMBER	**WG Marine Personnel Mngr.**				
Responsibilities					
Event log					
Call secretarial assistance					
Communication with....					
Vice President					See SEISMIC Emerg. Com. Phone list
Risk Manager					See SEISMIC Emerg. Com. Phone list
Company Legal Council					See SEISMIC Emerg. Com. Phone list
Corporate Fleet Manager					See SEISMIC Emerg. Com. Phone list
Client					See Project Plan for Vessel
Coast State Authorities					See Project Plan for Vessel
Coast Radio Station					See Project Plan for Vessel
P & I, Hull & Machinery					Risk Manager
Chartered Vsl. Owner (if appl)					See Project Plan for Vessel
Rescue Co-ordination Center					Sola RC (47) 51-51-7000
Other vessels in area					See Vessel Phone List
Local Agents					See Project Plan for Vessel
Casualty					
Manning Agents					See Project Plan for Vessel
Priest, Crisis Psychiatrist					OFS Personnel Manager
Notification of Next of Kin					**ref. MWWD/m408 page 5**
CONTACT WITH THE PRESS	**Area Manager**				
Inform Time of Press Release	**Office: +60 (0)3 27308803**				
Prepare Initial Press Release	**Mobile: +60 (0)3 (0)123725899**				
Prepare "Press Center"	**E-mail: denkl2@kuala-lumpur.westerngeco.slb.com**				
Prepare "Telephone Service"					
Flag State Authorities					
Classification Society	**FLEET MANAGEMENT ASKER**				
RESOURCE PROCUREMENT	**INTERNAL SUPPORT AND SECRETARIAL STAFF TO BE CALLED IN AS NEEDED.**				**ALL MEMBERS OF THE CONTINGENCY GROUP SHOULD BRING THEIR LAPTOP COMPUTERS AND MOBILE PHONES TO THE CONTINGENCY ROOM.**
Secretarial					
Operational					
Logistical					
Technical					
Other/External					

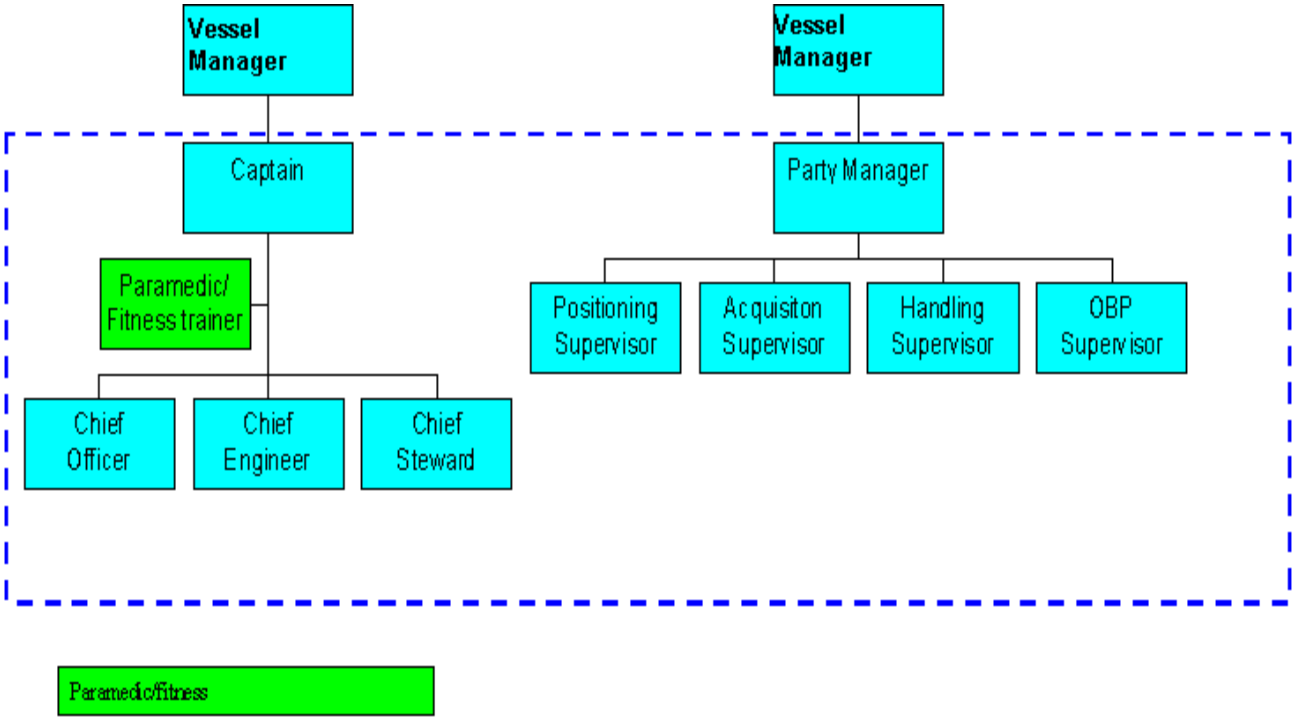
Marine Seismic Contingency Call Out Scheme			
Severity Scale	**Severity Criteria**	**Reporting Time**	**Reporting To**
5. CATASTOPHIC	Fatality Damage >$1 Mil	As soon as possible	Region Manager Vessel Manager
4 MAJOR	Major / Multiple LTI Damage >$100 K	As soon as possible	Region Manager Vessel Manager
3 SERIOUS	LTI Damage >$10 K	As soon as possible	Region Manager Vessel Manager
2 LIGHT	First Aid Damage <$10 K	First office hour. (if Doctor, Helicopter, other ship, or third party involved : ASAP)	Vessel Manager Client Vessel Representative
1 NEAR ACCIDENT		IPM E3, D4, E4, C5, D5, E5 Treated as level 3	Depending on severity Client Vessel Representative

A.5 APG Geomarket Marine Accident Notification Diagram

C = Catastophic
M = Major
S = Serious

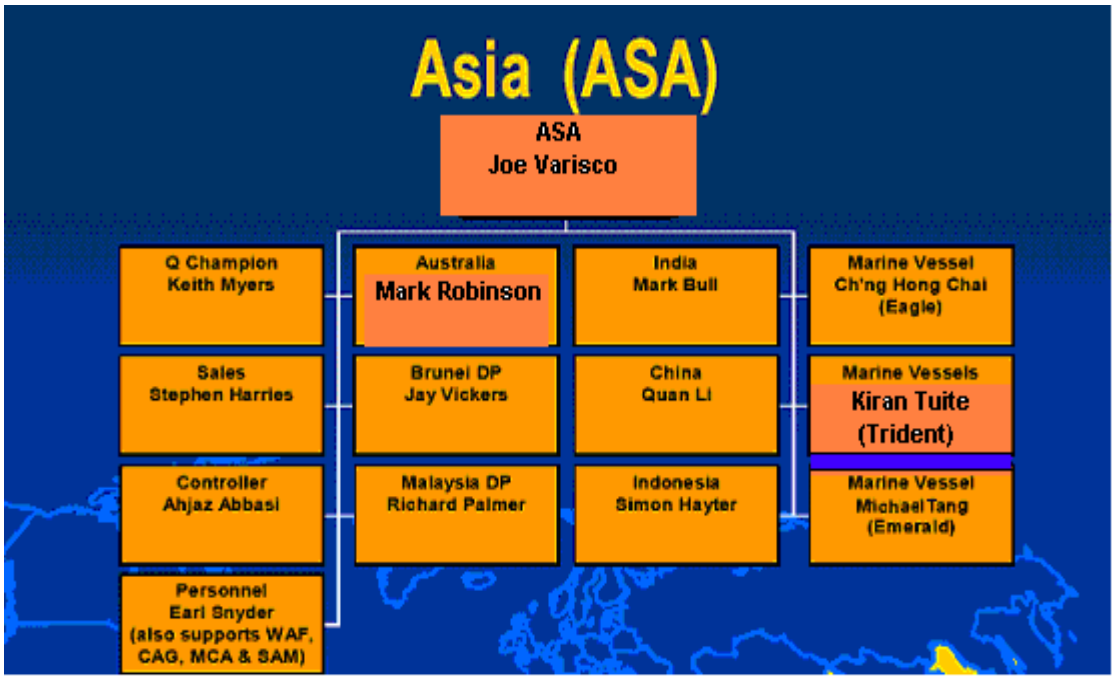


A.6 Vessel Organization Chart



A.7 WesternGeco Global Structure

A.8 WesternGeco ASA Operations Structure



A.9 AEA Emergency Medical Procedure

AEA Emergency Medical Procedure for Gippsland Basin Seismic Project

B. Emergency Contact Numbers

Note: All phone contact numbers are verified for validity.

B.1 WesternGeco World Wide Emergency Contact Number List

Worldwide Emergency Comms List

B.2 Vessel Contact Numbers

VESSEL : M/V Western Trident	**TEL**	**FAX**	**TEL**
Vsat Link UK line	+44-207 576 6870	+44-207 576 6870	(24 hr)
Vsat Link USA line	1-713 296 5370	1-713 296 5370	
CDMA FRBile			
Inmarsat B	873-335 726 910	873-335 726 911	
Inmarsat C			
Callsign: **3 FEO 9**			
Vessel Bridge	+1 713 296 5370	+1 713 296 5370	(24 hr)
Captains :			
Paul Reid			
Rudolf Bless			
Email:mailto:Captain@Trident.westerngeco.slb.com			
Party Managers :			
Mike Martin			
Ian Halfpenny			
Email:mailto:Party_Chief@Trident.westerngeco.slb.com			

B.3 Job Specific Emergency Contact Numbers

WesternGeco Contacts

	Office Hours		Out of Hours
Vessel Operators: WesternGeco	**Tel**	**Fax**	**Contact Nos.**
Kuala Lumpur office WesternGeco 11th Floor, East Wing Rohas Perkasa No. 8 Jalan Perak 50450 Kuala Lumpur	+60 3 2730 8800	+60 3 2715 6188	
Marine Department WesternGeco's Contingency Room	+60 3 2730 8846	+60 3 2715 6588	
Region Manager Joseph Varisco II Email: jvarisco@kuala-lumpur.westerngeco.slb.com	+60 3 2730 8803	+60 3 2715 5188	Mbl: +60 123725899
Vessel Manager Kiran Tuite Email: tuite1@kuala-lumpur.westerngeco.slb.com	+60 3 2730 8861	+60 3 2715 6188	Mbl: + 60 12 3065210
Marine Administrator Michael Braunlein Email: mbraunlein@kuala-lumpur.westerngeco.slb.com	+60 3 2730 8809	+60 3 2715 6188	Mbl: +6012 3833634
Marine QHSE Manager Martin Anderson Email: anderson10@gatwick.westerngeco.slb.com	+44 1293 556884	+44 1293556501	Mbl: +44 7710 082668
Global Crewing Manager Richard Lawson Email: rlawson@gatwick.westerngeco.slb.com	+ 44 1293 557512	+44 1293556770	Mbl: + 44 7717 346395
Global Crewing Manager Roger Le Grand Email: legrand4@houston.westerngeco.slb.com	+ 44 1293 556 638	+44 1293556770	Mbl: + 44 7717 346393
Geosupport Manager Steven Calthrop Email: calthrop@kuala-lumpur.westerngeco.slb.com	+60 3 2730 8845	+60 3 2715 6188	Mbl: +60 12 383 5483
Marine Navigation Supervisor Edward Loh Email: eloh@kuala-lumpur.westerngeco.slb.com	+60 3 2730 8856	+60 3 2715 6188	Mbl: +60 12 383 2275

Client Contacts

Client Company	Office Numbers		After Hours Contact Nos.
	Tel	Fax	
Apache Energy Limited Level 3, 256 St Georges Terrace Perth, Western Australia	+61 8 9422 7222	+61 8 9422 7446	
Exploration Manager Stephen Keenihan stephen.keenihan@aus.apachecorp.com	+61 8 9422 7419	+61 8 9422 7446	+61 40775 7844
Safety Manager Chris Jackson chris.jackson@aus.apachecorp.com	+61 8 9422 7223	+61 8 9422 7575	+61 40719 2892
Environmental Manager Myles Hyams myles.hyams@aus.apachecorp.com	+61 8 9422 7288	+61 8 9422 7575	+61 41993 4495
Senior Staff Geophysicist Rob Kneale rob.kneale@aus.apachecorp.com	+61 8 9422 7237	+61 8 9422 7446	+61 40535 5996
Seismic Acquisition Supervisor Frank Renton f.renton@enquest.com.au	+61 4 1868 1314	+61 4 1868 9866	+61 41868 1314

B.4 Sub Contractor Contact Numbers

	OFFICE HOURS		OUT OF HOURS
AGENT IN AUSTRALIA	**TEL**	**FAX**	**CONTACT NO.**
Monson Agencies Pty.Ltd. (Main Agent In Australia) Fremantle, WA Suite 1, 1 High Street Fremantle, Wa 6160 Contact: : Andrew Allin andrewa@monson.com.au	+61 8 9335 0000 Direct Line: +61 8 9335 0007	+61 8 9335 0055	After hours: +61 8 9310 4527 FRBile: +61 (0)417 904 794

	OFFICE HOURS		OUT OF HOURS
SUPPORT VESSEL OWNERS	**TEL**	**FAX**	**CONTACT NO.**

B.5 Helicopter Contacts

HELICOPTERS	OFFICE HOURS		OUT OF HOURS
Medivac / SAR	**Phone**	**Fax**	**Contact Nos.**
CHC Helicopters Sale Base Craig Barraclough cbarraclough@chcaustralia.com	+ 61 8 83727726	+ 61 8 83734519	+61 407306787

B.6 Medical Contacts

Medical	Tel	Fax	Contact Nos.
Central Gippsland Health Service - Sale	61-3-514 44111	+61-3-51438795	+61 3 514 44111
AEA International Ltd AEA Singapore - evacuation and medical advice	(65) 6338 7800	(65) 6338 7611	

B.7 Port Authorities

Port Authorities	Tel	Fax	Contact Nos.
Port of Portland	+61 3 5525 0900	+61 3 5521 7488	+ 61 407 052 446

E-Mail: info@portofportland.com.au			
Gippsland Ports E-mail: **ceo@gippslandports.vic.gov.au**	+61 3 5152 1974	+61 3 5152 4772	

B.8 Oil Spill Emergency

Oil Spill Agencies & Specialists	**Tel**	**Fax**	**Contact Nos.**
Australian Marine Safety Authority (24hr Emergency)	+61 (02) 9296 4000		
AMOS Plan amosc@amosc.com.au	General Administration +61 (03) 5272 1555	(03) 5272 1839	24 hour emergency pager +61 016 379 328
National Plan - AMSA Marine Environment Protection Unit			
General Manager – Baird, David	+61 (02) 6279 5935	+61 (02) 6279 5076	A/H: +61 (02) 6269 0843
Manager Operations - Ray Lipscombe	+61 (02) 6279 5929	+61 (02) 6279 5076	A/H: +61 (02) 6269 0800

B.9 Other Medical & Rescue Contacts

General Medical/Rescue Advice	**Tel**	**Fax**	**Contact Nos.**
Sentosa (Inmarsat) Singapore	1#135111111 32#		As office hours
Rescue Co-ordination Centre, RCC Stavanger, Norway	47-51-517000	47-51-652334	As office hours
Rescue Co-ordination Centre Australia	+61 (02) 62306880	+61 (02) 62306868	As Tel
Australian Search & Rescue Canberra	+61-2-62305711 +61-2-62306811		
DoIR Petroleum Division Safety & Environment Branch	+61 8 9222 3622	+61 8 9222 3799	+61 8 9480 9096
Australian Marine Safety Authority (AMSA) Canberra	+61 2 6230 6811	+61 2 6230 6868	
AusSAR Maritime Rescue Coordinating Centre	1800 641 792		
Melbourne Air Ambulance	1300 883 100		

C Job Book

The following information can be obtained from Supervision website.

- Acquisition Parameters
- Positioning Parameters
- Deliverables
- Job Book Notes