

#### **MANAGEMENT REPORT**

#### OF THE BOARD OF DIRECTORS

Fiscal year ended December 31, 2011

#### 1. MAIN BUSINESS OF THE GROUP IN 2011

CGGVeritas has organized its geophysical operations into two main sectors of activity: Geophysical Services and Geophysical Equipment.

The Geophysical Services sector covers four Divisions:

- Land: Land based, transition zone and seabed seismic contract data acquisition ("Contract Land acquisition" activity or the "Land Division);
- Marine: Marine based seismic contract data acquisition ("Contract Marine acquisition" activity or the "Marine Division");
- Processing, Imaging & Reservoir: A broad portfolio of advanced geosciences technology, products and solutions for seismic data processing, imaging and reservoir management ("Processing, Imaging and Reservoir" activity or the "Processing, Imaging and Reservoir" Division);
- Multi-Client: The investment and sale (License) of marine and land CGGVeritas proprietary seismic surveys to multiple customers (the "Multi-Client activity" or the "Multi-Client Division").

The Services sector is organized by Division since the reorganization that took place in July 2010. The objective of this reorganization was to enhance CGGVeritas' operational and commercial performance by the strengthening of the Services business line and leveraging our advanced technologies in order to better promote our entire spectrum of integrated services in our markets. The reorganization also enhanced our proximity with our local clients.

The Geophysical Equipment sector corresponds to the "Equipment Division":

It regroups the activities of the subsidiaries of Sercel Holding SA, which covers the design, manufacture and marketing of land, marine and down-hole seismic data acquisition equipment.

Finally, in the frame of the organization implemented in July 2010, Functions with transverse responsibilities were created, in addition to the typical functions such as Finances and Human Resources. The new Functions include Technology, Global Operational Excellence and Geomarkets & Global Marketing.

The Technology Function defines the R&D strategy of the Group, follows up its implementation, favors the emergence and the development of innovation, particularly for cross Division solutions, and monitors the management of the Intellectual Property.

Global Operational Excellence Function's mission is to promote the operational efficiency and the sharing of best practices within the Group. Moreover, the Function manages Sourcing & Supply Chain, Quality and Infrastructure, and Security and IT departments.

The Function Geomarkets & Global Marketing is responsible for coordinating the commercial actions towards the clients and the prospects of the Group and represents the Group locally with our clients and the local administrative authority. It is supported by 18 key geographical competency areas or "Geomarkets".

<u>Breakdown of consolidated revenues by activity</u> (excluding intra-group sales) in millions euros and millions US dollars:

	2011		2010			2009			
	M€	MUS\$	%	M€	MUS\$	%	M€	MUS\$	%
Contract Land acquisition	265.6	372.8	12%	286.9	381.4	13%	274.2	381.8	12%
Multi-Client Land acquisition	93.7	131.5	4%	109.9	145.9	5%	73.0	101.6	4%
Total Land acquisition	359.3	504.3	16%	396.8	527.3	18%	347.2	483.4	16%
Contract Marine acquisition	696.2	977.1	31%	585.2	778.1	27%	774.4	1,078.1	35%
Multi-Client Marine acquisition	260.3	365.4	11%	292.2	388.4	14%	297.2	413.7	13%
Total Marine acquisition	956.5	1,342.5	42%	877.4	1,166.5	41%	1,071.6	1,491.8	48%
Processing, Imaging & Reservoir	315.5	442.7	14%	292.7	389.1	13%	289.6	403.3	13%
Total Services	1,631.3	2,289.5	72%	1,566.9	2,082.9	72%	1,708.4	2,378.5	77%
Total Equipment	636.4	890.9	28%	619.2	821.3	28%	524.8	730.8	23%
Total	<u>2,267.7</u>	<u>3,180.4</u>	<u>100%</u>	<u>2,186.1</u>	<u>2,904.2</u>	<u>100%</u>	<u>2,233.2</u>	<u>3,109.3</u>	<u>100%</u>

Breakdown of the consolidated revenues by geographical area in millions euros and millions US dollars:

	2011		2010			2009			
	M€	MUS\$	%	M€	MUS\$	%	M€	MUS\$	%
North America	502.4	704.9	22%	584.5	776.5	27%	501.5	698.3	22%
Latin America	457.0	641.2	20%	296.1	393.4	13%	156.8	218.3	7%
Europe, Africa & Middle East	808.9	1,133.7	36%	866.8	1,151.5	40%	982.1	1,367.3	44%
Asia Pacific	499.4	700.7	22%	438.7	582.8	20%	592.8	825.4	27%
Total	<u>2,267.7</u>	3,180.4	<u>100%</u>	<b>2,186.1</b>	2,904.2	<u>100%</u>	<b>2,233.2</b>	<u>3,109.3</u>	<u>100%</u>

CGGVeritas clients can be typically categorized as National Oil Companies, International Oil Companies (the "Majors") and Independent Companies. In 2011, the top two clients of the Group represented respectively 13% and 3% of the consolidated Group revenues.

#### 1.1. Geophysical Services Sector

Estimates relative to the Services geophysical market and to the competitive positioning of the CGGVeritas Group within this sector or within the activities of this sector come from internal Group data. There is currently no available external database

#### a) Land Seismic Acquisition

#### Overview

Land acquisition offers integrated services, including the acquisition and the onsite processing of seismic data on land, transition zone or seabed areas. CGGVeritas performs land surveys through exclusive contract activity or non-exclusive multi-client activity.

CGGVeritas is one of the main land seismic acquisition worldwide contractors, especially in North America and Middle-East, and particularly in areas requiring specific technologies, Health, Safety and Environment excellence ("HSE") and operational expertise. CGGVeritas' positioning on Artic areas, on seabed and transition zones and on the high-resolution crews market in North Africa and Middle East illustrates this specific positioning. In 2011, the Group operated an average of 19 active land crews performing 3D and 2D seismic surveys (15 crews dedicated to contract surveys and 4 dedicated to non-exclusive surveys).

#### **Activity description**

The land operations include surveying and recording crews. Surveying crews lay out the lines to be recorded and mark the sites for shot-hole placement or recording equipment location (except for "stackless" operations where the sources locations are indicated through integrated GPS capabilities rather than on location by field personnel). Recording crews produce acoustic impulses and record the seismic signals via geophones or hydrophones. The acoustic sources used are mainly vibratory onshore, and air guns at sea. On a land survey where explosives are used as the acoustic source, the recording crew is supported by several drill crews. Drill crews operate ahead of the recording crew and bore shallow holes for explosive charges which, when detonated by the recording crew, produce the necessary acoustic impulse.

Thanks to the improvement of equipment and acquisition technologies together with a growing demand for managing complex reservoirs, seabed acquisition has become a stand-alone and viable acquisition process. Seabed acquisition does not compete in general with the traditional towed streamer acquisition method, which typically is complementary. Indeed, the seismic seabed operations are performed most often in areas where the traditional towed streamer acquisition method is impossible, not adapted or too expensive because of physical access constraints (swallow waters, obstacles, etc...). Seabed technology can also be more performing for certain types of specific seismic works such as the monitoring of production in order to optimize the management of reserves especially in complex reservoirs. Seabed acquisition is operated through groups of discrete point receivers ("nodes") or cables ("OBC" and other submersible systems) laid out on the sea bed either permanently either temporarily to be re-used for other areas.

CGGVeritas is currently the only major seismic contractor in the industry that offers both methods. Recently, another dimension has been added to seabed seismic data acquisition by trenching cables into the seafloor for permanent reservoir monitoring. As an early mover in this area, CGGVeritas offers high-end electrical cables and fiber optic cables through Sercel. CGGVeritas provides a unique and complete seabed solution including equipment, installation, data collection, processing and reservoir characterization.

Land seismic crews are equipped with advanced equipment and software used for each step of the acquisition process, as an example: the Sercel 428XL seismic data recorders; the Sercel SeaRay seafloor cables and the Trilobite autonomous recording nodes for seabed operations; the Sercel Nomad 65 and Nomad 90 vibrators, the Sercel VE464 vibrator electronic control system used to synchronize and verify the emission of acoustical waves by vibrators; DSU3 Sercel digital 3 components sensors; Sercel Unite onshore wireless acquisition systems; patented high vibroseis technologies such as HPVA and V1 which seek to increase by two or three the productivity of a crew or EmphaSeis which seeks to enhance the resolution of the data through broadening the frequency content of the signal emitted combined with specific acquisition and processing technologies; and on-site processing software for acquired data.

CGGVeritas believes that its technology and its experience enable the Group to offer high quality, fully integrated land seismic services. The Group has pioneered the real-time positioning of geophones and seismic sources, quality control of positioning during land surveys, simultaneous shooting technologies and on-site processing, which together increase the accuracy and efficiency of such surveys.

One of the main challenges inherent in land seismic acquisition surveys is gathering data without disrupting the sensitive ecosystems in which surveys are located. CGGVeritas has developed a good reputation for operations in environmentally sensitive zones, such as mountainous regions, tropical forests and swamps as well as Arctic areas, by following a strict policy of preserving the natural environment to the extent possible. The Group also works in conjunction with the local community at site locations, hiring local employees and obtaining necessary local authorizations.

The difficulty of access to survey sites is a major factor in determining the number of personnel required to carry out a survey and the cost of a survey. A full crew for a land, transition zone or sea-bottom survey is highly variable and may range from a total of less than one hundred to a few thousand members (principally composed of local employees in the latter case), and the monthly cost of a survey can range from several hundred thousand to several million dollars per month, depending on the size of the team and the type and difficulty of the survey.

CGGVeritas works closely with its clients to plan surveys in accordance with their technical specifications while optimizing the resources required. The Group regularly conducts land seismic acquisition surveys for national, international oil companies and independents. The contracts concluded to perform such surveys are awarded based on competitive bids or directly negotiated agreements with the clients.

#### Contract and multi-clients land seismic data acquisition

In land acquisition, CGGVeritas operates with two different approaches, i.e. two different commercial business models:

- The first consists of working on an exclusive contractual basis with the client. The contract usually stipulates that the contractor will receive a fixed remuneration per acquired kilometer or square kilometers, on client specifications. The client owns the acquired data and pays the contractor for the total cost of the project, the price being fixed by the offer. Therefore the operating income for the contractor is the difference between the sales price and the final cost of the survey.
- The second consists of operating under a non-exclusive or multi-client model, with multiple clients prefunding the acquisition. In areas of intense exploration such as the unconventional resources plays ("Shale Gas", "Shale Oil"), CGGVeritas invests in large and contiguous multi-client surveys. CGGVeritas retains the ownership and rights to such data. CGGVeritas has exclusive right to license the data to several clients during a period of time which varies in function of the local regulations.

CGGVeritas proposes a license to use the data to interested companies who in return benefit from quick access to "ready to be interpreted" data at reduced costs. Multi-client data are typically used to evaluate exploration opportunities prior to a bid round for instance, or to rapidly access at reduced costs to recent high quality data once the companies have obtained exploration rights in a given block. Strict confidentiality and transferability restriction govern the use of multi-client data. For instance, future partners in a block will be obliged to license the data to be able to access it.

The costs of the multi-client surveys are capitalized in the balance sheet. The surveys are then amortized as per the CGGVeritas accounting policies in compliance with the industry practices and the IFRS rules. Each survey is evaluated separately following the accounting principles described in the notes n°1 to 2011 period final consolidated accounts.

CGGVeritas land multi-client library in North Americas is composed of more than 59,000 square kilometers of 3D surveys located mainly along the US and Canadian Rocky Mountains, in Oklahoma, in South and East Texas, in the Shale Gas basins (Haynesville and Marcellus) as well as in the Bakken field (Shale Oil).

The Land multi-client market in North America is characterized by high level of prefunding, a long project life (more than 10 years) and very limited overlap of recent surveys by other geophysical contractors.

#### Description of the activity in 2011

#### Competition and market

The land acquisition market is fragmented and extremely competitive with the presence of both international and local players. CGGVeritas has chosen a selective position in the high-end market, and, when the context is adequate, in partnerships with local players. The four main competitors in the land acquisition market are WesternGeco, Global Geophysical Services, Geokinetics and BGP.

In this market, CGGVeritas considers that technology, quality of the crews, services provided and prices are the main differentiators, while the relationship with local suppliers and the expertise of its personnel in complex areas are additional advantages.

The Group's offer is based on the technology and the geographical focus with high-end activities operated more and more through local partnerships. CGGVeritas has developed a unique expertise in North America's arctic regions, in the Middle-Eastern and North African deserts and in shallow water /transition zone areas.

The Group contributes its international expertise, technical know-how, equipment and experienced key personnel to these partnerships as needed, while local partners provide logistical resources, equipment and knowledge of the environment and local market.

Total land seismic activities – contract and multi-client surveys – accountedfor 504 MUS\$ (359 M€), i.e. 16% of the Group consolidated operating revenues and 22% of the Services operating revenues in 2011.

#### Contract land seismic acquisition activity

In 2011, CGGVeritas had an average of 15 active land crews performing 3D and 2D seismic surveys on a contract basis. Contract land consolidated revenue was 373 MUS\$ (266 M€) in 2011, i.e. more than 16% of the Services revenues.

In Saudi Arabia, CGGVeritas' land seismic acquisition activities are conducted through Arabian Geophysical & Surveying Co. ("Argas"), a joint venture owned 49% by the Group and 51% by TAQA<sup>1</sup>, its local partner. CGGVeritas' operations in Middle East (outside Saudi Arabia) are conducted through Ardiseis, a joint venture owned 51% by the Group and 49% by TAQA.

#### Land multi-clients surveys acquired by CGGVeritas

The location of the surveys and the quality of the data constitute important differentiators in the Land multi-client business.

In the US, CGGVeritas continued in 2011 the acquisition of a program started in 2009 in the Haynesville Shale Gas basin (Louisiana). 5,150 square kilometers of high quality data are now available for license. The acquisition of another multi-year survey in the Marcellus Shale Gas basin (Pennsylvania) was intensified with 3 crews operating in parallel until November. Ultimately, more than 4,100 square kilometers will be acquired in 2 years. In Canada, a first survey was acquired in December targeting an important Shale Oil play in Saskatchewan.

<sup>&</sup>lt;sup>1</sup> A shareholders agreement has been entered into between CGGVeritas and TAQA organizing (amongst other items) the allocation of offices within the Board of Directors, as well as the transfers of both shareholders' interests to third parties. The implementation of this agreement is not likely to cause any change in financial flows or in the allocation of powers.

In 2011, CGGVeritas invested in North America 130 MUS\$ (92 M€) in new land multi-client surveys. The total revenue from land multi-client was 132 MUS\$ (94 M€) in 2011 or 6% of the Services revenue, a decrease of 10% in US\$ year on year.

The multi-clients after sales were 32 MUS\$ (23 M€) in 2011. The average prefunding ratio was 76%, and the Net book value of the Land multi-client library was 136 MUS\$ (105 M€) at year end.

#### 2012 perspectives on land acquisition

CGGVeritas land seismic acquisition services are geographically and technologically well placed in the highend market and through strong local partnerships. The Land strategy remains focused on differentiation and operational excellence rather than market share, avoiding as much as possible commoditized markets.

In North America, and after many years of largely commoditized seismic acquisition, especially in the United States, we believe that the demand for land seismic acquisition services, in particular with a higher technological content should accelerate for contract and multi-client activities, driven by the strong development of shale plays and Oil Sands. This should represent a goodopportunity for CGGVeritas' land activity, both multi-client and contract, and for the development of its newly created monitoring solutions group proposing both passive (micro-seismic) and active (SeisMovie, a CGGVeritas' patented buried source / receiver technology) monitoring solutions, where the Group aims to play a predominant role.

National oil companies and in particular in the Middle East, are expected to increasingly request advanced technologies, either in desert areas with very large channel count crews and high vibroseis productivity, or complex shallow water locations using Ocean Bottom Cables such as the 4C Sercel SeaRay system. CGGVeritas' strategy for the land acquisition division is therefore to:

- focus its presence in certain geographic markets, where we believe we have a competitive advantage;
- serve the increasing demand for high-resolution land seismic acquisition and high-end technology, through expanded use of its UltraSeis broadband solutions, combining state of the art seismic equipment developed by Sercel, specific and fit for purpose wide azimuth geometries, patented high-productivity vibroseis technologies such as HPVA and V1 and its proprietary EmphaSeis broadband vibroseis technology combined with superior processing technologies as successfully implemented in the Middle East, North Africa and North America;
- accelerate the development of the Group's Land active and passive monitoring solutions addressing the needs as for fracturing monitoring and the production of shale gas reservoir;
- continue to improve reservoir characterization through the introduction of new technology that allows efficient high resolution acquisition on which CGGVeritas benefits from a high-end position;
- further expand its shallow water and seabed solutions, by leveraging on the recent successes in Saudi
  Arabia where ARGAS operates the two largest OBC programs ever acquired and through the
  introduction of its proprietary Trilobit nodes in transition zones with the availability of a first
  thousand nodes crew planned in 2012;
- optimize its presence in North America to better offset the seasonality effect by taking advantage of the strong dynamism of the shale plays, which will drive seismic demand and require more technology. The increased presence of major oil companies having a strong appetite for technology and stringent HSE requirements, the strong drive towards wireless technologies where we had success in 2011 as well as the development of the Group's integrated shale gas solution are real strengths for CGGVeritas in this market;

- continue to promote its expertise in harsh environments, sensitive areas (in terms of environmental or community concerns), and in management of complex projects where barriers to entry are higher and pricing competition less intense;
- and continue to pursue its local partnership strategy.

CGGVeritas also plans on continuing to invest in well prefunded multi-client land seismic data, especially in North America.

#### b) Marine Seismic Acquisition

#### Overview

With a fleet of 19 vessels at the end of 2011, CGGVeritas provides a complete range of 2D and 3D Marine seismic services, mostly in the Gulf of Mexico, the North Sea, offshore western Africa, Brazil and in the Asia Pacific region. CGGVeritas also markets its marine data acquisition expertise in « frontier » regions and is a pioneer in the Arctic and offshore Eastern Africa.

The Group carries out both contract and multi-client marine seismic acquisition surveys.

#### **Activity description**

Surface marine seismic surveys are carried out by using airgun sources to emit acoustic impulses and hydrophones positioned along streamer cables to record the seismic signals. This complete set up is towed by the vessel. The streamers, along which the hydrophones are grouped at regular intervals of 12.5 meters, may reach total lengths of nearly 10 kilometers. The acquisition capacity of a vessel depends upon the number of streamers that its propulsion capacity allows her to tow, and the number of acoustic sources she may deploy. Increasing the number of sources and streamers enables a vessel to acquire surveys with increased efficiency, or with higher resolution.

#### Acquisition of marine seismic data in contract mode or in multi-client mode

In Marine acquisition, as in Land acquisition, CGGVeritas operates with two different approaches, i.e. two different commercial business models:

- The first consists of working on an exclusive contractual basis with the client. The contract generally stipulates that the contractor shall be paid according to a fixed rate such as a daily fee. The contract may protect the contractor against operational elements beyond its control, such as bad weather, or interferences with other activities carried out in the oil field. The client owns the acquired data and pays the contractor for the total cost of the project the price being fixed by the offer. Therefore, the operating income for the contractor is the difference between the sales price and the final cost of the survey.
- The second consists of operating under a non-exclusive or multi-client model, with multiple clients prefunding the acquisition. In areas of intense exploration such as the Gulf of Mexico, Brazil or the North Sea, and when the local regulations are favorable, CGGVeritas invests in large and contiguous multi-client surveys. CGGVeritas has exclusive rights to license the data during a period of time which varies in function of the local regulations.

CGGVeritas proposes a license to use the data to interested companies who in return benefit from quick access to "ready to be interpreted" data at reduced costs. Multi-client data are typically used to evaluate exploration opportunities prior to a bid round for instance, or to access at reduced costs to recent high quality data once the companies have obtained exploration rights in a given block. Strict confidentiality and transferability restriction govern the use of multi-client data. For instance, future partners in a block will be obliged to license the data to be able to access it.

The costs of the multi-client surveys are capitalized in the balance sheet. The surveys are then amortized as per the CGGVeritas accounting policies in compliance with the industry practices and the IFRS rules. Each survey is evaluated separately following the accounting principles defined in note n° 1 to 2011 final consolidated accounts.

The CGGVeritas marine multi-client library consists in 365,000 square kilometers primarily located in the Gulf of Mexico (deep water, central and western areas), in Brazil (deep water Santos basin, as well as in most of the equatorial basins up to the Amazon mouth) and in the North Sea (central basin mainly).

The marine multi-client market is competitive with contractors frequently overlapping each other's libraries. The precise locations of the survey, the quality of the final data as well as the timing of delivery are key elements for differentiation.

#### Description of CGGVeritas fleet of seismic vessels

On December 31, 2011, the CGGVeritas fleet was composed of 19 vessels, including 11 3D high capacity (12 streamers and more), 2 3D vessels of 10 streamers, 3 3D vessels of 8 streamers and 3 3D/2D vessels of lower capacity:

- The CGG Alizé, Oceanic Challenger, Symphony, Viking Vision, Viking Vanquish, Geowave Endeavour, Geowave Voyager, Geowave Champion, Oceanic Phoenix, Oceanic Vega and Oceanic Sirius (delivered and offered to market in October 2011) vessels may already deploy simultaneously more than 12 streamers;
- Most of the Group's 3D high capacity vessels are equipped with Sercel Sentinel solid streamers, which provide several advantages over liquid and gel-filled streamers, such as the ability to acquire surveys in rougher sea, improved frequency content, better signal to noise ratio and minimal environmental impact.

In 2010, the Group launched a fleet upgrade plan, with the objective of increasing the performance and high-end positioning of its vessels. In line with this plan, after the upgrade of the *Viking Vanquish* which was accomplished in 2010, 3 other vessels received major upgrades in 2011 — the *Geowave Master* (renamed the *Oceanic Phoenix*) and the *Geowave Endeavour* (renamed the *Oceanic Endeavour*) were delivered in Q2 2011, and the *Geowave Champion* entered the dockyard in Q4 2011 and will be delivered back to operation in Q2 2012.

The Group also, as part of its fleet modernization program, introduced 3 additional *Nautilus streamer* positioning and control systems in 2011 on *Oceanic Sirius*, *Oceanic Endeavour* and *Oceanic Phoenix*.

With the intention to reposition its 3D fleet in the very high-end market (more than 10 streamers), CGGVeritas also plans to terminate at the beginning of 2012 the *Geowave Commander* chart agreement, the vessel currently being leased up to mid-2013 and with a maximum capacity of 8 streamers. In anticipation of this, this commercialization the *Geowave Commander* was stopped in June 2011.

These steps are part of the performance plan announced by the Group at the end of 2010; this plan resulted into a restructuration cost of 37 MUS\$.

Also as part of the performance plan, the strategy of strengthening of CGGVeritas' fleet management was continued with the transfer of previous Eidesvik ship management contracts to the newly formed CGGVeritas Eidesvik Ship Management AS joint venture with CGGVeritas.

CGGVeritas owns 5 vessels in its fleet, is co-owner of 3 vessels (*CGG Alizé*, *Oceanic Vega* and *Oceanic Sirius*) and operates the rest under chart agreements. The Group fully owns the following 3D vessels: *Oceanic Challenger*, *Amadeus*, *Geowave Voyager* and *Symphony*, and also owns the low 3D/2D capacity *Princess*.

The following table provides some information about the currently operated seismic vessels.

							<u>Maximum</u>	Vessel
	<b>Building</b>	<u>Upgrade</u>	<u>Integration</u>	Ship management	<b>Extension</b>		number of	length
<u>Vessel name</u>	<u>Year</u>	<u>vear</u>	<u>vear</u>	<u>expiry</u>	options <sup>(1)</sup>	2D/3D	streamers (2)	<u>(m)</u>
CGG Alizé	1999	n/a	1999	March 2014	n/a	3D	16	101
Amadeus	1999	n/a	2001	Owned	n/a	3D	8	84
Oceanic Challenger	2000	2005	2005	Owned	n/a	3D	12	91
Princess	1986	2001	2005	Owned	n/a	2D	3	76
Symphony	1988	1999	2001	Owned	n/a	3D	12	121
					2x3 years + 1x17	,		
Veritas Viking	1998	2006	2007	December 2015	months	3D	10	93
Viking II	1999	n/a	2007	May 2015	n/a	3D	8	93
Viking Vanquish	1999	2007	2007	November 2020	n/a	3D	12	93
Veritas Vantage	2002	n/a	2007	June 2016	n/a	3D	10	93
Viking Vision	1993	2007	2007	July 2017	2x5 years	3D	14	105
Bergen Surveyor	1972	1997	2009	December 2012	5x1 year	3D	2	66
Geowave Commander	1997	2006	2009	May 2013	10x1 year	3D	8	85
Geowave Champion <sup>(4)</sup>		2012	2009	December 2019	n/a	3D	12/14	107
Oceanic Phoenix <sup>(5)</sup>		2011	2009	March 2019	10x1 year	3D	12/14	101
Geowave Voyager <sup>(3)</sup>	2005	2009	2009	Owned	10x1 year	3D	12	83
Oceanic Endeavour <sup>(6)</sup>	2007	2011	2009	April 2018	2x5 years	3D	16	92
Oceanic Vega		n/a	2010	July 2022	4x5 years	3D	20	106
Elnusa Finder <sup>(7)</sup>	2011	n/a	2011	March 2019	1x8 years	3D	4	68
Oceanic Sirius	2011	n/a	2011	October 2023	4x5 years	3D	20	106
Venturer <sup>(3)</sup>	1986	2007	2005	December 2012	n/a	3D	4	90
				Decommissioned in				
Veritas Voyager	2005	2006	2006	April 2011	5x1 year	3D	4	68

<sup>(1)</sup> Number of years.

<sup>(2)</sup> Tow points

On January 13, 2011, the Venturer was sold to Norfield AS which sold us the Geowave Voyager.

<sup>(4)</sup> Number of streamers before vessels upgrade.

This vessel was named Geowave Master until February 17, 2011.

<sup>(6)</sup> This vessel was named Geowave Endeavour until February 9, 2011.

This vessel was named Pacific Finder until December 22, 2011; on that date her ship management contract was transferred to the Joint-Venture PT. Elnusa CGGVeritas Seismic. She was reflagged under Indonesian flag and her name was changed to Elnusa Finder.

The time charters of the following vessels have been replaced by bareboat charters respectively on the following dates: Geowave Champion (January 13, 2011), Oceanic Sirius and Veritas Viking (October 3, 2011), Viking Vision (October 24, 2011), Veritas Vantage (November 3, 2011), Viking II (November 7, 2011). Following the transfer of ownership of the Venturer to Norfield Shipping AS on January 13, 2011, a bareboat charter was signed on the same date.

<sup>\*</sup> The CGG Alizé (in co-ownership within Geomar), the Elnusa Finder and the Bergen Surveyor are the only vessels under time charter. The other vessels are either fully owned or under bareboat charter. Among those under bareboat charter, the Oceanic Sirius and the Oceanic Vega are co-owned within respectively Oceanic Seismic Vessels AS and Eidesvik Seismic Vessels AS.

<sup>\*\*</sup> For the following vessels, a purchase option is included: CGG Alizé, Elnusa Finder, Viking Vanquish, Veritas Vantage, Viking II.

As part of its strategy of modernization and upgrade of its fleet, CGGVeritas ordered in 2007 through Eidesvik Offshore the building of two new high capacity seismic vessels. The design of these two vessels includes the most recent technological developments, and particularly Ulstein Design AS most recent X-BOW design. The first vessel, the *Oceanic Vega*, was delivered in July 2010. The second vessel, the *Oceanic Sirius*, was delivered in October 2011. Both vessels are chartered under a bareboat chartered for 12 years to respectively a Eidesvik Seismic Vessels AS Joint Venture and Oceanic Seismic Vessels AS Joint Venture. These two innovative high capacity vessels are part of the renewal strategy of the fleet based upon the progressive decommissioning of previous generations vessels and the introduction of new platforms. The design of these vessels will contribute to improving the efficiency of deployment of the Sercel solid streamers in large configurations of up to 16 long streamers and 20 shorter streamers for high resolution surveys.

In 2011, the Elnusa Finder replaced the Veritas Voyager which was decommissioned in April at the end of its contract. Its ship management contract was transferred to the joint-venture PT. Elnusa-CGGVeritas Seismic on December 22, 2011.

The Amadeus should be contributed during the first quarter of 2012 to the joint-venture with Petrovietnam Technical Services Corporation (PTSC).

#### Description of the activity in 2011

#### Competition and market

The Marine seismic data acquisition market includes four key players, being CGGVeritas, WesternGeco, PGS and Fugro; they altogether represented about 85% of the total 3D world capacity on December 31, 2011.

According to the Group's analysis, the world fleet of seismic vessels with a capacity of 8 streamers and more has been increased in 2011 from 55 to 60 vessels, as 5 vessels were added by various seismic acquisition contractors. As a consequence, the recurrent overcapacity situation has weighed negatively on prices all along the year. In addition, 2011 has been affected by generally low levels of activity in traditional areas such as Mediterranea, India towards the end of the year and the Gulf of Mexico throughout the year, as a result of the delays and uncertainties over regulations after the Macondo incident. It translated into an overcapacity situation, and contractors which were not protected by long term contracts suffered an increased risk of commercial stand by, which resulted in additional price pressure.

Marine seismic activities in total – contract and multi-client surveys – represented 1,343 MUS\$ (957 M€), 42% of total Group revenue, and 59% of total Services revenue in 2011.

#### Contract marine seismic acquisition activity

In 2011, the 3D fleet operated at 92% on exclusive marine acquisition contracts.

Total revenues of contract marine data acquisition activity reached 977 MUS\$ (696 M€), representing an increase of 26% over 2010. This activity represented 43% of total Services revenue and 31% of total Group revenue of the Group.

#### Marine multi-clients surveys acquired by CGGVeritas

In 2011, 8% of the CGGVeritas fleet was dedicated to acquiring multi-client surveys.

In 2011, CGGVeritas continued the development (volume and quality) of its marine multi-client library with the introduction of its BroadSeis solution in Brazil, and the North Sea.

In the Gulf of Mexico, the difficulties created by the drilling and seismic moratorium implemented in 2010 by the US government following the Macondo incident were gradually reduced, without allowing however CGGVeritas to resume its multi-client Wide Azimuth acquisition campaign. The current Wide Azimuth coverage is of 54,000 square kilometers.

In Brazil the southern extension of the library in the Santos basin was completed in 2011. Two new phases were started in the North East of the basin with notably a first BroadSeis survey which will deliver a continuous high resolution image of the key reservoirs of the Campos basin. The current coverage in Brazil stands at 90,000 square kilometers.

The library in the North Sea also saw the introduction of CGGVeritas BroadSeis technology. A new 2,200 square kilometers addition was added to CGGVeritas' core area of Cornerstone. The final results show a significant enhancement of the seismic resolution and of the image of the deeper reservoirs. Two new phases were also added to the Group's program targeting a new gas play in the South of the North Sea.

In September 2011, CGGVeritas finalized a strategic transaction with Spectrum whereby CGGVeritas sold the majority of its existing 2D library allowing the Group to focus on the 3D multi-client market segment, while securing a preferred partner for future strategic 2D ventures. The transaction amounted to 40 MUS\$ partly in cash partly in equity (25% of Spectrum capital).

In 2011, CGGVeritas invested 100MUS\$ (71 M€) in marine multi-client surveys. The total revenue from marine multi-client sales was 365MUS\$ (260 M€), corresponding to 16% of CGGVeritas Services total revenue, a 6% decrease in US\$ year on year as the Group reduced its investments.

The prefunding level was 63% and CGGVeritas' multi-clients data located in key areas benefited from stronger interest from its clients. The net book value of the marine multi-client library at year end was 392 MUS\$ (303 M€).

The marine multi-client after-sales were 303 MUS\$ (216 M€).

#### Perspectives 2012 on marine acquisition

In 2011, in a difficult market and a pricing environment that wasdampened by overcapacity, CGGVeritas maintained its offshore seismic acquisition market share and continued its important investment in the performance program plan to strengthen its position to benefit from a more favorable commercial market which is expected in 2012.

- a) The performance plan which was announced in 2010 will be nearly fully achieved before end 2012. It aims to modernize high-end vessel standards across the fleet, their equipment and the way they operate. 2012 will particularly see the following upgrades and rationalization initiatives:
  - The upgrade work aiming at improving the capacity and reliability of the vessels propulsion will be continued. The *Geowave Champion* will return to operations after its significant upgrade and modernization;
  - The vessels in the fleet that are not equipped as of the end of 2011 will be equipped with Sentinel solid streamers and fitted with Nautilus streamer steering and control systems;
  - The entire fleet will be configured to provide the Group's high-end BroadSeis solution;
  - The move initiated in 2010 to concentrate the ship management of the fleet under two providers, will be finalized. The new ship management contracts will integrate a partly variable remuneration, based upon the availability and performance of the managed vessels;
  - The first specially designed Support Vessel (vessels that supply the seismic vessels and ensure her maritime safety) contracted from Bourbon will be delivered before year end.

At the end of the year, the CGGVeritas fleet widely restructured and improved during the low part of the economic cycle, will be the largest and the best equipped within the industry.

- b) At the same time, the Marine Division will continue in 2012 its initiatives targeting the reduction of costs and the optimizing of its performance, including:
  - Improvement of operations support, to reduce maritime and seismic downtimes;
  - Reorganization of suppliers network;
  - Increase of the average speed of the vessels, thus their production capacity, through better propulsion and better performing in water equipment;
  - Increase of the average number of streamers per vessel (more than 11 streamers / vessel on average vs. 10 in average for the main players of the industry).
- c) Finally, CGGVeritas will continue the implementation of its strategy of commercial and technological differentiation by :
  - Positioning most of its vessels in the 3D 12 streamers plus market segment;
  - Capitalizing upon the superiority of its exclusive BroadSeis solution;
  - Capitalizing upon synergies with the Processing, Imaging and Reservoir Division to deliver its clients global solutions with superior results and reduced turnaround time;
  - Continuing to seek alliances with local players able to open access to markets which are closed today.
- d) In the field of offshore multi-client activities, the Group intends to capitalize upon its well positioned library of seismic data acquired recently in key areas. Investments in new multi-client programs will be significantly increased in 2012.

Thanks to its renewed fleet, its large and recent multi-client data library, and its leading position in high technology content data processing, CGGVeritas is ideally positioned to reinforce and increase its leadership position in the industry.

#### c) Processing, Imaging and Reservoir

#### Overview

Seismic data processing operations transform seismic data acquired in the field into 2D cross-sections or 3D volumes of the earth's subsurface, which provides images and physical properties of the earth. Repeated acquisition and processing of seismic data in the same location over time, yields a time-lapse (4D) view of changes in the reservoir due to production activities. The images and rock properties generated with CGGVeritas' proprietary processing technologies, *geovation* and *Hampson-Russell* software are then interpreted by geophysicists and geologists for use by oil and gas companies in evaluating prospective areas, selecting drilling sites and better managing producing reservoirs.

CGGVeritas provides seismic data processing and reservoir services through its network of data processing centers and reservoir teams located around the world. On December 31, 2011, the Group operated 43 worldwide processing and imaging centers, including 30 international and regional centers open to all its customers, and 13 dedicated client centers.

#### Data Processing, Imaging & Reservoir activity

CGGVeritas processes seismic data acquired by its land and marine seismic acquisition crews as well as seismic data acquired by non-affiliated third parties. Wide-Azimuth and high-density acquisition trends in marine and land have been a significant source of the growth in demand for the Group's data processing services. In addition, CGGVeritas reprocesses previously processed data using new techniques to improve the quality of seismic images. Demand for processing and imaging remained relatively strong across in 2011 and high-end imaging technologies were in high demand.

Innovation and the rapid development and deployment of new processing and imaging technologies are a very important component of CGGVeritas' activities, particularly for its own multi-client datasets.

CGGVeritas counts 5 international processing centers, located in Houston, London, Singapore, Paris and Calgary, added to 25 regional centers open to all its customers. Therefore, CGGVeritas' customers benefit from a privileged access to the expertise of its teams around the world, as well as an unequalled computing power. This is completed by 13 dedicated centers, located within the clients' offices, which makes of CGGVeritas the leader in this sector. The Group believes these dedicated centers are responsive to the trend among oil and gas companies to outsource processing work which they want to retain intimate control over. These dedicated centers enable as well CGGVeritas' experts to liaise directly and to work in close coordination with its clients, and thus to have its processing technologies adapted and evolved to the specific requests of its clients.

CGGVeritas has defined a computer equipment policy that allows the Group to benefit rapidly from the progress of the information technology. Consequently, the quality and turnaround of product delivery is increasing constantly.

Beyond conventional processing and reprocessing, we are also increasingly involved in reservoir-applied geophysics, an activity that encompasses large integrated reservoir studies from reprocessing to full reservoir simulation. It also includes advanced technology studies such as reservoir characterization, stratigraphic inversion and stochastic reservoir modeling. CGGVeritas enhanced its ability to provide these services globally through the expansion of Hampson-Russell reservoir teams into more of its "open" centers, and with the acquisition of Petrodata Consulting LLC, a Moscow-based company offering static and dynamic reservoir modeling, reserve estimation and risking, as well as field development services to the international oil and gas industry.

CGGVeritas operates visualization centers in its Houston, London and Singapore hubs which allow teams of its client's geoscientists and engineers to view and interpret large volumes of complex 3D data. The visualization centers have imaging tools used for advanced interpretive techniques that enhance the understanding of regional as well as detailed reservoir geology. These visualization centers allow the Group to offer its expertise combined with the type of collaborative geophysical model building that is enabling oil companies to explore areas of complex geology such as the large sub-salt plays in the deepwater Gulf of Mexico.

CGGVeritas has groups of scientists available to perform advanced geophysical and geological interpretation. These experts work around the world, using third party and CGGVeritas' own proprietary software to create subsurface models for the clients and advise them on how best to exploit their reservoirs. Their expertise is related to exploration as well as production activities.

Additionally, the Groups licenses its proprietary Hampson-Russell and *geovation* processing software to companies desiring to do their own geophysical processing and interpretation. Research and Development within these commercialized technologies is continuously ongoing. Hampson-Russell released a much anticipated global software redesign to the market (HRS-9) along with an associated new program (LithoSI). Major enhancements to *geovation*, which anticipate future needs, have already progressed into the

development stage. Although commercialized, CGGVeritas retains newly developed technology for proprietary use, until market drivers favor release.

#### Description of the activity in 2011

#### Competition and market

The data processing sector is dominated by CGGVeritas and WesternGeco. Market segmentation is characterized more by client fidelity than in the acquisition sectors, as illustrated by the existence of dedicated processing centers in the office of some clients. Through the progress in computing technologies, CGGVeritas' computing capacities increased significantly in 2011. This progress contributed to the reduction of processing times and the use of more complex and more accurate algorithms.

In 2011, the Processing, Imaging & Reservoir Division revenues were up at 443 MUS\$ (316 M€), a 14% increase in US dollars year on year, illustrating the growth in seismic volumes as clients interest in higher resolution surveys continues to strengthen. Processing, Imaging & Reservoir accounted for 14% of total Group revenues and 19% of total Services revenues in 2011.

#### 2012 Perspectives

CGGVeritas position in data processing and imaging as along with the skills and reputation of its experts and geoscientists make us the industry benchmark in this segment. The Group's strategy for the Processing Imaging and Reservoir business is to:

- Enhance its particular competencies in advanced technologies such as depth imaging, wide azimuth, broad band, multicomponent, 4D processing and reservoir characterization.
- Reinforce its close links with clients through both its open and dedicated centers, including the addition of "technology" centers, which support a collaborative approach to research and development.
- Leverage the natural synergies between seismic acquisition and processing. An example of this is the
  introduction of the BroadSeis technology for broadband marine seismic data, which requires the
  integration of Sercel recording equipment, unique acquisition technique and CGGVeritas proprietary
  processing techniques.

#### 1.2. Equipment Sector

CGGVeritas conducts its equipment development and production operations through Sercel and its subsidiaries. Sercel is the market leader in the development and production of seismic equipment in the land and marine seismic markets. Sercel makes most of its sales to purchasers other than CGGVeritas. As of December 31, 2011, Sercel operated five seismic equipment manufacturing facilities, located in Nantes and Saint Gaudens in France, Houston, Singapore and Alfreton in England. In China, Sercel operates through Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd. <sup>2</sup>, based in Hebei (China), in which Sercel has a 51% equity stake and through Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd.'s

\_

This company is governed by articles of association that detail the company's organization and the sharing of powers. In accordance with the Chinese law applicable to Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd. corporation form, the board of directors represents the supreme body. Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd. Board is composed of 9 members with 5 being appointed by Sercel, 2 by each of the shareholders holding respectively 29.04% and 19.96% of the capital. The chairman of the Board is elected among the Sercel representatives and the general manager in charge of implementing the Board decisions is elected among the Chinese partner holding a 19.96% stake in the capital. The articles of association stipulate that decisions related to modifications of the articles of association, capital increase or decrease and shares sales are subject to unanimity in accordance with Chinese law. Specific decisions as guarantee grant to banks, change of the manufacturing site or approval of annual accounts are taken with a 2/3 majority. Other decisions as approval of the annual budget, capital expenditures budget, dividend payment and appointment or dismissal of the general manager are voted at the simple majority. The articles of association do not provide for any specific provision that could have a direct impact on the financial flows within the Group.

subsidiary Xian Sercel Petroleum Exploration Instrument Co. Ltd. ("Xian-Sercel")<sup>3</sup>. In addition, four sites in Toulouse, Les Ulis, Toulon and Brest (France) are dedicated to borehole tools (for the first two sites), marine sources and submarine acoustic instrumentation, respectively.

#### Description of the activity

Sercel sells its equipment and offers customer support services including training on a worldwide basis. It relates to a complete range of geophysical equipment for seismic data acquisition, including seismic recording equipment, software and seismic sources either for land (vibrators) or marine (air guns). Sercel also supplies its clients with integrated solutions.

With respect to Land equipment, the 428XL was launched on November 2005 as a successor to the 408UL system. This 400 product series represents the market standard. The 428XL continues the characteristics that made the 408 a success, such as an evolutive architecture and the option of mixing different communication media (cable, radio, micro-wave, laser and fiber-optic) to form a true network allowing the user to define data routing and hence avoid obstacles in the field. In addition, the 428 XL offers enhanced possibilities in multi-component and in high density, methods which are more and more required to obtain a high resolution image.

Like the 408 system, the 428 system can be used with the digital sensor unit (DSU) featuring three component digital sensors based on MicroElectroMechanicalSystems (MEMS).

Sercel enhanced its product range in September 2006 by acquiring Vibration Technology Ltd., a Scottish company specialized in wireless acquisition systems whose Unite technology is now fully integrated in the 428 environment.

Sercel is also a market leader for vibroseismic vehicles used as seismic source in land and for vibrator electronic systems (VE 464). Sercel's latest vibrator family, called Nomad, offers high reliability and unique ergonomic features. Nomad is available with either normal tires or a tracked drive system. The track drive system allows Nomad vibrators to operate in terrain not accessible to vehicles with tires. In sand dunes or arctic conditions, this can improve crew productivity. The Nomad was designed to optimize reliability and maintenance in order to allow an intensive use on the field. Sercel also offers the Nomad 90 which is capable of exerting a peak force of 90,000 pounds and is believed to represent the heaviest vibrator on the market.

In addition to recording systems, Sercel develops and produces a complete range of geophysical equipment for seismic data acquisition and other ancillary geophysical products such as geophones, cables and connectors. The acquisition of a 51% stake in Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd., based in China, in 2004, reinforced CGGVeritas' manufacturing capabilities for geophone, cables and connectors, as well as its presence on the Chinese seismic market.

In the down-hole domain, Sercel is offering its latest generation VSP tool, MaxiWave®, which received good returns from clients.

With respect to marine equipment, the Seal system, capitalizes on the 408 architecture and electronics as well as on the latest streamer manufacturing methods. The Seal is currently the sole system with integrated electronics and now benefits from the 428 technological enhancements. In 2005, Sercel launched the Sentinel solid streamer that is the outcome of the technological synergies realized in acquisitions performed these last years. The Sentinel cables are a market standard and are used to equip a majority of new seismic vessels.

<sup>3</sup> The joint venture constituted at 60-40% respectively between BGP and Sercel has been transferred to Hebei Sercel-JunFeng Geophysical Prospecting Equipment Co. Ltd. which became the sole shareholder as from November 4, 2010.

Sercel has recently launched SeaRay, an ocean bottom cable offered under several configurations for depth of 100 to 500 meters. This cable is based on the 428 family acquisition systems technology and allows multi-components recording owe to its DSU 3 components.

The marine range of products has been further improved with the launch of SeaProNav, a navigation software allowing the real-time positioning for streamers and Nautilus, a totally integrated system for positioning seismic streamers. These two products received a favorable reception from first users.

In 2010, Sercel, through Optoplan, delivered to a client a first permanent seabed recording system with fiber optic cable.

Sercel significantly expanded its product range and increased its market share in the seismic equipment industry in pursuing an active strategy of acquisition of business or technology launched with the acquisitions of GeoScience Corporation in December 1999 and Mark Product in 2000. This strategy has been confirmed with the acquisition in October 2003, of Sodera S.A., a leading provider of air gun sources used mainly in marine seismic data acquisition and in 2004 with the acquisitions of a division of Thales Underwater Systems Pty Ltd. that developed and manufactured surface marine seismic acquisition systems, particularly solid streamers, and seabed marine seismic acquisition systems, of Orca Instrumentation specialized in sub marine acoustics and of Createch in the borehole tools domain. In September 2006, Sercel acquired Vibration Technology Ltd, a Scottish company specialized in wireless systems. In May, 2008, Sercel acquired Metrolog, specialized in down-hole gauges, and in December 2008, Sercel acquired Quest Geo Solutions, a UK company focusing on navigation software. Early in 2009, Sercel acquired Optoplan, the Norwegian subsidiary of Wavefield specialized in permanent seabed recording systems using fiber optic technology.

As a result of these acquisitions, Sercel is a market leader in the development and production of both marine and land geophysical equipment. It is a global provider for the seismic acquisition industry with a balanced industrial position in terms of both product range and geographical presence on the two Atlantic shores and in Asia-Pacific.

#### Description of the 2011 activity

In 2011, Sercel had a global revenue of 1,142 MUS\$ (816M€), a 14 % increase in US dollar terms compared to 2010, representing an increase similar to the one of the equipment market.

Sercel external revenue in 2011 amounted 891 MUS\$ (636 M€), an increase of 9% in US dollar terms compared to 2010, and representing 28 % of CGGVeritas consolidated revenue in 2011.

#### Competition and market

Upon CGGVeritas' estimates, the worldwide demand for geophysical equipment increased within the same magnitude in 2011. This growth was mainly driven by the land demand with the increase of high channel crews and the growth of the Latin American market while marine demand was decreasing with a lower number of new build vessels. Sercel's market share is estimated at around 60%.

The principal competitor for the manufacture of marine seismic equipment is Ion Geophysical Inc. For land products, competitors are Inova (a joint venture between BGP and Ion Geophysical Inc) and Oyo Geospace. The market for seismic survey equipment is highly competitive and is characterized by continual and rapid technological change. We believe that technology is the principal basis for competition in this market, as oil and gas companies have increasingly demanded new equipment for activities such as reservoir management and data acquisition in difficult terrain. Oil and gas companies have also become more demanding with regard to the quality of data acquired. Other competitive factors include price and customers' support services.

#### 2012 outlook

Sercel plans to use continuous and intensive R&D efforts, combined with dedicated business acquisitions, to expand Sercel's range of seismic acquisition equipment with advanced technology. The Group estimates that the market should in 2012 face a growth of more than 10%, Sercel market share remaining the same or superior. In addition thereto, the geophysical market has been characterized by an increasing demand for technology intensity both in land and in marine for high resolution imaging and we anticipate that this trend should continue over 2012. This should be favourable to Sercel due to its strong installed base. Therefore, based on CGGVeritas internal assumptions related to the seismic equipment market, Sercel estimates that it should maintain its leading position in the seismic data equipment market by capitalizing on growth opportunities resulting from the strength of its current product base, the application of new technologies in all of its products as well as from its diversified geographical presence, including in emerging markets. Moreover, the acquisition of Geophysical Research Corporation in January 2012 will allow Sercel to strenghten its diversification into the well environment and more specifically the artificial lift market.

#### 2. 2010 RESULTS: GROUP AND CGG VERITAS SA (MOTHER COMPANY)

#### 2.1. Corporate financial statements of CGG Veritas SA

Operating revenues of CGG Veritas S.A. for the year ended December 31, 2011 were €10.5 million compared to €10.9 million for the year ended December 31, 2010.

Operating loss for the year ended December 31, 2011 amounted to €37.2 million compared to €21.8 million for the year ended December 31, 2010 mainly due to the increase of finance lease expenses following the use of our new head office in Massy in the fourth quarter of 2010 and the accelerated amortization of issuing fees related to the repayment of our US\$530 million 7½ % Senior Notes due 2015.

Financial income for the year ended December 31, 2011 amounted to €569.6 million compared to €213.4 million for the year ended December 31, 2010. This increase was mainly attributable to dividends received for €589 million, of which €475 million paid in CGGVeritas Services shares in 2011, compared to €187 million for 2010.

Extraordinary losses for the year ended December 31, 2011 amounted to €8.0 million mainly due to a US\$19 million premium paid as a result of the early redemption of our US\$530 million 7½ % Senior notes due 2015 and a €7.0 million gain on sell of intangible assets. Extraordinary result for the year ended December 31, 2010 amounted to €16.5 million.

Net income for the year ended December 31, 2011, after positive income tax of €32.7 million due to the French tax group effect, was €557.2 million compared to a loss of €225.4 million for the year ended December 31, 2010.

The shareholders' equity as of December 31, 2011 amounted to €2.5 billion compared to €1.9 billion as of December 31, 2010.

No dividends have been distributed in the last three fiscal years.

#### 2.2. Consolidated results

#### Revenues

Our consolidated operating revenues for the year ended December 31, 2011 increased 4% to €2,267.7 million from €2,186.1 million for 2010. In U.S. dollars terms, our consolidated operating revenues for the year ended December 31, 2011 increased 10% to US\$3,180.4 million from US\$2,904.2 million for 2010.

Operating revenues for the Services segment increased 4% to €1,631.3 million for the year ended December 31, 2011 from €1,566.9 million for 2010. In U.S. dollar terms, operating revenues for 2011 increased 10% to US\$2,289.5 million from 2,083.0 million.

Operating revenues for the Equipment segment, excluding intra-group sales, increased 3% to €636.4 million for the year ended December 31, 2011 from €619.2 million for 2010. In US dollar terms, operating revenues for 2011 increased 9% to US\$890.9 from US\$821.2 for 2010.

#### Operating Income (loss)

Operating income for the year ended December 31, 2011 was €147.9 million compared to €67.2 million for 2010. In U.S. dollar terms, operating income for the year ended December 31, 2011 was US\$207.5 million compared to US\$89.3 million for 2010. Before restructuring costs and impairment of multi-Client surveys in 2010, operating income was €165.7 million (US\$220 million).

Operating income from the Services segment for the year ended December 31, 2011 was €6.2 million compared to a €68.6 million loss for 2010. In U.S. dollar terms, operating income for the year ended December 31, 2011 was US\$8.7 million compared to a US\$91.5 million loss for 2010. Before restructuring costs and impairment of multi-client surveys, operating income was US\$37.1 million for 2010.

Operating income from the Equipments segment for the year ended December 31, 2011 increased 17% to €253.7 million from €217.2 million for 2010. In U.S. dollar terms, operating income for year ended December 31, 2011 increased 23% to US\$355.2 million from US\$288.1 million for 2010.

#### Cost of financial debt

Cost of net financial debt amounted to €124.4 million for the year ended December 31, 2011 compared to €105.5 million for 2010 mainly due to (i) the accelerated amortization of US\$22 million in issuing fees related to the redemption of our US\$530 million 7½ % Senior Notes due 2015, and repayment of the US\$508 million outstanding under our term loan B facility, (ii) US\$2.8 million of interest paid on our 7½ % Senior Notes due 2015 between the issuance, on January 27, 2011, of our convertible bonds for a total nominal amount of €360 million and the partial redemption of the Senior Notes due 2015 with the proceeds of the convertible bonds, and (iii) the issuance of our US\$650 million principal amount of 6½ % Senior Notes due 2021. In U.S. dollar terms, cost of financial debt amounted to US\$174.4 million compared to US\$140.1 million for 2010.

#### Income taxes

Income taxes increased to €45.0 million for the year ended December 31, 2011 from €13.5 million for 2010. In U.S. dollar terms, income taxes for the year ended December 31, 2011 increased to US\$63.1 million from US\$17.9 million. As a result of 2012-2014 forecasts, a €52 million deferred tax asset was recognized on our remaining French loss carry forward. In 2010, a deferred tax asset of €42 million related to our loss carry forward in France was recorded.

#### Equity in income of affiliates

Income from investments accounted for under the equity method amounted to €11.7 million for the year ended December 31, 2011 compared to a loss €0.7 million for 2010. In U.S. dollar terms, income from investments accounted for under the equity method amounted to US\$16.4 million for the year ended December 31, 2011 compared to a loss of US\$0.9 million for 2010.

#### Net income

Net loss for the year ended December 31, 2011 was €9.2 million compared to €44.0 million for 2010.

Net loss attributable to the owners of CGG Veritas was €19.0 million for the year ended December 31, 2011 compared to €54.6 million for 2010.

#### 3. COMMENTS ON THE FINANCIAL CONDITION OF THE COMPANY AND THE GROUP

#### **Definition of EBITDAS**

We define EBITDAS as earnings before interest, tax, depreciation, amortization and share-based compensation cost. Share-based compensation includes both stock options and performance shares.

EBITDAS was €607.3 million for the year ended December 31, 2011 compared to €596.2 million and €658.9 million for 2010 and 2009, respectively.

#### **Liquidity and Capital Resources**

Our principal capital needs are for the funding of ongoing operations, capital expenditures (particularly repairs and improvements to our seismic vessels and acquisition of seismic vessels), investments in our multi-client data library and acquisitions.

We intend to fund our liquidity needs through cash generated by operations, senior notes and borrowings under our U.S. and French senior secured revolving credit facilities. Our U.S. revolving credit facility is for US\$140 million (undrawn as of December 31, 2011) maturing January 2014, and our French revolving credit facility is for US\$200 million (undrawn as of December 31, 2011) maturing February 2014. We have also raised funds through issuances of shares and convertible bonds and may do so in the future.

We believe that we are not subject to near-term liquidity constraints, given our liquidity available as of December 31, 2011, our cash flow generation capability and prospects, and our near-to mid-term debt repayment schedule.

#### **Operations**

Our net cash provided by operating activities was €581.4 million for the year ended December 31, 2011, compared to €450.0 million for 2010.

Before changes in working capital, net cash provided by operating activities for the year ended December 31, 2011 amounted to €498.6 million compared to €500.9 million for 2010. Changes in working capital had a favorable impact on cash from operating activities of €82.8 million in 2011 compared to an unfavorable impact of €50.9 million for 2010 mainly due to customer payments of trade accounts and notes receivable.

#### **Investing Activities**

Net cash used in investing activities was €402.3 million for the year ended December 31, 2011 compared to €418.6 million for 2010.

In 2011, we purchased tangible and intangible assets of €260.7 million, mainly for the upgrade of our seismic vessels *Oceanic Phoenix* and *Oceanic Endeavour* and for equipping the *Pacific Finder* and the *Oceanic Sirius* with Sentinel streamers, compared to €210.4 million in 2010.

We also invested €163.3 million in non-exclusive surveys, primarily in North America, the North Sea and Brazil compared to €219.3 million in 2010. As of December 31, 2011, the net book value of our marine and land Multi-Client data library was €407.5 million compared to €451.2 million as of December 31, 2010.

#### **Financing Activities**

Net cash used in financing activities during the year ended December 31, 2011 was €115.3 million compared to €207.8million in 2010.

Issue of bonds convertible into and/or exchangeable for new or existing shares

On January 27, 2011, we issued 12,949,640 bonds convertible into and/or exchangeable for new or existing shares of our company to be redeemed on January 1, 2016 for a total nominal amount of €360 million. We used the net proceeds of the issuance to partially redeem our US\$530 million 7.5% Senior Notes due May 2015, allowing us to reduce our cash interest expense.

The bonds' nominal value was set at €27.80 per bond, representing an issue premium of 25% of the CGGVeritas' reference share price on the regulated market of NYSE Euronext in Paris. The Bonds bear interest at a rate of 1.75% payable semi-annually in arrears on January 1 and July 1 of each year. The bonds entitle the holders to receive new and/or existing CGGVeritas shares at the ratio of one share per one bond, subject to adjustments. Under certain conditions, the bonds may be redeemed prior to maturity at our option.

Issue of 6½ % senior notes due 2021

On May 31, 2011, we issued US\$650 million principal amount of  $6\frac{1}{2}$  % senior notes due June 1, 2021. The senior notes were issued at a price of 96.45% of their principal amount, resulting in a yield of 7%. We used the net proceeds of the issuance to redeem the remainder of our US\$530 million  $7\frac{1}{2}$ % Senior Notes due May 2015 and to repay in full the US\$508 million outstanding under our term loan B facility.

Redemption of 7½ % Senior Notes due 2015

On March 1, 2011, we redeemed US\$460 million aggregate principal amount of our US\$530 million 7½ % Senior Notes due 2015 at a price of 103.75% plus accrued interest, and on June 30, 2011,we redeemed the remaining US\$70 million aggregate principal amount of such notes at a price of 102.5% plus accrued interest. The redemptions were financed through the bond issuances described immediately above.

Redemption of term loan B facility

On June 2, 2011, we repaid in full the US\$508 million outstanding under our term loan B facility with the proceeds of our issuance of senior bonds due 2021 described above.

Net financial debt was €1,090.2 million as of December 31, 2011, €1,149.7 million as of December 31, 2010 and €918.7 million as of December 31, 2009. The ratio of net financial debt to equity was 37% as of December 31, 2011, 41% as of December 31, 2010 and 35% as of December 31, 2009.

"Gross financial debt" is the amount of bank overdrafts, plus current portion of financial debt, plus long-term debt, and "net financial debt" is gross financial debt less cash and cash equivalents. The following table presents a reconciliation of net financial debt to financing items of the balance sheet at end of fiscal year:

	D	ecember 31,	
	2011	2010	2009
	(in m	illions of euro	s)
Bank overdrafts	4.6	4.5	2.7
Current portion of long-term debt	49.9	74.5	113.5
Long-term debt	1,446.5	1,406.6	1,282.8
Gross financial debt	<u>1,501.0</u>	<u>1,485.6</u>	<u>1,399.0</u>
Less cash and cash equivalents	<u>(410.7)</u>	<u>(335.9)</u>	<u>(480.3)</u>
Net financial debt	1,090.3	<b>1,149.7</b>	<u>918.7</u>

#### 4. INFORMATION ON TERMS OF PAYMENT (ARTICLE D.441-4 OF THE FRENCH COMMERCIAL CODE)

As of December 31, 2011, the debt balance of the Company towards its suppliers amounted to €5.1 million and was divided as follows:

due date not exceeding 30 days: €4.6 million
due date not exceeding 60 days: €0.4 million
due date exceeding 60 days: €0.1 million

#### 5. RISK FACTORS

Risks factors are presented by order of importance in each category listed in paragraphs 5.1, 5.2, 5.3 and 5.4.

In accordance with article L. 823-19 of the Commercial Code, during fiscal year 2011, the audit committee reviewed some of the significant risks of the Group.

#### 5.1. Risks related to our business

### **5.1.1.** Current economic uncertainty and the volatility of oil and natural gas prices could have a significant adverse effect on us.

Global market and economic conditions are uncertain and volatile. In the past, economic contractions and uncertainty have weakened demand and lowered prices for oil and natural gas, resulting in a reduction in the levels of exploration for hydrocarbons and demand for our products and services. It is difficult to predict how long the current economic conditions will persist, whether they will deteriorate further, and which of our products and services will be adversely affected. We may have impairment losses as events or changes in circumstances occur that reduce the fair value of an asset below its book value. These conditions could have a material adverse effect on our business, results of operations, financial condition and cash flows.

Uncertainty about the global economy has had and is likely to continue to have a significant adverse impact on commercial performance and financial condition of many companies, which may affect some of our customers and suppliers. The current economic climate may lead customers to cancel or delay orders or leave suppliers unable to provide goods and services as agreed. Our government clients may face budget deficits that prohibit them from funding proposed and existing projects or that cause them to exercise their right to terminate our contracts with little or no prior notice. If our suppliers, vendors, subcontractors or other counterparties are unable to perform their obligations to us or our customers, we may be required to provide additional services or make alternate arrangements on less favorable terms with other parties to ensure adequate performance and delivery of service to our customers. These circumstances could also lead to disputes and litigation with our partners or customers, which could have a material adverse impact on our reputation, business, financial condition and results of operations.

Turmoil in the credit markets, such as has been experienced in recent periods, could also adversely affect us and our customers. Limited access to external funding has in the past caused some customers to reduce their capital spending to levels supported by their internal cash flow. Some companies have found their access to liquidity constrained or subject to more onerous terms. In this context, our customers may not be able to borrow money on reasonable terms or at all, which could have a negative impact on their demand for our products, and impair their ability to pay us for our products and services on a timely basis, or at all.

In addition, the potential impact on the liquidity of major financial institutions may limit our ability to fund our business strategy through borrowings under either existing or new debt facilities in the public or private markets and on terms we believe to be reasonable. Persistent volatility in the financial markets could have a material adverse effect on our ability to refinance all or a portion of our indebtedness and to otherwise fund our operational requirements. We cannot be certain that additional funds will be available if needed to make future investments in certain projects, take advantage of acquisitions or other opportunities or respond to competitive pressures. If additional funds are not available, or are not available on terms satisfactory to us, there could be a material adverse impact on our business and financial performance.

Furthermore, our cash balances and short-term investments are maintained in accounts held at major banks and financial institutions located primarily in Europe and North America. Deposits are in amounts that exceed available insurance. Although none of the financial institutions in which we hold our cash and investments have gone into bankruptcy, been forced into receivership, or have been seized by their governments, there is a risk that this may occur in the future. If this were to occur, we would be at risk of not being able to access our cash which may result in a temporary liquidity crisis that could impede our ability to fund operations.

#### **5.1.2.** We are subject to risks related to our international operations.

With operations worldwide, including in emerging markets, our business and results of operations are subject to various risks inherent in international operations. These risks include:

- Instability of foreign economies and governments, which can cause investment in capital projects by our potential clients to be withdrawn or delayed, reducing or eliminating the viability of some markets for our services;
- Risks of war, uprisings, riots, terrorism, and civil disturbance, which can make it unsafe to continue operations, adversely affect budgets and schedules and expose us to losses;
- Risk of piracy, which may result in the delay or termination of customer contracts in affected areas;
- Seizure, expropriation, nationalization or detention of assets, renegotiation or nullification of existing contracts:
- Foreign exchange restrictions, import/export quotas, sanctions and other laws and policies affecting taxation, trade and investment; and

 Availability of suitable personnel and equipment, which can be affected by government policy, or changes in policy, that limit the importation of qualified crew members or specialized equipment in areas where local resources are insufficient.

We are exposed to these risks in all of our international operations to some degree, particularly in emerging markets where the political and legal environment is less stable. We are subject to the risk of material adverse developments with respect to our international operations and any insurance coverage we have may not be adequate to compensate us for any losses arising from such risks.

Revenue generating activities in certain foreign countries may require prior United States government approval in the form of an export license and may otherwise be subject to tariffs and import/export restrictions. These laws can change over time and may result in limitations on our ability to compete globally. In addition, non-U.S. persons employed by our separately incorporated non-U.S. entities may conduct business in some foreign jurisdictions that are subject to U.S. trade embargoes and sanctions by the U.S. Office of Foreign Assets Control, including Cuba, Iran, Sudan and Syria, which have been designated by the U.S. government as state sponsors of terrorism. We have typically generated revenue in some of these countries through the performance of marine surveys, the provision of data processing and reservoir consulting services and the sale of software licenses and software maintenance. We have current and ongoing relationships with customers in these countries. We have procedures in place to conduct these operations in compliance with applicable U.S. laws. However, failure to comply with U.S. laws on equipment and services exports could result in material fines and penalties, damage to our reputation and negatively affect the market price of our securities. We have provided information during 2011 to the U.S. Department of Commerce's Bureau of Industry and Security (BIS) concerning shipments to our vessels operating in or near Cuba that may not have complied fully with our internal policies and possibly violated applicable export controls and sanctions laws.

Certain of our clients and certain tax, social security or customs authorities may request that we or certain of our subsidiaries post performance bonds or guarantees issued by banks or insurance companies, including in the form of stand-by letters of credit, in order to guarantee our legal or contractual obligations. We cannot assure you that we will be able to provide these bonds or guarantees in the amounts or durations required or for the benefit of the necessary parties. Our failure to comply with these requests could reduce our capacity to conduct business or perform our contracts. In addition, if we do provide these bonds or guarantees, our clients or the relevant authorities may call them under circumstances that we believe to be improper, and we may not be able to challenge such actions effectively in local courts.

We and certain of our subsidiaries and affiliated entities also conduct business in countries where there is government corruption. We are committed to doing business in accordance with all applicable laws and our codes of ethics, but there is a risk that we, our subsidiaries or affiliated entities or their respective officers, directors, employees or agents may act in violation of our codes and applicable laws, including the Foreign Corrupt Practices Act of 1977. Any such violations could result in substantial civil and criminal penalties and might materially adversely affect our business and results of operations or financial condition.

#### **5.1.3.** We are subject to certain risks related to acquisitions.

In the past we have grown by acquisitions, some of which, such as the merger with Veritas in 2007 or the acquisition of Wavefield in 2008, were quite significant. Such transactions, whether completed, pending or likely to be completed in the future, present various financial and management-related risks that can be material, such as integration of the acquired businesses in a cost-effective manner; implementation of a combined business strategy; diversion of management's attention; outstanding or unforeseen legal, regulatory, contractual, labor or other issues arising from the acquisitions; additional capital expenditure requirements; retention of customers; combination of different company and management cultures; operations in new geographic markets; the need for more extensive management coordination; and retention, hiring and training of key personnel. Should any of these risks associated with acquisitions

materialize, they could have a material adverse effect on our business, financial condition and results of operations.

#### **5.1.4.** We may need to write down goodwill from our balance sheet.

We have been involved in a number of business combinations in the past, leading to the recognition of large amounts of goodwill on our balance sheet. Goodwill on our balance sheet totaled €2,077.6 million as of December 31, 2011. Goodwill is allocated to cash generating units ("CGUs") as described in note 11 to our consolidated financial statements for the year ended December 31, 2011. The recoverable amount of a CGU is estimated at each balance sheet date and is generally determined on the basis of a group-wide estimate of future cash flows expected from the CGU in question. The estimate takes into account, in particular, the removal from service of certain assets used in our business (such as decommissioning or coldstacking vessels) or any significant underperformance in cash generation relative to previously-expected results, which may arise, for example, from the underperformance of certain assets, a deterioration in industry conditions or a decline in the economic environment. At each balance sheet date, if we expect that a CGU's recoverable amount will fall below the amount of goodwill recorded on the balance sheet, we may write down that goodwill in part or in whole. Such a write-down would not in itself have an impact on cash flow, but could have a substantial negative impact on our operating income and net income, and as a result, on our shareholders' equity and net debt/equity ratio.

## 5.1.5. We invest significant amounts of money in acquiring and processing seismic data for multi-client surveys and for our data library without knowing precisely how much of the data we will be able to sell or when and at what price we will be able to sell the data.

We invest significant amounts of money in acquiring and processing seismic data that we own. By making such investments, we are exposed to the following risks:

- We may not fully recover the costs of acquiring and processing the data through future sales. The amounts of these data sales are uncertain and depend on a variety of factors, many of which are beyond our control. In addition, the timing of these sales is unpredictable, and sales can vary greatly from period to period. Each of our individual surveys has a limited book life based on its location, so a particular survey may be subject to significant amortization even though sales of licenses associated with that survey are weak or non-existent, thus reducing our net income.
- Technological or regulatory changes or other developments could also materially adversely affect the value of the data. For example, regulatory changes such as limitations on drilling could affect the ability of our customers to develop exploration programs, either generally or in a specific location where we have acquired seismic data and technological changes could make existing data obsolete.
- The value of our multi-client data could be significantly adversely affected if any material adverse change occurs in the general prospects for oil and gas exploration, development and production activities in the areas where we acquire multi-client data or more generally.
- Any reduction in the economic value of such data will require us to write down its recorded value, which could have a material adverse effect on our results of operations.

#### 5.1.6. Our results of operations may be significantly affected by currency fluctuations.

We derive a substantial portion of our revenues from international sales, subjecting us to risks relating to fluctuations in currency exchange rates. Our revenues and expenses are mainly denominated in U.S. dollars and euros, and to a significantly lesser extent, in Canadian dollars, Brazilian reais, Australian dollars, Norwegian kroner and British pounds. Historically, a significant portion of our revenues that were invoiced in euros related to contracts that were effectively priced in U.S. dollars, as the U.S. dollar often serves as the reference currency when bidding for contracts to provide geophysical services.

Fluctuations in the exchange rate of the euro against such other currencies, particularly the U.S. dollar, have had in the past and will have in the future a significant effect upon our results of operations, which are reported in euros. For financial reporting purposes, depreciation of the U.S. dollar against the euro will negatively affect our reported results of operations since U.S. dollar-denominated earnings that are converted to euros are stated at a decreased value. Moreover, and in addition to the impact of the conversion of the U.S. dollar at a decreased value, since we participate in competitive bids for data acquisition contracts that are denominated in U.S. dollars, the depreciation of the U.S. dollar against the euro harms our competitive position against companies whose costs and expenses are denominated to a greater extent in U.S. dollars. While we attempt to reduce the risks associated with such exchange rate fluctuations through our hedging policy, we cannot assure you that we will maintain our profitability level or that fluctuations in the values of the currencies in which we operate will not materially adversely affect our future results of operations. As of the date of this annual report, we estimate our annual fixed expenses in euros to approximately €400 million and as a result, an unfavorable variation of US\$0.1 in the average yearly exchange rate between the U.S. dollar and the euro would reduce our operating income and our shareholders' equity by approximately US\$40 million

### 5.1.7. Our working capital needs are difficult to forecast and may vary significantly, which could result in additional financing requirements that we may not be able to meet on satisfactory terms, or at all.

It is difficult for us to predict with certainty our working capital needs. This difficulty is due primarily to working capital requirements related to the marine seismic acquisition business and related to the development and introduction of new lines of geophysical equipment products. For example, under specific circumstances, we may have to extend the length of payment terms we grant to customers or may increase our inventories substantially. We may therefore be subject to significant and rapid increases in our working capital needs that we may have difficulty financing on satisfactory terms, or at all, due notably to limitations in our debt agreements or market conditions.

#### **5.1.8.** Our results of operations may be affected by fluctuations in fuel costs.

Our marine acquisition business, with a fleet of 19 seismic vesselsincurs significant fuel costs, which were approximately US\$ 184 million in 2011. Fuel costs can vary significantly depending on the supply location, local regulations and the price of crude oil at a given time. Only a portion of this variation can be contractually charged to or negotiated with the client. We therefore estimate that an increase by 20% of the average annual price of crude oil could increase our fuel costs by approximately US\$ 25 million on our operating income.

## 5.1.9. Technological changes and new products and services are frequently introduced in the market, and our technology could be rendered obsolete by these introductions, or we may not be able to develop and produce new and enhanced products on a cost-effective and timely basis.

Technology changes rapidly in the seismic industry, and new and enhanced products are frequently introduced in the market for our products and services, particularly in our equipment manufacturing and data processing and geosciences sectors. Our success depends to a significant extent upon our ability to develop and produce new and enhanced products and services on a cost-effective and timely basis in accordance with industry demands. While we commit substantial resources to research and development, we may encounter resource constraints or technical or other difficulties that could delay the introduction of new and enhanced products and services in the future. In addition, the continuing development of new products risks making our older products obsolete. New and enhanced products and services, if introduced, may not gain market acceptance and may be materially adversely affected by technological changes or product or service introductions by one of our competitors.

### 5.1.10. We depend on proprietary technology and are exposed to risks associated with the misappropriation or infringement of that technology.

Our ability to maintain or increase prices for our products and services depends in part on our ability to differentiate the value delivered by our products and services from those delivered by our competitors. Our proprietary technology plays an important role in this differentiation. We rely on a combination of patents, trademarks and trade secret laws to establish and protect our proprietary technology. Patents last up to 20 years, depending on the date of filing and the protection accorded by each country. In addition, we enter into confidentiality and license agreements with our employees, customers and potential customers which limit access to and distribution of our technology. However, actions that we take to protect our proprietary rights may not be adequate to deter the misappropriation or independent third-party development of our technology. In addition, we may have lawsuits filed against us claiming that certain of our products, services, and technologies infringe the intellectual property rights of others. For example, we have been engaged since 2006 in litigation in the United States brought by our competitor ION Geophysical, which asserts patent violations in respect of digital sensor (DSU) technology used in some of Sercel's seismic data acquisition products manufactured in the past in the United States. Although we do not believe that any current litigation - involving our intellectual property rights or the intellectual rights of others will have a material impact on us, such litigation may take place in the future. In addition, the laws of certain foreign countries do not protect proprietary rights to the same extent as either the laws of France or the laws of the United States, which may limit our ability to pursue third parties that misappropriate our proprietary technology.

## 5.1.11. The nature of our business subjects us to significant ongoing operating risks for which we may not have adequate insurance or for which we may not be able to procure adequate insurance on acceptable terms, if at all.

We are exposed to significant ongoing operating risks:

- Our seismic data acquisition activities, particularly in deepwater marine areas, are often conducted
  under harsh weather and other hazardous operating conditions, including the detonation of dynamite.
  These operations are subject to the risk of downtime or reduced productivity, as well as to the risks of
  loss to property and injury to personnel resulting from fires, accidental explosions, mechanical failures,
  spills, collisions, stranding, ice floes, high seas and natural disasters. In addition to losses caused by
  human errors and accidents, we may also be subject to losses resulting from, among other things, war,
  terrorist activities, piracy, political instability, business interruption, strikes and weather events;
- Our extensive range of seismic products and services expose us to litigation and legal proceedings including those related to product liability, personal injury and contract liability; and
- We produce and sell highly complex products and we cannot assure you that our extensive product
  development, manufacturing controls and testing will be adequate and sufficient to detect all defects,
  errors, failures, and quality issues that could affect our customers and result in claims against us or result
  in order cancellations or delays in market acceptance.

We have put in place insurance coverage against operating hazards, including product liability claims and personal injury claims, damage, destruction or business interruption related to our equipment, data processing centers, manufacturing centers and other facilities to the extent deemed prudent by our management and in amounts we consider appropriate in accordance with industry practice. Whenever possible, we obtain agreements from customers that limit our liability.

However, we cannot assure you that the nature and amount of insurance will be sufficient to fully indemnify us against liabilities arising from pending and future claims or that our insurance coverage will be adequate in all circumstances or against all hazards, and that we will be able to maintain adequate insurance coverage in the future at commercially reasonable rates or on acceptable terms.

### 5.1.12. Disruptions to our supply chain may adversely affect our ability to deliver our products and services to our customers.

Our supply chain is a complex network of internal and external organizations responsible for the supply, manufacture and logistics supporting our products and services around the world. We are vulnerable to disruptions in this supply chain from changes in government regulations, tax and currency changes, strikes, boycotts and other disruptive events as well as from unavailability of critical resources. These disruptions may have an adverse impact on our ability to deliver products and services to our customers.

### 5.1.13. Our failure to attract and retain qualified employees may materially adversely affect our future business and operations.

Our future results of operations will depend in part upon our ability to retain our existing highly skilled and qualified employees and to attract new employees. A number of our employees are highly skilled scientists and technicians. We compete with other seismic products and services companies and, to a lesser extent, companies in the oil industry for skilled geophysical and seismic personnel, particularly in times when demand for seismic services is relatively high. A limited number of such skilled personnel is available, and demand from other companies may limit our ability to fill our human resources needs. If we are unable to hire, train and retain a sufficient number of qualified employees, this could impair our ability to compete in the geophysical services industry and to develop and protect our know-how. Our success also depends to a significant extent upon the abilities and efforts of members of our senior management, the loss of whom could materially adversely affect our business and results of operations.

#### 5.1.14. We have had losses in the past and there is no assurance of our profitability for the future.

We have experienced losses in the past. In 2007 and 2008, our net profit attributable to shareholders amounted to €245.5 million and €332.8 million, respectively. In 2009, 2010 and 2011, we recorded a net loss attributable to shareholders of €264.3 million, €54.6 million and €19 million, respectively. There is therefore no assurance as to our profitability for the future.

#### 5.2. Risks related to our industry

### 5.2.1. The volume of our business depends on the level of capital expenditures by the oil and gas industry, and reductions in such expenditures may have a material adverse effect on our business.

Demand for our products and services has historically been dependent upon the level of capital expenditures by oil and gas companies for exploration, production and development activities. These expenditures are significantly influenced by hydrocarbons prices and by expectations regarding future hydrocarbons prices. Oil and gas prices may fluctuate based on relatively minor changes in the supply of and demand for oil and gas, expectations regarding future supply of and demand for hydrocarbons and certain other factors beyond our control. Lower or volatile oil and gas prices tend to limit the demand for seismic services and products.

Factors affecting the prices of hydrocarbons (and, consequently, demand for our products and services) include:

- Demand for hydrocarbons;
- Worldwide political, military and economic conditions, including political developments in the Middle East, economic growth levels, the availability of financing and the ability of OPEC to set and maintain production levels and prices for oil;
- Laws or regulations restricting the use of fossil fuels or taxing such fuels and governmental policies regarding atmospheric emissions and use of alternative energy;
- Levels of oil and gas production;
- The rate of decline of existing and new oil and gas reserves and market suplly delays;

- Oil and gas inventory levels;
- The price and availability of alternative fuels;
- Policies of governments regarding the exploration for and production and development of oil and gas reserves in their territories; and
- Global weather conditions, with warmer temperatures decreasing demand for products such as heating oil and extreme weather events potentially disrupting oil and gas exploration or production operations over a wide area.

Increases in oil and natural gas prices may not increase demand for our services or otherwise have a positive effect on our financial condition or results of operations. Forecasted trends in oil and gas exploration and development activities may not continue and demand for our products may not reflect the level of activity in the industry. For example, at the end of 2009, there were indications that oil and gas companies would increase their exploration expenses, leading to a rebound in demand. Most seismic companies then accelerated the launch of new capacities or released vessels that had been removed from operation to anticipate the beginning of a new growth cycle. But the Deepwater Horizon platform disaster in April 2010 severely reduced the demand for seismic studies in the Gulf of Mexico. Demand in marine seismic capacity grew elsewhere as expected, but not enough to offset the reduction in the number of vessels operating in the Gulf of Mexico. Consequently, a sustained imbalance between supply and demand continued through 2010 and 2011 and prices remained flat.

#### 5.2.2. Our backlog includes contracts that can be unilaterally terminated at the client's option.

In accordance with industry practice, contracts for the provision of seismic services typically can be canceled at the sole discretion of the client without payment of significant cancellation costs to the service provider. As a result, even if contracts are recorded in backlog, there can be no assurance that such contracts will be wholly executed by us and generate actual revenue, or even that the total costs already incurred by us in connection with the contract would be covered in full pursuant to any cancellation clause.

## 5.2.3. We are subject to intense competition in the markets where we carry out our operations, which could limit our ability to maintain or increase our market share or maintain our prices at profitable levels.

Most of our contracts are obtained through a competitive bidding process, which is standard for the seismic services industry in which we operate. Competitive factors in recent years have included price, crew availability, technological expertise and reputation for quality, safety and dependability. While no single company competes with us in all of our segments, we are subject to intense competition in each of our segments. We compete with large, international companies as well as smaller, local companies. In addition, we compete with major service providers and government-sponsored enterprises and affiliates. Some of our competitors operate more data acquisition crews than we do and have greater financial and other resources. These and other competitors may be better positioned to withstand and adjust more quickly to volatile market conditions, such as fluctuations in oil and gas prices and production levels, as well as changes in government regulations. In addition, if geophysical service competitors increase their capacity (or do not reduce capacity if demand decreases), the excess supply in the seismic services market could apply downward pressure on prices. The negative effects of the competitive environment in which we operate could have a material adverse effect on our results of operations.

### 5.2.4. We have taken significant measures to adapt our fleet to changes in the seismic market, and we may take temporary additional measures in the future that could impose exceptional charges.

We have taken significant measures to adapt our fleet to changes in the seismic market, and we may take temporary additional measures in the future that could impose exceptional charges.

In order to adjust to reduced demand in the seismic market and to reposition our fleet toward the high-end of that market (more than 10 streamers), we decided in 2009 to reduce our fleet capacity to 19 vessels by decommissioning nine medium-capacity 2D and 3D vessels. This decommissioning program was fully completed as of September 30, 2010. In 2010, we began implementing a propulsion and streamer upgrade plan in respect of four vessels (Viking Vanquish, Oceanic Phoenix (formerly named *Geowave Master*), Oceanic Endeavour (formerly named Geowave Endeavor) and Geowave Champion). All of these upgrades have been completed except for the Geowave Champion, which is currently dry docked and is scheduled to be released from the yard at the beginning of the 2012 second quarter. The vessel upgrade plan reduced our vessel availability rate by approximately five points over 2011 and we estimate it will reduce the vessel availability rate by approximately two points in 2012. In an effort to reposition the 3D fleet toward high capacity vessels, we intend to terminate our charter contract for the eight streamer Geowave Commander vessel prior to its scheduled expiration in 2013. Conditions in the seismic market could lead us to further adjust our marine acquisition capacity on a temporary basis, for example by cold stacking some of our vessels, which could trigger additional exceptional charges.

#### 5.2.5. We have high levels of fixed costs that are incurred regardless of our level of business activity.

We have high fixed costs and data acquisition activities that require substantial capital expenditures. As a result, downtime or low productivity due to reduced demand, weather interruptions, equipment failures, permit delays or other circumstances that affect our ability to generate revenue could result in significant operating losses.

### 5.2.6. The revenues we derive from land and marine seismic data acquisition vary significantly during the year.

Our land and marine seismic data acquisition revenues are partially seasonal in nature. The marine data acquisition business is, by its nature, exposed to unproductive interim periods due to necessary repairs or transit time from one operational zone to another during which revenue is not recognized. Other factors that cause variations from quarter to quarter include the effects of weather conditions in a given operating area, the internal budgeting process of some important clients for their exploration expenses, and the time needed to mobilize production means or obtain the administrative authorizations necessary to commence data acquisition contracts.

### 5.2.7. Our business is subject to governmental regulation, which may adversely affect our future operations.

Our operations are subject to a variety of international, federal, provincial, state, foreign and local laws and regulations, including environmental, health and safety and labor laws. We invest financial and managerial resources to maintain compliance with these laws and related permit requirements. Our failure to do so could result in fines or penalties, enforcement actions, claims for personal injury or property damages, or obligations to investigate and/or remediate contamination. Failure to obtain the required permits on a timely basis may also prevent us from operating in some cases, resulting in crew downtime and operating losses. Moreover, if applicable laws and regulations, including environmental, health and safety requirements, or the interpretation or enforcement thereof, become more stringent in the future, we could incur capital or operating costs beyond those currently anticipated. The adoption of laws and regulations that directly or indirectly curtail exploration by oil and gas companies could also materially adversely affect our operations by reducing the demand for our geophysical products and services.

We may be affected by new environmental laws or regulations intended to limit or reduce emissions of gases, such as carbon dioxide and methane, which may be contributing to climate change, and these laws or regulations may affect our operations or, more generally, the production and demand for fossil fuels such as oil and gas. The European Union has already established greenhouse gas regulations, and many other countries, including the United States, may do so in the future. This could impose additional direct or indirect costs on us as our suppliers incur additional compliance costs that get passed on to us or as our customers' reduce their demand for our products or services.

In the United States, new regulations governing oil and gas exploration and development were put in place following the Deepwater Horizon platform disaster in the Gulf of Mexico. These new regulations may have a significant financial impact on oil and gas companies that wish to carry out exploration and development projects in deep water Gulf of Mexico. Our client mix could be altered with the disappearance of small and medium sized players, which could decrease our sales of multi-client data. InDecember 2011, the United States government organized the first lease of blocks since April 2010 and has announced a second lease sale of blocks for June 2012.

#### 5.3. Risks related to our indebtedness

### **5.3.1.** Our substantial debt could adversely affect our financial health and prevent us from fulfilling our obligations.

We have a significant amount of debt. As of December 31, 2011, our net financial debt (which we define as gross financial debt less cash and cash equivalents), total assets and shareholders' equity were € 1,090 million, € 5,556 million and € 2,939 million, respectively. We cannot assure you that we will be able to generate sufficient cash to service our debt or sufficient earnings to cover fixed charges in future years.

Our substantial debt could have important consequences. In particular, it could:

- increase our vulnerability to general adverse economic and industry conditions;
- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund capital expenditures and other general corporate purposes;
- limit our flexibility in planning for, or reacting to, changes in our businesses and the industries in which we operate;
- place us at a competitive disadvantage compared to competitors that have less debt; and
- limit, along with the financial and other restrictive covenants of our indebtedness, among other things, our ability to borrow additional funds.

### 5.3.2. Our debt agreements contain restrictive covenants that may limit our ability to respond to changes in market conditions or pursue business opportunities.

The indentures governing our senior notes (Senior Notes 9½% due 2016, Senior Notes 7¾% due 2017 and Senior Notes 6½% due 2012) and the agreements governing our U.S. and French senior revolving facilities contain restrictive covenants that limit our ability and the ability of certain of our subsidiaries to, among other things:

- incur or guarantee additional indebtedness or issue preferred shares;
- pay dividends or make other distributions;
- purchase equity interests or reimburse subordinated debt prior to its maturity;
- create or incur certain liens;
- enter into transactions with affiliates;
- issue or sell capital stock of subsidiaries;

- engage in sale-and-leaseback transactions; and
- sell assets or merge or consolidate with another company.

Complying with the restrictions contained in some of these covenants requires us to meet certain ratios and tests, relating notably, to interest coverage, net indebtedness and net result. The requirement that we comply with these provisions may materially adversely affect our ability to react to changes in market conditions, take advantage of business opportunities we believe to be desirable, obtain future financing, fund needed capital expenditures, or withstand a continuing or future downturn in our business.

Detailed information relating to our indebtedness and financial covenants pursuant to our debt agreements are set forth in note 13 to the 2011 consolidated financial statements.

Complying with the restrictions contained in some of these covenants requires us to meet certain ratios and tests, relating notably, to interest coverage and net indebtedness. The requirement that we comply with these provisions may materially adversely affect our ability to react to changes in market conditions, take advantage of business opportunities we believe to be desirable, obtain future financing, fund needed capital expenditures, or withstand a continuing or future downturn in our business.

Our French revolving facility, as amended on December 15, 2011, requires that we meet the following ratios and tests:

- a maximum ratio of total net debt to EBITDA of 2.50:1 at the end of each quarter for the 12-month testing period ending December 31, 2012; and 2.25:1 at the end of each quarter for the 12-month testing period ending December 31, 2013;
- a minimum ratio of EBITDA to total interest costs of 3.50:1 at the end of each quarter for the 12-month testing period ending December 31, 2012; and 4.00:1 at the end of each quarter for the 12-month testing period ending December 31, 2013, and
- the aggregate amount of our net capital expenditures in any fiscal year may not exceed the greater of U.S.\$ 600 million and 50% of EBITDA for such fiscal year.

Our U.S. revolving facility, as amended on December 15, 2011, requires that we meet the following ratios, which are tested quarterly:

- a maximum ratio of total net debt to EBITDA of 2.50:1; and
- a minimum ratio of EBITDA to total interest costs of 3.00:1.

# 5.3.3. If we are unable to comply with the restrictions and covenants in the indentures governing our senior notes, the agreements governing our U.S. and French senior revolving facilities and other current and future debt agreements, there could be a default under the terms of these indentures and agreements, which could result in an acceleration of repayment.

If we are unable to comply with the restrictions and covenants in the indentures governing our senior notes or in other current or future debt agreements, including those governing our U.S. and French senior revolving facilities, there could be a default under the terms of these indentures and agreements. Our ability to comply with these restrictions and covenants, including meeting financial ratios and tests, may be affected by events beyond our control. As a result, we cannot assure you that we will be able to comply with these restrictions and covenants or meet such financial ratios and tests. In the event of a default under these agreements, lenders could terminate their commitments to lend or accelerate the loans or bonds and declare all amounts outstanding due and payable. Borrowings under other debt instruments that contain cross-acceleration or cross-default provisions may also be accelerated and become due and payable. If any of these events occur, our assets might not be sufficient to repay in full all of our outstanding indebtedness and we may be unable to find alternative financing. Even if we could obtain alternative financing, it might not be on terms that are favorable or acceptable to us.

#### 5.3.4. We and our subsidiaries may incur substantially more debt.

We and our subsidiaries may incur substantial additional debt (including secured debt) in the future. The terms of the indentures governing our senior notes and the agreements governing our U.S. and French senior revolving facilities and our other existing senior indebtedness limit, but do not prohibit, us and our subsidiaries from doing so. As of December 31, 2011, the US and French revolving credit facilities were undrawn, and we had long-term confirmed and undrawn credit lines amounting to € 216 million.

If new debt is added to our current debt levels, the related risks for us could intensify.

### 5.3.5. To service our indebtedness and make capital expenditures, we require a significant amount of cash, and our ability to generate cash will depend on many factors beyond our control.

Our ability to make payments on and to refinance our indebtedness, and to fund planned capital expenditures, depends in part on our ability to generate cash in the future. This ability is, to a certain extent, subject to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control.

We cannot assure you that we will generate sufficient cash flow from operations to realize operating improvements on schedule or that future cash from operations and borrowings will be available to us in an amount sufficient to enable us to service and repay our indebtedness or to fund our other liquidity needs. If we are unable to satisfy our debt obligations, we may have to undertake alternative financing plans, such as refinancing or restructuring our indebtedness, selling assets, reducing or delaying capital investments or seeking to raise additional capital. We cannot assure you that any refinancing or debt restructuring would be possible, that any assets could be sold or that, if sold, the timing of the sales and the amount of proceeds realized from those sales would be favorable to us or that additional financing could be obtained on acceptable terms. Disruptions in the capital and credit markets, as have been experienced since 2008, could adversely affect our ability to meet our liquidity needs or to refinance our indebtedness, including our ability to draw on our existing credit facilities or enter into new credit facilities. Banks that are party to our existing credit facilities may not be able to meet their funding commitments to us if they experience shortages of capital and liquidity or if they experience excessive volumes of borrowing requests from us and other borrowers within a short period of time.

#### 5.3.6. Liquidity risk

As of December 31, 2011, we had € 1,090 million of net debt with € 1,501 M financial debt (of which €17 million was bank overdrafts and accrued interest) and € 411 million of cash and cash equivalents.

As of December 31, 2011, our financial debt consisted primarily of:

- US\$350 million outstanding principal amount of our 9½% Senior Notes due 2016, US\$400 million outstanding principal amount of our 7¾% Senior Notes due 2017 and US\$650 million of our 6½% Senior Notes due 2021;
- €360 million outstanding principal amount of our 1 ¾ convertible bonds due 2016;
- our US\$200 million French revolving facility not drawn as of December 31, 2011;
- our US\$79 million American revolving facility not drawn as of December 31, 2011,
- a total of €12 million (out of which €5million are drawn) under various credit lines held by several of our subsidiaries.

The amendments entered into in 2011 with respect to the French and US senior revolving facilities are described in paragraph 5.3.2.

The allocation of our financial liabilities is set forth in the table below:

In millions of Euros		<u>N</u>	<u>+1</u>	<u>N+2</u>	à N+4	<u>N+5</u>	<u>et &gt;</u>	To	<u>tal</u>
	31/12/201	Nominal	Interests	Nominal	<u>Interests</u>	Nominal	Interests	Nominal	Interest
	<u>1</u>								<u>s</u>
Senior notes & Convertible bonds	1 366	-	89	-	266	1 366	232	1 366	587
Bank borrowings	44	12	4	27	4	5	0	44	8
Financial leases	122	25	6	22	14	75	17	122	37
Banks overdrafts	5	5	-	-	-	-	-	5	-
Derivative instruments	-	-	-	-	-	-	-	-	-
Cash	(411)	-	-	-	-	-	-	(411)	-
Total net financial liabilities	<u>1 126</u>	<u>42</u>	<u>98</u>	<u>49</u>	<u>284</u>	<u>1 446</u>	<u>249</u>	<u>1 126</u>	<u>631</u>

Accrued interests, IFRS adjustments and issuing premium are not included.

The Senior Notes, the French and US senior revolving facilities contain certain restrictive covenants, including covenants that require compliance with certain financial ratios. For the French and US senior revolving facilities, as of December 31, 2011, these financial ratios and tests were:

	US senior revolving facility	French senior revolving facility	
Ratio	Requirement	Requirement	12/31/2011
• total net debt to EBITDA	< or = 2.5	< or = 2.75	1.62x
EBITDA to total interest costs	> or = 3	> or = 3.50	5.74x
Net Capital Expenditures	N/A	< US\$ 600 million and < 50% of EBITDA	US\$ 464 million < 50% of EBITDA

Information related to our indebtedness and the restrictive covenants contained in our debt agreements is provided in note 13 to our consolidated financial statements for the year ended December 31, 2011.

As of December 31, 2011, our available financial resources amounted to € 574 million (including cash, cash equivalents, and marketable securities). We consider that the risk of a default in our compliance with these covenants resulting in acceleration of our financial debt is unlikely.

We benefit from an outlook rating from Standard & Poor's and Moody's that assess the potential evolution (positive or negative) of our credit rating over time. In order to assign an outlook rating, rating agencies take into account the economic and operational evolution of the company and its industry.

Our current ratings are as follows:

- Standard & Poor's has given us a corporate rating of BB- and a rating of BB+ for the American and French revolvers and BB- for the Senior Notes;
- Moody's has given us a corporate rating of Ba2, and a rating of Baa3 for the American and French revolver and Ba3 for the Senior Notes.

Standard and Poor's and Moody's have revised, since August 19, 2010 and December 2, 2010, respectively, their outlook rating to negative on a long term basis.

#### 5.3.7. Risk over Interest rates.

Drawings under our credit facilities incur interest at variable rates that are reset at each interest period (generally between one and 60 months). As a result, our interest expenses vary in line with movements in short-term interest rates.

However, a large proportion of our debt consists of fixed-rate bonds, along with some fixed-rate finance leases and fixed-rate medium-term bank credit facilities with variable maturities. This debt is not exposed to interest rate fluctuations.

The following table shows our variable interest rate exposure by maturity as of December 31, 2011.

<u>31/12/2011</u>	Financi	Financial assets (*) Financia		Financial liabilities (*) (b)		n before ing <u>-(b)</u>	Off-baland positi (d)	on	Net posit hedį <u>(e)=(</u> c	ging
	Fix rate	Variable rate	Fix rate	Variable rate	Fix rate	Variable rate	Fix rate	Variable rate	Fix rate	Variable rate
Overnight to 1										
year	32	286	11	27	22	259	-	-	22	259
1 to 2 years	-	-	4	19	(4)	(19)	-	-	(4)	(19)
3 to 5 years	-	-	867	11	(867)	(11)	-	-	(867)	(11)
More than 5										
years	-	-	551	-	(551)	-	-	-	(551)	-
Total	<u>32</u>	<u>286</u>	<u>1 432</u>	<u>57</u>	(1 400)	<u>229</u>	<u>=</u>	=	(1 400)	229

<sup>&</sup>lt;sup>(\*)</sup> Excluding bank overdrafts and accrued interest but including employee profit-sharing

As of December 31, 2011, our variable-rate assets (net of liabilities) maturing in less than one year totaled €259million.

The following table shows our variable interest rate exposure over our financial assets and liabilities:

#### <u>2011</u>

M€	Impact on result before tax	Impact on shareholders' equity before tax
Impact of an interest rate variation of +1 %	(2,2)	(2,2)
Impact of an interest rate variation of -1 %	0,5	0,5

Our variable interest rate indebtedness carried an average interest rate of 2.9% in 2011, and our investments and other financial assets earned interest at an average rate of 0.25 %.

#### 5.4. Other financial risks

#### 5.4.1. Foreign exchange rate exposure as of December 31, 2011

The following table shows our exchange rate exposure as of December 31, 2011.

	In millions of US\$ <sup>(1)</sup>
Assets	<u>1559,5</u>
Liabilities	<u>1483,8</u>
Net position before hedging	<u>75,7</u>
Off-balance sheet positions	<u>(62,2)</u>
Net position after hedging	13,6

US\$-denominated assets and liabilities in the entities whose functional currency is the euro

	In millions of euros (2)
Assets	<u>87,2</u>
Liabilities	<u>98,0</u>
Net position before hedging	<u>(10,8)</u>
Off-balance sheet positions	<u>1,0</u>
Net position after hedging	<u>(9,8)</u>

<sup>&</sup>lt;sup>(2)</sup> Euro-denominated assets and liabilities in the entities whose functional currency is the US\$-

Our net foreign-exchange exposure is principally linked / related to the U.S. dollar and currencies pegged to the U.S. dollar. We seek to reduce our foreign-exchange position by selling our future receivables as soon as they enter the backlog and taking out dollar-denominated loans supported by long-term assets. Although we attempt to reduce the risks associated with exchange rate fluctuations, we cannot assure you that fluctuations in the values of the currencies in which we operate will not materially adversely affect our future results of operations. As of the date of this annual report, a decrease of US\$ 0.10 in the value of the US dollar relative to the euro would reduce our operating income by US\$ 40 million.

As a result of our compliance with IAS 12 (Income Taxes), our results of operation are also exposed to the effect of exchange rate variations on our deferred tax amounts when the functional currency for an entity that owns a non-cash asset is not the same as the currency used for taxation purposes.

#### 5.4.2. Risks related to certain of our shareholdings and other financial instruments.

Our investment policy does not authorize investments in the shares of other companies. Any transactions involving our own shares are decided by management in accordance with the applicable regulations.

As of December 31, 2011, we owned 800,000 of our own shares, worth €13.8million. A 10% fall in the price of these treasury shares would reduce shareholders' equity by €1.4 million, but would have no impact on earnings

31/12/2011	At fair value	Available for sales	Held to maturity	<u>Derivatives</u>	<u>Total</u>
Shares	€13.8 million	_	_	_	€13.8 million
Total	€13.8 million	_	_	_	€13.8 million

	Impact on result before taxes Impact on shareholder before taxes				
31/12/2011	Increase of 10 %	Decrease of 10 %	Increase of 10 %	Decrease of 10 %	
Shares	N/A	N/A	– €1.4 millio		
Total	N/A	N/A	1	€1.4 million	

Besides, as of December 31, 2011, we own a 29 % minority interest in the share-capital of Spectrum ASA, a Norwegian company listed on the Oslo Stock Exchange, and recorded on our balance sheet as of December 31, 2011 for a value of €20.6 million. Based on the share market price as of December 31, 2011, the value of our interest in Spectrum ASA amounts to €25.2 million.

### 5.4.3. Risk relating to the current financial crisis

The current situation in the credit and capital markets is likely to have a significant adverse impact on industrial and commercial performance and the solvency of many companies in general, which may affect some of our customers and suppliers. As a result, the current economic climate may have an adverse impact on our business if customers cancel orders or delay or default on payment, or if suppliers fail to provide goods and services as agreed.

To deal with these risks as effectively as possible,

- We are limiting customer risk by taking a selective approach with our customers (including looking at their solvency) in our services business and by using letters of credit in our equipment business; and
- We, and Sercel in particular, have adopted a highly selective policy regarding suppliers, aimed at keeping exposure to any one supplier within prudent limits.

#### 6. INFORMATION ON THE UTILIZATION OF FINANCIAL INSTRUMENTS

As mentioned in paragraph 5.1.6. above, as that the Group derives a substantial amount of its revenues from sales internationally, we are subject to risks relating to fluctuations in currency exchange rates.

In the years ended December 31, 2011 and December 31, 2010, more than 90 % of our operating revenues and, to a lesser extent, operating expenses were denominated in currencies other than euros. These included U.S. dollars and, to a limited portion, other non-Euro Western European currencies, principally British pounds and Norwegian kroner. In addition, a significant portion of our revenues that were invoiced in euros related to contracts that were effectively priced in U.S. dollars, as the U.S. dollar often serves as the reference currency when bidding for contracts to provide geophysical services.

We attempt to match foreign currency revenues and expenses in order to balance our net position of receivables and payables denominated in foreign currencies. For example, charter costs for our seismic vessels, as well as our most important computer hardware leases, are denominated in U.S. dollars. Nevertheless, during the past five years such dollar-denominated expenses have not equaled dollar-denominated revenues principally due to personnel costs payable in euros in France and Europe.

In order to improve the balance of our net position of receivables and payables denominated in foreign currencies, we maintain our financing in U.S. dollars. At December 31, 2011 and 2010, our total outstanding long-term debt denominated in U.S. dollars was US\$1,465 million (€1,132 million as of December 31, 2011 exchange rate) and US\$1,863 million (€1,394 million as of December 31, 2010 exchange rate), respectively, representing 76% and 95%, of our total financial debt outstanding at such dates.

In addition, to be protected against the reduction in value of future foreign currency cash flows, we follow a policy of selling U.S. dollars forward at average contract maturity dates that we attempt to match with future net U.S. dollar cash flows (revenues less costs in U.S. dollars) expected from firm contract commitments.

As of December 31, 2011 and 2010, we had US\$158 million (with a euro equivalent-value of €122 million) and US\$128 million (with a euro equivalent-value of €96 million), respectively, of notional amounts outstanding under euro/U.S. dollar forward exchange contracts and other foreign exchange currency hedging instruments.

We do not enter into forward foreign currency exchange contracts for trading purposes.

# 7. RESEARCH & DEVELOPMENT (R&D)

The consolidated R&D spending of the CGGVeritas Group amounted to US\$118 million (€84 million) in 2011, which accounts for more than 4% of the Group's revenue. This investment represents a significant increase compared to 2010 and illustrates the long-term commitment of CGGVeritas to promote innovative solutions and the development of new technologies. We pursue a dual goal: continuously improve the quality of our services and products in order to raise industry standards and increase the efficiency of our operations, providing our clients with better productivity.

### Marine acquisition

With more than twenty campaigns equipped with BroadSeis technology in 2011, we were able to confirm the market interest and further refine this solution that gives a remarkable improvement of data quality due to its enlarged frequency range. The low frequencies are less attenuated, allowing for imaging to more significant subsurface depths, whereas the high frequencies yield a true breakthrough in obtaining a superior level of resolution. BroadSeis builds on a combination of three CGGVeritas differentiating technologies: the Sercel solid streamers; an optimized positioning of the streamers as a function of the target structure to image; and a redesigned processing sequence.

The year 2011 was also marked by a major evolution in the BroadSeis technology with the launch of a new marine acoustic source with an enlarged frequency range that complements in an ideal manner the wide frequency recording capacity of the streamers. The useable frequency bandwidth is thus increased to 2.5 Hz-200 Hz, and above. A first commercial application was successful, confirming interest in this innovative source.

In the domain of ocean bottom acquisition, the strategic interest of our investment choices was confirmed by the notably increased activity in this market. The design of our autonomous seabed node, Trilobit, was improved, and we decided to increase our stock by 800 additional nodes. As a result, a crew equipped with 1,000 Trilobit nodes will be operational as of the second quarter of 2012. The nodes are used principally for the imaging of the blind spots in areas obstructed by platform structures, inaccessible to our seismic vessels, and the recording of the shear waves that are not recorded by streamers. These nodes can be used in association with conventional streamers for very wide offset acquisitions.

The water bottom acquisition procedure using Sercel's SeaRay redeployable cable was successfully revised to allow us to set new production records, and in particular in Saudi Arabia.

# Land acquisition

As in marine acquisition, the frequency bandwidth range constituted a critical factor for the quality of the resulting images. The EmphaSeis technology patented by CGGVeritas allows us to optimize vibrator truck frequency sweeps, and in particular to attain an emission frequency of 1.5 Hz. Its use has now been generalized for practically all of our seismic campaigns.

In the domain of huge land acquisition surveys, efforts have been concentrated on the combined analysis of surface seismic data, well seismic data, and non-seismic data to optimize the final quality of the subsurface image.

CGGVeritas has developed a specific seismic offer to characterize the stress regime in the shale gas and oil layers. This technology allows not only the identification of the optimal locations for production wells, but also prediction of production conditions. Spurned on by the significant rise of interest in production of unconventional resources in North America, this technology has met with great success in 2011 and supports the ongoing activity of land seismic acquisition in the concerned countries. Efforts have also concentrated on nearly real-time monitoring of microseismic events set off by the hydraulic fracking used to produce from the shale gas fields.

The development of the SeisMovie system, designed to monitor onshore production fields, was pursued in the context of two major operations. One project for Shell in Holland served to validate the technological solution in view of  $CO_2$  injection to increase the recuperation rate for a heavy oil field. The other project, for Saudi Aramco, led to improved repeatability with innovative solutions for the burying of sources and receptors.

#### **Processing, Imaging & Reservoir**

The processing sequence linked with the BroadSeis solution (Marine data) was improved and further developed in answer to specific requests of seismic characterization for reservoirs (identification of AVO anomalies associated with the fluid content of layers, use of processed data for petrophysical inversion, extraction of the 4D signal for repeated acquisitions in producing fields).

In the domain of depth imaging, the launch of the CGGVeritas solution for total wavefield inversion was well-received. This technology requiring high quality data (both in terms of frequency and offset) serves to compute a highly precise velocity field and obtain a vastly improved seismic image.

Other challenges in 2011 included the finalization of the new platform for seismic data processing, *geovation*, now deployed and operational worldwide. Another aspect of this work in 2011 included improving the performance of our computing centers by the use of advanced graphic processors that considerably speed up the job execution time.

### **Equipment**

The R&D teams in Sercel worked actively in the development of next-generation products that will allow Sercel to conserve its leader position as supplier of the most advanced material for the equipment sector.

In the domain of Land acquisition, the first 3D study with the cable-less system, Unite, was carried out in Columbia. Sercel also launched its new Giga Transverse equipment, that consists of an acquisition unit and an optical cable. Each of these pieces of equipment allows the transfer in real time of data acquired through 10,000 channels, namely ten times more than the previous generation of equipment. With this new technological milestone, Sercel is positioned as forerunner in the race to carry out very high density data acquisition surveys with up to one million channels in a near future. In terms of receiver technology, Sercel has launched its new version of the DSU1 digital receiver that is smaller, lighter, and easier to deploy.

In the domain of Marine acquisition, Sercel's solutions, Nautilus (lateral position and streamer depth indicators) and SeaPro Nav (integrated navigation system), are now standard for the CGGVeritas fleet. The Sentinel solid streamer underwent several modifications to optimize its performance at very deep water depths (BroadSeis technology).

# 8. QUALITY & HSE

# 8.0. <u>Introduction</u>

Key events and accomplishments in 2011:

- A focus on High Risk/Low Frequency events, resulting in steady reduction in High Potential Incidents; no fatal accidents in 2011.
- The launch of the "Rules to Live By" program with an associated move to a "fair and just" consequence management approach.
- The continued road transport safety program paying off with a reduced motor vehicle crash rate and no related serious injuries in 2011.
- An effective security monitoring and risk management in the face of expanding piracy areas and disruptions related to Arab Spring.
- The completion of a solid worldwide energy consumption baseline for our Group.
- The development of important tools and guidelines such as the Human Rights Risk Assessment Matrix and the Community Relations Management Plan provide better assessment and management of interaction of our operations with surrounding communities.
- ISO 9001 certifications already in place in the Processing, Imaging and Reservoir Division have been maintained and the scope expanded to include the NAM Dedicated Processing Centre in Assen, while in the Marine Division, the entire Marine fleet and offices are now certified.

# 8.1. Quality

In 2011, the Quality effort continued to be focused on the improvement of client satisfaction and the control and reduction of non-quality costs. With the new organization in 2010, Quality Departments were put in place in each Division; these departments are now improving many operational processes aimed at delivering better efficiency and benefit at field level:

# These include:

- Clear reporting and improved investigation of non-Quality events;
- Delivering tangible benefits through Quality and Performance improvement plans in each Division and Function;
- Providing Quality awareness training to new hires and project managers;
- Structured audit programs targeting operational improvements and critical supplier performance;
- Extending the use of internal customer satisfaction metrics to enhance the performance of support services.

# 8.2. Health

In 2011 CGGVeritas launched a program of professional medical support onboard its seismic vessels by subcontracting medical services to specialized suppliers. With clearly defined internal standards for medical resources on board, we improved the management of health matters in our operations. Initially launched in the Marine division, this program is progressively extended to Land crews.

We continue to use expert partners to set up our medical emergency response plans in countries with limited medical facilities, including repatriation. More generally, we carried out a detailed review of roles and responsibilities of all parties involved in medical evacuations (Medevacs) and repatriations.

We have conducted an epidemiological study of back pathologies declared onboard our vessels. This allowed us to identify contributing risk factors and to develop a prevention plan based on warm-up

exercises at the beginning of work shifts and stretching exercises at the completion of strenuous tasks. Accessible through e-learning, this awareness program will be fully available in 2012.

We have developed a database of chemical substances in use in our operations that are suspected or confirmed to be carcinogenic, mutagenic or toxic for reproduction, in order to eliminate or replace, where appropriate and feasible, the use of such chemicals.

The roughly 800 employees concerned by the move to the new Galileo office in Massy, France benefited from an ergonomics evaluation and training for their new office environment.

# 8.3. Safety

Our focus on the management and control of high risks was rewarded in 2011, the year ending without fatal accidents, in line with our objectives. Furthermore, the frequency of High Potential HSE incidents, which are followed on a global basis, showed a steady decrease.

Safety performance is also measured through the frequency of accidents with injuries. The employees and subcontractors of the Group recorded 79.9 million man hours in 2011. The Group Total Recordable Case Frequency (TRCF) per million exposure hours was 3.18 and the Group Lost Time Injury Frequency (LTIF) was 0.44. These rates compare respectively to 3.06 and 0.42 recorded in 2010, representing a slight deterioration. The increases in TRCF and LTIF can by and large be attributed to our operations in extreme, jungle covered terrain in large operations in Peru and Indonesia. In such hostile terrain a higher frequency of (low potential) slips, trips falls and cuts is to be expected. Nevertheless, an overall decrease in serious injuries is observed, with only one, moderate permanent partial disability to be regretted.

Recognizing that road transport remains our highest risk area, we continued the transport program initiated in 2007, focusing this year on driver competency, with programs such as an e-learning driver training and the use of driving simulators. At the same time, exposure was reduced where possible; one example of this effort was the replacement of many light vehicles by buses to carry personnel to the field. Through these efforts and the installation of In Vehicle Monitoring systems (IVMS), Speed Limiting Devices (SLDs) and Roll-over Protection, the permanent on site defensive driver trainers on our large desert crews and defensive driving training on all crews, our Motor Vehicle Crash Rate continued to decline from 1.4 in 2008, to 0.92 in 2010 and 0.84 in 2011. No serious injuries were incurred in road traffic incidents in 2011. This positive trend is also confirmed by the indicator measuring hours worked per kilometer travelled, which improves from 1.7 in 2010 to 1.9 in 2011.

Our behavioral Task Observation Program (TOP) was continued within the Marine Division and was launched in the Land Division. This program was significantly reinforced with a new Group campaign "Rules to Live By" and "Things We All Must Know" through instructional visual material describing the essential behavioral rules to prevent (fatal) accidents; the program was cascaded across the Group activities in all relevant languages. These rules are supported by clear procedures establishing principles in which rewards and encouragement are balanced with a "Fair and Just" consequence management and in which reckless behavior will no longer be tolerated.

The HSE training programs for our field personnel and management were continued and enhanced, notably the update of our 5 day and 3 day HSE Management programs. The Marine Division launched specific programs to raise awareness around support vessels, offshore crane use, and manual lifting and handling.

A robust HSE audit program was carried out with 68 internal audits and thousands of site specific inspections and resulting action plans across all activities.

The Group HSE-MS manual was thoroughly updated and Group HSE Procedures were the subject of major revisions in the areas of Risk Management, Management of Change, Lone Worker, Contingency Planning and Crisis Management and Sub-Contractor Management.

CGGVeritas continues to play an active role in the International Association of Geophysical Contractors (IAGC) HSE committee and participates in a number of Oil and Gas Producers (OGP) workgroups.

# 8.4. <u>Environment</u>

See paragraph 12.2 of this report.

# 8.5. <u>Security</u>

The monitoring program of high risk countries and high risk areas was reinforced in 2011 and proved critical as the Arab Spring required the partial evacuation of our personnel from Egypt and Libya and the implementation of cautionary security measures in Tunisia and Bahrain. Our Security Plans are regularly reviewed and audited in those countries rated at high risk levels as conditions in these countries change.

Between 2010 and 2011 there was a significant extension of the areas impacted by maritime piracy. To manage these risks, specific studies were conducted to develop prevention measures in the concerned areas. A Security Plan standard was developed and is put in place as required for operations and transits in the Indian Ocean and Gulf of Guinea. Where indicated by the Security Plan, our vessels were "hardened" to dissuade assailants, and military escorts were arranged in agreement with ship managers and clients where deemed appropriate.

#### 9. SIGNIFICANT TRANSACTIONS AND EVENTS OF 2011

# Norfield

The exchange of assets between certain subsidiaries of the Group and the Norwegian group Norfield was completed on January 13, 2011. As a result of this transaction, the Group now owns the vessel Geowave Voyager and sold the vessel Venturer to Norfield. Besides, the Group is no longer a shareholder of Norfield AS.

# Issue of bonds convertible into and/or exchangeable for new or existing shares

On January 27, 2011, the Company issued 12,949,640 bonds convertible into and/or exchangeable for new or existing shares of the Company to be redeemed on January 1, 2016 (the "Bonds") for a total nominal amount of €359,999,992.

The net proceeds of the issuance will be used to actively manage CGGVeritas' indebtedness, in particular to repay part of its US\$530 million 7.5% Senior Notes due May 2015, allowing the Group to reduce its cash interest expense.

The Bonds' nominal value has been set at €27.80 per Bond, representing an issue premium of 25 % of the CGGVeritas' reference share price<sup>4</sup> on the regulated market of NYSE Euronext in Paris.

The reference share price is equal to the volume-weighted average share price of the CGGVeritas's shares on Euronext Paris from the opening of trading on 19 January 2011 until the determination of the final terms and conditions of the Bonds the same day.

The Bonds will bear interest at a rate of 1.75 % payable semi-annually in arrear on 1<sup>st</sup> January and 1<sup>st</sup> July of each year (or on the following business day if either of these two dates is not a business day). The first interest payment made on July 1, 2011 (or on the following business day if such date is not a business day) will cover the period from January 27, 2011, the issue date of the Bonds, to June 30, 2011, inclusive, and will be calculated *pro rata temporis*; it will amount to approximately €0.21 per Bond.

The Bonds will entitle the holders to receive new and/or existing CGGVeritas shares at the ratio of one share per one Bond, subject to adjustments. Under certain conditions, the Bonds may be redeemed prior to maturity at the option of CGGVeritas.

The detailed terms and conditions of the Bonds are described in the Prospectus which was approved by the *Autorités des Marchés Financiers* on January 19, 2011.

### Partial redemption of 71/2% Senior Notes due 2015

On March 1, 2011, the Company redeemed US\$460 million out of its US\$530 million 7½% Senior Notes due 2015. The remainder was redeemed on June 30, 2011.

# Sercel - ION litigation

The United States District Court for the Eastern District of Texas entered its final judgment and permanent injunction with regards to the patent lawsuit between Sercel and ION on February 16, 2011. The injunction exclusively covers the Sercel digital sensor "DSU" technology and is limited to the territory of United States. It does not restrict Sercel to use, manufacture, sell or deliver the DSU products anywhere else in the world. It also does not relate to the Sercel 408UL and 428XL recording systems. Sercel can continue to promote, sell and deliver these systems in the United States. Specifically, the injunction states that the offer to sell the DSU when the manufacture, sale and delivery occur outside the United States does not constitute an act of infringement or a violation of the injunction. Furthermore, the promotion or marketing of the DSU technology in the United States does not violate the injunction when the manufacture, sale or delivery occurs outside of the United States

On March 8, 2011, Sercel Inc. posted a US\$12.8 million bond (corresponding to the total damages award plus 20% interest) and filed a notice of appeal (see paragraph 11).

# Joint-venture agreement with PT Elnusa Tbk (Elnusa):

An agreement was signed on April 7, 2011 with PT Elnusa Tbk (Elnusa) to create a marine joint venture company in Indonesia. The newly established company, PT Elnusa-CGGVeritas Seismic, is 51% owned by Elnusa and 49% owned by CGGVeritas and will deliver 2D and 3D marine seismic acquisition services to oil and gas company clients mainly operating in Indonesia and the Region.

PT Elnusa-CGGVeritas Seismic will operate the first Indonesian-owned and flagged seismic vessel, the Elnusa Finder. The Elnusa Finder was purpose-built in Singapore and is equipped with four Sercel solid streamers. She is scheduled to conduct her first commercial survey in Indonesia starting in May, 2012, near Madura Island in East Java, on behalf of Husky Oil.

# Joint-venture agreement with PetroVietnam Technical Services Corporation (PTSC):

An agreement was signed on April 19, 2011 with PetroVietnam Technical Services Corporation (PTSC) to create a marine joint venture company. The newly established company, PTSC CGGVeritas Geophysical Survey Company Limited, is 51% owned by PTSC and 49% owned by CGGVeritas and will deliver 2D and 3D marine seismic acquisition services to oil and gas company clients mainly operating in Vietnamese waters and the region.

CGGVeritas will contribute the Amadeus, a high-capacity 3D seismic vessel, to the joint venture and PTSC will contribute the Binh Minh II, a 2D seismic vessel.

#### 6½ % Senior Notes due 2021 issue:

On May 31, 2011, the Company issued US\$650 million principal amount of 6½% senior notes due 2021. The Senior Notes are guaranteed by certain of the Group's subsidiaries. The notes were initially offered in the United States only. They were not registered under the US Securities Act of 1933. As a result, the offering was made in the United States through a private placement to qualified institutional buyers (as such term is defined by Rule 144A under the Securities Act above mentioned) and outside the United States. The period during which the notes initially issued could be exchanged for registered notes ended on December 8, 2011. The notes have been listed in Luxembourg on the Euro MTF market, a non-regulated market.

The net proceeds of the issuance were used (i) to redeem the remainder of our US\$530 million 7.5% Senior Notes due May 2015 and (ii) to repay in full the US\$508 million outstanding under our term loan B facility.

# Charter agreement with Bourbon:

On June 1, 2011, a five-year marine charter agreement was signed with BOURBON for six new support vessels to assist CGGVeritas' seismic operations. The new vessels will be delivered starting at the end of 2012.

# Multi-client strategic agreement with Spectrum ASA:

On July 28, 2011, a strategic agreement was signed with Spectrum ASA ("Spectrum"), a Norwegian multiclient company listed on the Oslo Stock Exchange. Pursuant to this agreement, CGGVeritas contributed its 2D Multi-client marine library for a consideration of US\$ 40 million, paid in cash and in equity of Spectrum.

This transaction was closed on September 15, 2011. On this day, CGGVeritas became a 25% shareholder of Spectrum. As a result of this transaction, the group recognized a €13.4 million (US\$ 19 million) gain.

Besides, in the scope of this transaction, on October 3, 2011, Spectrum issued convertible bonds for an aggregate amount of NOK 77 million. The conditions of this issue are described in the prospectus issued by Spectrum on September 14, 2011. These bonds can be converted into shares at a price of NOK 14 per share.

In this scope, CGGVeritas was allocated 27, 682,978 convertible bonds representing NOK 27,7 million. On December 31, 2011, CGGVeritas converted 27, 682,970 bonds and received 1,977,355 shares of Spectrum.

As a result, CGGVeritas now holds 10,840,181 shares of Spectrum representing 2.9% of their share-capital.

#### Joint venture agreement with Eidesvik Offshore:

On June 27, 2011, a joint venture agreement was signed with Eidesvik offshore for the creation of a joint venture to manage ten high-capacity 3D vessels in the CGGVeritas fleet, including the two new X-BOW vessels, Oceanic Vega and Oceanic Sirius. The joint venture, CGGVeritas Eidesvik Ship Management AS, will be based in Bergen and is 51% owned by Eidesvik and 49% owned by CGGVeritas

This joint venture includes the creation of an integrated team of highly skilled professionals dedicated to ship management to fully support and develop the performance of the fleet.

## Requests for information made by the U.S. Department of Commerce's Bureau of Industry and Security:

In order to provide complete and accurate responses to recent requests for information made by representatives of the U.S. Department of Commerce's Bureau of Industry and Security ("BIS"), we conducted an internal review of the facts surrounding shipments to our vessels operating in or near Cuba. During the course of our review, we discovered that, despite our precautions, some shipments may not have complied fully with our internal policies and possibly violated applicable export controls and sanctions laws. We have provided BIS with all of the information it has requested to date and are cooperating fully with it in this matter. We have also informed on a voluntary basis the U.S. Office of Foreign Assets Control.

The Company does not expect this matter to have any material impact on the Group's results of operation, financial position, or cash flows.

### Amendments to the US and French revolving facilities:

On December 15th 2011, U.S. and French revolving credit facilities **dated January 12 and February 7, 2007, respectively,** were amended in order to reduce, in particular, basket related constraints.

- With respect to our French revolving facility agreement, Capital expenditures limitation covenant has been re-defined as follows:
  - Net Capital expenditure limitation, defined as "Capital Expenditures minus multi-client Prefunding Sales." shall not exceed the greater of \$600,000,000 and 50% of EBITDA for a given fiscal year;

In addition, all existing negative covenant baskets were reset at the amendment date. All other financial covenants remain unchanged.

- With respect to our US revolving credit facility, we extended the maturity of US\$79 million out of a total US\$140 million outstanding, by two years, from January 2012 to January 2014. In addition, financial covenants have been re-defined as follows:
  - a maximum ratio of total net financial debt to EBITDAS (2.50:1 for any relevant period expiring in the rolling 12-month period ending December 31,2013)
  - a minimum ratio of EBITDAS to total interest costs (3.00:1 for any relevant period expiring in the rolling 12-month periods-ending December 31, 2013); and
  - reference to "Capital expenditures" limitation has been removed.

Finally, all existing negative covenant baskets were reset as of the amendment date.

## 10. PROSPECTS AND FORESEEABLE DEVELOPMENTS

# Geophysics market environment

Both oil and gas market operators and major consumer countries are becoming increasingly aware of the growing imbalance between hydrocarbon supply and demand. This was reflected in a very significant and continuous increase in energy prices, coupled with a widely held conviction that there would be a need to produce oil and gas in a sustained manner over the long term in order to meet global demand. In the case in point, the diagnosis is that the rates at which oil reserves are being replenished fall short of being able to replace, year on year, the quantities of sub-surface hydrocarbons extracted and consumed or to compensate for the natural depletion of reserves in the ground. The need to discover new reserves and to seek to recover the quantities of oil and gas in place as carefully as possible led to several years of high levels of investment in Exploration & Production and, by extension, to favorable long-term prospects for the geophysics market.

In 2008, the economy slowed down as a consequence of the worldwide financial crisis. Numerous countries entered into an economical slow down which immediately impacted the oil price which significantly decreased from a top level of US\$150 mid 2008 to below US\$40 the barrel mid-December.

During 2009, seismic companies managed to be disciplined by removing from the market some old, low-capacity vessels and delaying new build, therefore reducing the overall capacity and breaking off the price drop.

In 2010, Exploration & Production investments have again increased significantly, leading to a strong growth of demand for seismic services. In parallel, a significant number of new vessels have entered marine seismic market. The "Deepwater Horizon" platform accident in April in Gulf of Mexico has severely reduced the demand for seismic studies in this part of the world and consequently maintained an unbalance on a worldwide basis between offer and demand all along the year. Conversely, seismic equipment market has experienced a substantial growth both for marine equipments (streamers for newbuilds and increased capacity of existing vessels) and for land equipments (denser acquisition grids).

In 2011, and according to a survey made by Barclays Capital, the Exploration and Production spendings grew by 15%. Nevertheless few geopolitical events such as the "Arab Spring" or delays in governmental decisions in few countries such as Angola, Brazil and USA translated into exploration projects delays and shifts to 2012, especially offshore.

CGGVeritas believes that on the mid-term, recent discoveries offshore French Guyana, offshore Norway and offshore Mozambique as well as fundamentals for energy remain and that the need to discover new reserves to replace depleting reserves and to cope with long-term growth in energy demand, will materialize by a continued increase of Exploration and Production spending, leading to solid growth perspectives for the seismic market.

## **Outlook for CGGVeritas in 2012**

In a recent survey made by Barclays Capital, Exploration and Production spending should increase by more than 10% in 2012 at US\$550 billion after an increase of 15% in 2011. As a consequence, seismic market should recover after three years of decline or stagnation. We nevertheless anticipate:

- In marine contract acquisition, pressure on prices should remain until the second quarter of 2012, as few newly built vessels will enter the market but should soften in the second part of the year as demand growth is expected to exceed offer following the recovery of the seismic activity in the US Gulf of Mexico and the expected strong North Sea summer season;
- In the Gulf of Mexico, the recent announcement of a five-year lease plan that governs oil and gas leases and the lease sale of December 14, 2011 have reinitiated a strong multi-client marine activity in the US Gulf of Mexico with 6 seismic industry vessels working in January 2012 compared to 2 in average in 2011. In this context our wide azimuth marine multi-client data processed with our most sophisticated algorithms should trigger a sustained demand, in particular as the bid round will get closer;
- In onshore contract acquisition, demand for high-end seismic and productive surveys (in particular in Middle-East) as well as for Ocean Bottom Cable acquisition should remain high and will benefit to the high skilled seismic companies, such as CGGVeritas;
- Demand for our North American multi-client land acquisition data is correlated to the natural gas prices, whereas demand for non-conventional gas (shale gas) should remain high;

- Processing and reservoir activities should continue to benefit from this environment as clients usually take opportunities to reprocess existing data with new high-end sophisticated algorithms, a market segment where CGGVeritas enjoys a leadership position;
- Sercel should in 2012 take advantage of an increasing demand for seafloor and land seismic equipment (especially in Middle East where demand for large channel counts mega crews is accelerating) that should balance the expected weakening in marine equipment sales (lower level of seismic new builds).

# Furthering a commercial strategy based on technology differentiation

CGGVeritas believes that development of its portfolio of high end seismic services and equipment, via a clearer understanding of their exploration and production problems and requirements in geophysical technology, is a way of making sure that it stands out from its competitors. It also gives it an edge when it comes to identifying commercial opportunities, ensuring a good fit of the services proposed, and for upstream management of product and technology development in line with customer demand.

The Group believes that its strategy is allowing it to make the most of a context in which the oil industry will continue to increase the share of external services. The quality of the services and of the technologies provided, along with sustained research and development spending and sound management of health, safety and environmental factors, are pivotal when it comes to establishing a lasting relationship between client and service provider. The Group will continue to focus its strategy on improving and broadening the range of services to its customers.

CGGVeritas' customers increasingly seek integrated solutions to enable more accurate assessment of known reserves and improvement of oil and gas recovery rates in producing fields. CGGVeritas will further develop solutions based on a cross-functional approach, making it possible to integrate all the cutting-edge technologies developed in each area of expertise and adapt or upgrade them to meet the clients' issues.

This is the case with on-site permanent seismic facility projects, for example, which call on a range of skills, involving all the Group's areas of expertise.

The Group believes that, to stand out from the crowd in the future, it will be necessary to rely on advanced seismic data acquisition technologies, coupled with a constantly extended range of processing services, aimed both at improving the quality of seismic imaging and further reducing lead-times.

## 2012 outlook on technological developments at CGGVeritas

#### <u>Furthering research programs based on improved imaging</u>

On a technological level, the Group believes that by continuously improving acquisition methods and technologies and seismic data processing software developed by its teams, it will continue to be one of the leading suppliers of top-of-the-range seismic services on land and offshore. Its research and development work will continue to focus on improving imaging in complex zones for exploration and on production seismic as a technology to characterize and monitor reservoirs. Lithological prediction (identification of rocky layers surrounding an oil and gas accumulation) and applications linked to description of reservoirs and their content, in particular 3D prestack depth imaging, sub-salt depth imaging ("Wide Azimuth"), frequency broadband "BroadSeis" imaging, multicomponents and 4D studies will continue to be developed. The Group will also reinforce its research and development efforts through its technological centers located within its main clients premises.

#### Developing and improving land and offshore acquisition techniques

The Group believes that the growth in demand for geophysics services will continue to be linked to new technologies. The Group predicts that high-definition 3D studies, 3D frequency broadband "BroadSeis" studies, 3D multi-azimuth, 4D (adding time as the fourth dimension) studies and multi-component studies (3C or 4C) will play a key role in Exploration / Production, especially in the offshore sector.

# Developing new generations of equipment and maintaining sustained R&D efforts at Sercel

Sercel is continuing to pave the way for the future, by constantly improving its existing products but at the same time launching new products available every year and further conducting a proactive policy for developing future products.

To consolidate its leading position and maintain a high level of innovation and expertise in all its technological sectors, Sercel will maintain its R&D investments in 2011, which will therefore continue to increase.

# 2012 industrial, commercial and financial outlook

CGGVeritas' strategy is to pursue its performance program announced end of 2010, to significantly improve its commercial, operational and financial performances and to further consolidate its position as market leader in the following sectors:

- Top-of-the-range innovative onshore and offshore acquisition services and systems;
- Imaging and reservoir services;
- Land, marine and sea-bottom data acquisition equipment.

# Implementation of the 2010 performance plan: situation as of December 31, 2011 and 2012 objectives

We continue to pursue our 2011-2012 performance plan which we expect to generate the targeted \$150 million additional operating income by the end of 2012. The plan was focused on:

- Cost reduction through the implementation of a new organization and the reduction of our purchasing costs;
- The improvement of our operational performance especially in marine with the modernization program of our 3D fleet;
- Commercial differentiation through, among others, the implementation of joint-ventures in key countries;
- Technological differentiation in particular with the commercial success of our new BroadSeis solution.

We made significant progress on our performance plan in 2011:

- a) Vessel upgrade plan on schedule:
  - The upgraded Oceanic Phoenix and Endeavour upgraded during the first half 2011 were back in operations. The Endeavor completed the first BroadSeis wide-azimuth project ahead of schedule;
  - The new X-BOW Oceanic Sirius, designed for 20 streamers, was delivered on October 3, 2011;
  - The Champion, the last of our vessels targeted for the performance program in shipyard for major upgrade should be delivered during the second quarter 2012;

- b) Marine differentiation was strengthened (i) technically with 29 BroadSeis surveys acquired since the project was launched, including the first BroadSeis<sup>™</sup> wide-azimuth; and (ii) commercially with joint-ventures set up in Indonesia and Vietnam;
- c) The cost reduction program is progressing well but exposed to rising fuel costs and the weakening dollar all along 2011.

The implementation of the performance plan will be pursued in 2012, through targeted actions to improve the performance of our fleet, to reduce our non-quality costs and to strengthen our technological and commercial differentiation.

# Commercial outlook

Total backlog (Services and Equipment) amounted to US\$1,461 million (US\$1,103 million for Services and US\$358 million for Equipment, excluding the Group's internal sales) as of January 1, 2012. This backlog for Services has been secured during the second semester of 2011 at quite low prices overall.

In the context of increasing global seismic demand together with progressively strengthening marine pricing and utilization rates, 2012 should be a year of growth and increasing performance across all activities. Group revenue is expected to grow 10%-15% year-on-year in line with Exploration & Production spending.

# **Industrial outlook**

Sercel should continue to grow and deliver excellent results in 2012.

In Services, to further strengthen our high-end positioning, the performance plan is sustained by productivity investments of:

- Recurring industrial Capex of around \$250 million in 2012 including the continued strengthening of our high-end differentiation in Land, where our crews will be focused on ultra-high resolution configurations, and utilizing the Sercel 428XL and UNITE wireless system;
- \$65 million additional industrial Capex related to the upgrade of the Champion which is expected to return to operations in the second quarter bringing our 3D fleet to 15 high-end vessels including 11 with 12 plus streamers and 4 with 8-10 streamers. All vessels will be equipped with BroadSeis in 2012;
- Marine multi-client Capex between \$200 million and \$250 million, with a prefunding rate around 75% and amortization rate around 60%. The investments include new Gulf of Mexico programs where visibility improved as future lease rounds have been announced;
- Land multi-client Capex between \$120 million and \$150 million, with a prefunding rate around 75% and amortization rate around 80%

# Financial outlook

The ongoing strengthening of our high-end positioning and technological differentiation positions us to fully benefit from the expected robust seismic market conditions. In this context, CGGVeritas in 2012 should start a new journey of growth and strengthen its financial and industrial performance.

#### 11. SIGNIFICANT EVENTS BETWEEN 2011 CLOSING DATE AND THE DATE OF THIS REPORT

# Acquisition of Geophysical Research Company, LLC by Sercel

On January 17, 2012, Sercel acquired the assets of Geophysical Research Company, LLC ("GRC"). Headquartered in Tulsa, Oklahoma (USA), for a purchase price of US\$50 million plus US\$17 million to be paid within 3 years to an earn-out provision. Established in 1925 by Amerada Petroleum Corporation, GRC is a leading provider of down-hole sensors and gauges for the oil and gas industry. With approximately 120 employees, GRC is expecting 2011 revenues in the order of US\$22 million.

This acquisition builds upon Sercel's diversification into the well environment and more specifically the artificial lift market which shows promising growth for the coming years. GRC's memory gauge business complements Sercel's existing product offering and geographical coverage.

GRC products will benefit from Sercel's technology and know-how for new product industrialization as GRC will be launching a number of products within the next two years.

# **ION/Sercel litigation**

On February 17, 2012, the United States Federal Circuit Court of Appeals simply affirmed the judgment of the United States District Court for the Eastern District of Texas dated February 16, 2011 with regards to the lawsuit between Sercel and Ion Geophysical (« ION ») on the US patent N°5 852 242.

An injunction that exclusively covers the Sercel digital sensor "DSU" technology and is limited to the territory of the United States will remain in effect until the patent expires in December 2015.

The injunction does not restrict the right of Sercel or its customers to use, manufacture, sell or deliver the DSU and SeaRay products anywhere else in the world. It also does not cover the Sercel 408UL and 428XL recording systems; these recording systems can continue to be made, sold, and used in the United States.

In addition, under the injunction, Sercel can continue to offer for sale, promote and market DSUs and SeaRays as long as the manufacture, sale and delivery of the DSUs and SeaRays occur outside the United States.

An amount of US\$13 million will be included in Sercel Q4 2011 results to cover the US\$10.7 million amount plus pre- and post-judgment interest to be paid to ION.

The parties will return to trial court to determine the amount of additional damages related to Sercel SeaRays systems manufactured in Houston.

# 12. CONSEQUENCES OF THE COMPANY'S BUSINESS ON LABOUR AND ENVIRONMENT. SUSTAINABLE DEVELOPMENT

Since January 1, 2007, the CGGVeritas Group is structured around a mother company CGGVeritas SA, having its registered office at Tour Maine Montparnasse, 33 avenue du Maine, 75015 Paris, France, to which are affiliated Sercel and the companies belonging to the Services segment of the Group.

The personnel assigned to CGGVeritas SA is also employed by this company. CGGVeritas SA belongs to the social and economic unit ("Unité Economique et Sociale" hereinafter referred to as the "UES") set up with its subsidiary CGGVeritas Services SA.

# 12.1. Consequences of the Company's Business on Labor

# 12.1.1. Employment

# 12.1.1.1. International

As of December 31, 2011, the CGGVeritas Group included 7,198 permanent employees of more than 90 different nationalities in more than 70 locations worldwide. These numbers are to be compared with a total of 7,264 permanent employees on December 31, 2010, excluding the seasonal field crew workers.

As of December 31, 2011, the workforce was divided by type of business and by geographic area as follows:

31/12/2011	Equipment	Services	Geomarkets / Support Functions	Total
Europe	1,000	1,418	369	2,787
Africa & Middle East	7	381	23	411
Asia Pacific	576	454	40	1,070
North America	592	1,013	105	1,710
Latin America	0	220	61	281
Crew-Marine	0	939	0	939
Total	2,175	4,425	598	7,198

As of December 31, 2011, the workforce was divided by contract type as follows:

Contract Type 31/12/2011	Grand Total
Expatriate	298
Prospector-Land	389
Prospector-Marine	943
Sedentary	5,568
Grand Total	7,198

In 2011, 773 new employees have joined the CGGVeritas Group worldwide when 839 have left. The high number of leavers is explained by the natural attrition resulting from our activities (particularly field staff), and by our adaptation efforts in the context of the 2011-2012 performance action plan. In parallel to these departures we have implemented an ambitious recruiting campaign including the recruiting of geophysicists, researchers, managers and specialists of the maritime environment where we need to strengthen our competences.

The tables below show the split of the new hires and leavers by nature of activity:

Hires 2011	Equipment	Services	Geomarkets / Support Functions	Total
Female	24	136	59	219
Male	97	411	46	554
Total	121	547	105	773

Leavers 2011	Equipment	Services	Geomarkets / Support Functions	Total
Female	31	129	48	208
Male	84	499	48	631
Total	115	628	96	839

Net 2011	Equipment	Services	Geomarkets / Support Functions	Total
Female	-7	7	11	11
Male	13	-88	-2	-77
Total	6	-81	9	-66

## 12.1.1.2. France

The CGGVeritas Group employs 1,822 employees in France including 1,798 on a permanent basis (CDI) and 24 on a temporary basis (CDD). This staff includes 68 expatriates and 173 field employees working on rotation on our Marine and Land crews. The mother company CGGVeritas SA employs 31 permanent employees, CGGVeritas Services SA employs 908 permanent employees and 16 on a temporary basis. Sercel employs 859 permanent employees and 8 employees on a temporary basis.

This workforce is divided, in France, among the following categories:

	Employees as of December 31, 2011 Services	Employees as of December 31, 2011 Equipment
Managers and engineers	80.8 %	38%
Technicians	5.4 %	32%
Workers/employees	13.7 %	30%

In France, 130 new employees were recruited, including 6 hired by CGGVeritas SA, 58 hired by CGGVeritas Services SA and 66 hired by Sercel on a permanent basis. Temporary assignments have been used strictly to compensate absences over a certain duration and temporary workload.

At the end of 2011, the number of persons who left the CGGVeritas Group amounted to 121 in France, including 9 in CGGVeritas SA, 75 in CGGVeritas Services SA and 37 in Sercel.

These numbers do not include internal transfers.

#### 12.1.1.3. Recruitment

The Group keeps close connections with schools and universities where we can source our needed future talents. Our promotional lobbying near the students includes a strong participation in forums and educational programs, contributing to improve the knowledge of the Geosciences domain in the world of education, schools, and universities. Such programs are, amongst others, organized by professional associations, such as SEG (Society of Exploration Geophysicists) and EAGE (European Association of Geoscientists & Engineers).

In order to support in a durably the Group international growth, a specific effort has been made to recruit talented professionals originated from the various countries where we operate.

Together with this promotional effort near the students we add an extended offer for internship of various types; apprenticeship and professionalization contracts, CIFRE contracts, etc. In this context in France 11 "apprenticeship" contracts and 7 "professionalization" contracts were added to the 34 long term internship exceeding 4 months.

We are also sensitive to respecting diversity and non-discrimination when hiring. Our commitment is formalized in the Group Code of Ethics, Code of Business Conduct, and Sustainable Development policy. In order to publicize it a campaign aimed at raising awareness on the subject and providing training has also been implemented in each activity sector. Hence the topic of non-discrimination has been included in the Human Resources Seminars and the "Governance and Performance" training provided by CGGVeritas University to the senior management. This awareness campaign will be continued in 2012, and will be reinforced through on-line training programs about ethics and prevention of discrimination.

In addition, our recruitment campaign targeting high potential young talents has been continued in 2011, resulting in several recruitments, especially in the Land and Marine Divisions. It was complemented by targeted recruitments for the Geomarket & Global Marketing Function in order to reinforce our competences, particularly in the Reservoir area. These efforts will continue and will be further reinforced in 2012.

### 12.1.2. Work Conditions

In France, CGGVeritas is governed by a specific collective bargaining agreement agreed upon with the worker representatives. This agreement is common to CGGVeritas SA and CGGVeritas Services SA within the UES (*Unité économique et sociale*). This agreement does not include Sercel, which is ruled by the collective bargaining agreement of the steel industry.

Duration of workdays is governed by an agreement to reduce working hours, signed on August 27, 1999, and implemented on an annual basis by the agreement of February 17, 2000.

A specific time-off account (CET or *compte épargne temps*) was simultaneously put in place in order to allow employees to save into such account the vacation days to which they are entitled as a result of the implementation of the 35-hour work week. Similar processes related to the reform of working hours were implemented in Sercel on its French sites.

A total of 35 persons work part-time, from 17,50 hours to 33,72 hours per week. It includes 17 people for the UES and 18 people for Sercel.

In 2011 absenteeism amounted to:

- 4.19% for the CGGVeritas SA and CGGVeritas Services SA UES excluding maternity leaves and including 3.14% for absences longer than 100 days.
- 2.48% for Sercel, excluding maternity leaves and including 0.53% for absences longer than 100 days.

#### 12.1.3. Gender distribution

Out of a total 7,128 employees of the CGGVeritas Group, 25% are women distributed varyingly in the different Divisions and Functions according to the nature of our activities; Equipment 31%, Land 11%, Marine 11%, Multi-Clients & New Ventures 36%, Processing Imaging & Reservoir 27%, Functions 51%.

The following table shows the distribution men / women, by type of business and by geographical area:

31/12/2011	Equip	oment	Services		Geomarkets / Support Functions		Total		
	Femmes	Hommes	Femmes	Hommes	Femmes	Hommes	Femmes	Hommes	Total
Europe	219	781	263	1 155	201	168	683	2,104	2,787
Africa & Middle East	2	5	63	318	10	13	75	336	411
Asia Pacific	249	327	131	323	24	16	404	666	1,070
North America	198	394	268	745	48	57	514	1,196	1,710
Latin America	0	0	57	163	23	38	80	201	281
Crew-Marine	0	0	66	873	0	0	66	873	939
Total	668	1507	848	3577	306	292	1822	5376	7198

In France, out of a total 1,822 employees, 23% are women. The distribution by company is as follows:

- CGGVeritas SA: 16 women out of 31 employees
- CGGVeritas Services SA: 214 women out of 924 employees
- Sercel: 193 women out of 867 employees

We hold specific efforts to promote a better parity ratio within the management for the future, through promotions and targeted external recruitment.

#### 12.1.4. Remuneration

The CGGVeritas compensation policy intends to associate closely remuneration and performance.

# 12.1.4.1. Salary Revision in 2011

In the scope of the UES, the 2011 salary negotiations with the trade unions were not materialized by a formal signed agreement. Excluding the contractual salary increase related to seniority for certain categories of employees the salary increase in 2011 amounted to 1.1% of the corresponding gross salary mass for technician and workers ("non cadres") and 1.3% on a merit basis for supervisors and managers ("Cadres"), all applicable as of January 1, 2011. Beyond that a specific envelope of 0.6% was dedicated to promotions.

At Sercel, parallel salary negotiations led also to a non-agreement protocol on February 17<sup>th</sup>, 2011. Salary increase amounted to 2.7% of the total gross salary mass, including 2.4% of general / merit increase depending on the relevant population applicable as of January 1, 2011, plus a specific envelope of 0.3% dedicated to promotions.

It has to be noted also that for the sixth consecutive year a bonus linked to performance was paid to employees of the Services segment in March 2011. This variable part of the remuneration is deployed homogeneously within all the Group entities. It is implemented in two forms. One is a common program for all support functions and managerial entities (GPIP "Global Performance Incentive Plan"), based for half on collective financial performance and half on individual performance against objectives. The other for the production entities is a program based on their own production objectives.

In France the three-year profit-sharing agreement signed on June 30, 2007 between worker representatives and the companies of the UES CGGVeritas SA & CGGVeritas Services SA was not renewed for lack of favorable financial perspective. A negotiation with the trade unions to sign a new agreement is currently on-going.

Within the same UES scope CGGVeritas SA & CGGVeritas Services SA the derogatory incentive agreement ("Participation" to the Company results) signed on June 30, 2007 has been terminated. Given the 2010 financial results, the legal part of the scheme has not delivered any contribution to be paid in 2011. Likewise no provision has been made for the year 2011.

At Sercel (France) in 2011 the agreements in force have continued to generate payments with respect to the profit-sharing and incentive ("Participation") agreement.

The additional company savings plan (PEE) and collective retirement savings plan (PERCO) implemented in 2006 and renewed for a similar period in January 2009 within the UES CGGVeritas SA and CGGVeritas Services SA (mother-company and Services) and in 2005 within Sercel were normally enforced in 2011. These plans have been extended for another three years period starting from 2012.

At the end of 2011, within CGGVeritas SA and CGGVeritas Services SA, 425 employees subscribed to the PEE and 519 to the PERCO. At Sercel, 608 employees subscribed to the PEE and 486 employees to the PERCO.

# 12.1.4.2. Agreement on Men / Women "professional fairness"

Within the French UES scope regrouping CGGVeritas SA and CGGVeritas Services SA the agreement regarding men and women professional fairness signed on January 17, 2007 expired on February 16, 2010. A new negotiation took place in 2011 resulting in the signature of a new agreement on December 21, 2011. This agreement includes an envelope of 0.8% of the base payroll to operate a salary catch up in favor of women, applicable for the eligible people with an effective date on October 1, 2011. This agreement also includes a follow up of the recruitment in the future and various educational programs for the staff, and particularly for managers, aimed at raising the awareness on the subject.

A corresponding agreement at Sercel is planned to be negotiated in 2012.

## 12.1.5. Professional relationships

In order to foster dialogue and information exchanges, the UES CGGVeritas SA / CGGVeritas Services SA, as well as Sercel, have set in France representatives committees with which various formal meetings are held (enterprise committee, worker representative committee, HSE committee, various commissions), some of which having resulted in the signature of certain agreements. Within the UES CGGVeritas SA / CGGVeritas Services SA the rights of the employees are guaranteed by a collective bargaining agreement which was signed on December 21, 2007. Four ordinary meetings and three extraordinary meetings of the Hygiene, Safety and Work Conditions Committee (CHSCT) were organized in 2011, mainly dedicated to the preparation and the execution of the move to the Galileo building in Massy in July, and the move of CGGVeritas University to the Carnot Plaza building in October. Among other topics were the prevention of the psychosocial risks, the impact of the "Things to Do & Rules to Live By" implementation, onboard living conditions and review of annual HSE statistics.

Similar representative committees, organized in compliance with the local laws, are active in other entities of the Group (International staff in Switzerland, Norway, Singapore, etc.).

The Code of Business Conduct and the employee reporting line have been implemented in 2009. The employee reporting line, compliant with the SOX act (July 31<sup>st</sup>, 2002, article 301-4) and compliant with the specifications of the U.S. Safe Harbor Act, was submitted for approval to the CNIL (Commission Nationale de l'Informatique et des Libertés). No call compliant with its scope was reported during the year.

Besides an external employee assistance program providing help and advices to individual people was set up within the Group in partnership with Shepell-fgi. This program provided by an external supplier is aiming at providing an individual assistance in case of medical, social, professional or legal needs.

## 12.1.6. Training

Our training policy, aimed at promoting individual and professional development, is a priority of the Group, which for that purpose has put in place for several years its own enterprise university.

CGGVeritas University proposes integration training for new hires, in particular through the GeoRise program aimed at providing professional training in the various company's trades and accompanying new talents in the first years of their career. Since the launch of the program in September 2006, many sessions have been organized in the three main university sites, in Massy, Houston, and Singapore.

CGGVeritas University organizes also technical training programs to the Group's employees and clients. This year a specific effort has been made toward the development and the implementation of new training modules supporting the deployment of the processing software *geovation*. Besides for general education 33 geophysical lectures hosting 900 participants were organized around the world.

CGGVeritas University offers also management programs, which have evolved in 2011 at several levels. Modules were adapted in order to better integrate the Group's vision and leadership model. Individual development programs have been strengthened and specific programs addressing financial security, quality, health, safety & environment have been refreshed. Programs related to the promotion of ethics, the understanding of the business code of conduct, the fight against discrimination and harassment have been developed for a release on line in 2012.

The concept of "Learning for Development" has been strengthened. It addresses the need for our organization and every of its employees to acquire continuously the knowledge and the know-how indispensable to cope with the evolution of the technologies and working methods. It also addresses the need to adapt to the organizational and internal processes changes. This requires a close partnership between the university and the operations, for which reason CGGVeritas University has reorganized itself.

CGGVeritas University provided a total of 15,920 training days in 2011, including 3,518 training days dedicated to management programs, 7,371 training days dedicated to technical programs including 2,832 days for external clients, 2,106 training days dedicated to health, safety, and environment programs and 2,925 induction days.

In France, including training provided by external suppliers, the annual socio-economic report (*bilan social*) cites 5,471 training days including 4,041 in the Services segment and 1,430 for Sercel.

# 12.2. <u>Consequences of the Company's business on environment</u>

CGGVeritas considers that concern for the environment is an integral part of the way we operate. In the environmental policy, the Group Management publicly commits to continually improve the company's environmental performance.

In this policy, the Group commits to complying with laws and regulations concerning the Environment. Often we work in areas where environmental controls and regulations are not developed and we strive to exceed local requirements. To achieve this, CGGVeritas regularly launches and sustains initiatives helping to protect the environment, which go beyond the mere compliance with all applicable environmental regulations in our countries of operations.

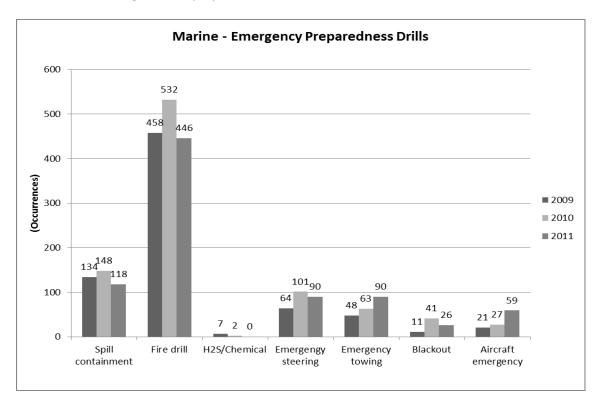
12.2.1. Our dedicated Health, Safety, and Environment (HSE) organization is structured to oversee environmental management in the Group. This organization supports our operating Divisions in all phases of our management system, from risk identification and control through training and communication to emergency response in the event of an environmental incident.

The Group has a clear and robust governance structure around Environmental Management. A Group Environment Vice President is responsible for developing the Group's Environmental Policy and for establishing annual environmental objectives. These are approved by the CEO and cascaded and implemented through our operating Divisions. The environment policy is widely communicated to employees, subcontractors and clients. It emphasizes the necessity to identify, monitor and manage the environmental risk, to comply with laws and regulations, to appropriately train all parties involved in the environment stakes and to strive for continual improvement.

The Group maintains around 120 dedicated HSE professionals across the globe, embedded in our Divisions, to support our management in implementing our HSE policies. In all of our operations, trained HSE field professionals continuously monitor and report any environmental impact incurred by our activities. They also deliver training to our operating units to prevent any potential environmental consequence.

# **Emergency Preparedness and Response**

In line with our integrated HSE Management System, all of our operational sites have Emergency Response Plans (ERP) in place to deal with a wide range of possible emergency scenarios, such as hydrocarbon spills, fires and helicopter emergency landings. Drills are periodically undertaken to ensure the ERP's effectiveness throughout the projects.



## 12.2.2. Objectives assigned by the company to its foreign subsidiaries

The organizational framework described above applies to all our subsidiaries worldwide and to our subcontractors, the environmental policy and objectives being applied through all our Divisions and Functions, across all legal entities.

# 12.2.3. Measures taken to ensure compliance of the Company's activities with applicable laws and regulations

For Services projects, when environmental impact assessments have been prepared by our clients, we work closely with them as well as with local regulatory agencies to assure the development and implementation of a compliant plan for our seismic operations. In the absence of our client's environmental impact assessment, we assure that environmental risks and potential impacts are identified and assessed in our Project Risk Assessment and:

- Conduct project specific environmental risk assessments, consistent with ISO 14000 standards, to identify actual and potential environmental impacts and assess their significance;
- Where significant impacts potentially exist, develop, implement and maintain, in conjunction with appropriate authorities, a project specific environmental management plan;
- Develop emergency response plans for potential environmental incidents to mitigate environmental impact;
- Measure environmental performance throughout the life cycle of each project.

For Sercel, all manufacturing or repair sites (USA, Canada, Singapore, United Kingdom, China, Russia, Norway and France) ensure that the operating framework and reporting obligations prescribed by local regulations are complied with.

In France, two sites (Nantes and Saint-Gaudens) pertain to the category of classified sites for environmental protection (ICPE). Nantes is subject to notification and Saint-Gaudens to both authorization and notification. Such classifications are due to the materials used as well as the activities performed (sections 1000 and 2000 of ICPE). Saint-Gaudens is subject to a permit and consequently regularly controlled by local environmental protection administrations overseeing air or water pollution risks. As of today, Sercelalways demonstrated full compliance.

# 12.2.4. Committed expenses and actions to prevent the consequences of the company's activities on environment

#### **Technological Innovations**

With the launch of the Oceanic Sirius in October, we pursued our fleet renewal program and added another X-Bow vessel complying with the most stringent requirements related to environment protection. Its Det Norske Veritas "Clean Design" Class certifies among others a double hull, engines complying with MARPOL's latest requirement for SOx, NOx and  $CO_2$  emissions, state-of-the-art bilge and ballast water treatment systems and incinerators, a fuel overflow tank system, as well as the availability of drip trays on the deck to contain any accidental spill. A green passport scheme follows up the materials and chemicals on the vessel from the cradle to the grave. The design of the hull, rudders and propellers has been optimized for seismic towing operations at 4.5 / 5.0 knots, thus leading to reduced noise and fuel consumption and lower  $CO_2$  emissions.

The Phoenix and Endeavour were refitted in 2011, while the Champion started a refitting process that will be completed during the second quarter of 2012. Champion's state-of-the-art engine will operate at lower exhaust temperatures, which in turn results in less NOx formation from the combustion.

A pilot vessel for the fleet, the Amadeus tested an entirely organic enzyme as an additive to the fuel called X-Bee. CGGVeritas is evaluating the additive's potential to reduce excess fuel consumption alongside carbon dioxide, nitrous dioxide, and particulates emissions. Still under review, this pilot could be extended to other vessels in 2012 if results were deemed satisfactory.

Following ISO 14062 recommendations pertaining to eco-design, Sercel has introduced environmental considerations in its Product Development Charter. This new formal step in the project definition will help to define the environmental objectives of the product, the impact of its use in the field and the product composition and specification with regard to sustainable development.

Sercel continues to look at ways to reduce the environmental impact of its products in both the manufacturing process and during the products operation. Examples include:

- Nautilus positioning devices- reduction in the use of batteries;
- Land 428XL line electronics are smaller and lighter than the older 408— use of less material during manufacturing and improved ease of handling to the user.

Moreover, Sercel continuously aims at decreasing the power consumption of the electronic units, thus allowing the customers to reduce significantly the number of batteries in the field.

## 12.2.5. Provision for environmental risks

The provision accrued in 2010 by CGG do Brasil Participações Ltda.to cover a fine for not complying with a technical opinion issued by the Ministry of Environment has been extended through 2011. The fine is non-material and is still disputed by CGGVeritas.

No other specific provision for environmental risks has been created by CGGVeritas or its subsidiaries and no other judicial or administrative procedure have been registered in this respect.

No indemnification had to be paid in 2011 by CGGVeritas pursuant to a court decision on environmental matters.

# 12.2.6. Measures taken to prevent and mitigate impacts on natural environment

In Marine and Land Acquisition, monitoring protected species is part of our daily duties. Before the start of any project, we integrate into our Project Risk Assessment the characteristics of the ecosystem in which we'll operate and the sensitive species it entails. Induction trainings to the crews and visitors as well as regular briefings in our daily HSE operational meetings do raise staff's awareness about their potential impact on biodiversity and hence responsibilities.

In 2011, land crews further limited their impact on the environment by substituting materials by environmentally-friendlier products. North American crews commonly adopted biodegradable survey flagging in their operations. Another example, Omani crews managed to alleviate 84,000 plastic bags from their waste stream this year. They were indeed using approximately 7,000 small plastic bags per month to take food away from the messes. The management substituted the plastic bags by biodegradable bags that were already used as survey markers.

Onboard vessels, teams of marine mammal observers insure compliance with applicable regulations stipulated by the country in which we operate. In 2011, our observers detected 13,833 marine mammals and sea turtlesduring our seismic survey acquisitions. Visual detections generated a total of 12 delayed ramp-ups and shutdowns equating in 53 hours of operational downtime. Ramp-up procedures - also called soft-starts - are used as a standard mitigation measure to warn marine mammals and sea turtles of our presence before seismic surveying can begin. These measures allow sufficient time for the animal to leave the immediate vicinity of our operation prior to reaching full-power.

# Passive Acoustic Monitoring (PAM)

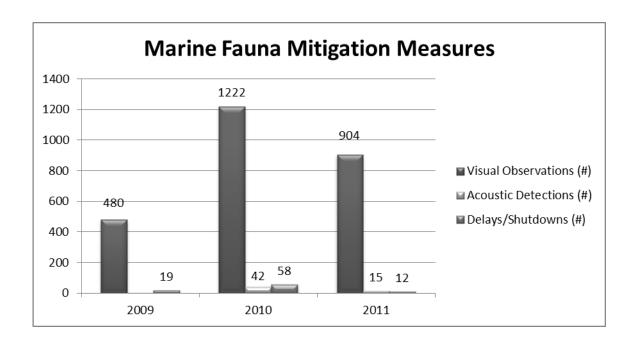
Passive Accoustic Monitoring (PAM) holds promise as a technology to help our industry better detect the presence of marine mammals in proximity to our operations. The Group is engaged in research and operational tests to develop this technology further and better integrate it with our operations.

Between July and December of 2011, three vessels utilized PAM while operating in Indonesia, Norway and Brazil. Of the 954 detections, 14 were made through passive acoustic monitoring techniques. Three of them were confirmed by visual observations. The marine mammals detected through PAM were spotted outside of the safety area.

Our second Passive Acoustic Monitoring (PAM) field trial started onboard the Oceanic Phoenix for the Santos Phase 6b BroadSeis survey in Brazil end of 2011. This is being conducted in conjunction with RPS and Seiche Measurements Ltd., which were integral parts in the success of the Gulf of Mexico BP WAZ field trial in 2010. This project aims at demonstrating PAM capabilities and overall effectiveness to the Brazilian Ministry of the Environment (IBAMA) for them to gain a better understanding of this technology and apply this knowledge towards potential future regulations.

Unlike the Gulf of Mexico BP WAZ experiment, the Santos Phase 6b PAM field trial is strictly experimental and is not used as a mitigation tool. Rather, PAM is only used to gather data between conventional visual observation methods and acoustic detection for comparison purposes.

Acoustic monitoring for this field trial officially began December 27<sup>th</sup> and 3 detections of delphinids were captured on December 30<sup>th</sup>. The field trial will last about 7 months, until the completion of the Santos Phase 6b survey.



# BRAHSS project (Behavioral Response of Australian Humpback whales to Seismic Surveys)

As a member of the International Association of Geophysical Contractors (IAGC), CGGVeritas is co-funding the largest and most comprehensive study ever undertaken on the effects of noise on whales.

It is scheduled to last until 2014 and is expected to reduce the level of uncertainty in evaluating impacts of seismic surveys on humpback whales. As a consequence, we will be in a position to better evaluate the efficiency of our standard mitigation measures.

In particular, this study aims at:

- (a) determining the response of humpback whales to a typical commercial seismic survey in relation to variables such as received sound level, relative movements of seismic array and whales and distance between them, behavioral state, social category of the whales, environmental variables.
- (b) determining the response of humpback whales to soft start or ramp-up to assess the effectiveness of ramp-up as a mitigation measure in seismic surveys and its potential for improvement.

Operationally speaking, these experiments use an array of six energy sources with four stages of ramp-up and a hard start. Building on the experience gained from the first experiment concluded in 2010, data gathering in 2011 was more streamlined and provided a large amount of data for analysis. BRAHSS project therefore achieved more than its targeted number of sample observations, what is more than promising for the upcoming experiment and the lessons to be learnt from the compared samples.

### **Operating Best Practices**

Climate change is being identified as one of the major global environmental challenges. There are many ways to reduce anthropogenic greenhouse gas (GHG) emissions. CGGVeritas' most significant contribution to address climate change is through the application of its technology. Through our advanced imaging of the subsurface, we help our clients to dramatically reduce the industrial effort required to explore, develop and produce oil and natural gas, and hence cut the associated GHG emissions. In other words, we provide solutions that markedly extend the productivity and lifespan of hydrocarbon reservoirs.

In addition, we continually look forward to minimizing emissions through better operating practices and technological innovations. Onshore, whenever possible, we use diesel technology over gasoline, what results in reduced fuel consumptions and GHG emissions. 95% of our owned vehicles use diesel engines. In house on site mechanics ensure proper engine maintenance. Each driver is accountable for her/his vehicle and maintains a documented daily vehicle inspection.

Offshore, 17 vessels exclusively use marine diesel oil (MDO). Two vessels are still equipped for both MDO and heavy fuel oil (HFO), though one of these made the switch to MDO exclusively after May. Marine diesel oil notably lessens the amount of oil residues that needs to be treated onshore.

Our ship-owners warranty that their vessels comply with the MARPOL conventions, such as the Annex VI regulating  $NO_x$ , SO and  $CO_2$  for new vessels built or modified from 2000 onwards.

In Marine, CGGVeritas concluded in 2011 a joint venture with the Norwegian ship manager Eidesvik. The new entity covers 10 high-end vessels and is set to achieve maritime operational excellence through reduced maritime downtime, better targeted maintenance, improved information flow and the sharing of best practices and joint programs, including in the environmental field.

With this regard, Eidesvik developed a program called "Blue-e" that encompasses operational aspects onboard vessels as well as at shore offices. Blue-e covers voyage performance, ship performance, fuel management, main and auxiliary engines, as well as other consuming hotspots such as incinerators, HVAC, water production, air gun compressors etc. It also addresses management and organizational issues such as culture and awareness, competence and training, performance management etc., all having also on our vessels' energy efficiency.

Over the last years, Sercel has helped the industry to reduce the risk of hydrocarbon spills in the marine environment, with the introduction of its solid marine seismic streamers to replace fluid-filled streamers.

Our Marine Division has implemented a program to install this new generation of streamers on its vessels. Among our fleet, only one vessel still tows 8 fluid-filled streamers. Solid streamer technology makes up 91% of our towed equipment. This is the one of the highest percentage within industry.

Given that the greatest impact office buildings impose on the environment is related to their energy consumption, CGGVeritas launched end of 2011 a global initiative called "Energy Efficiency in Offices". It is taking advantage of pioneering efforts and best practices observed in individual sites and sharing them across the group. It is meant to refine the baseline of our global energy consumptions and act as a catalyst for change inducing smarter uses of electricity and reduced emissions to the air.

# **Bunkering activities (fuel transfer)**

In 2011, our marine fleet successfully completed 4491 fuel transfers at sea and in port for a total of 249,564 m<sup>3</sup> of bunkering without an incident.

## 12.2.7. Steps taken for an evaluation and certification of the Group regarding environment

In our Processing, Imaging and Reservoir (PI&R) Division, the ISO14001 Environmental Management System was implemented across Crawley and Redhill (UK) in early 2011 and further developed during the year. An environment internal audit schedule was established and made an important contribution towards ensuring compliance with UK environmental legislation concerning the Carbon Reduction Commitment (Energy Efficiency Scheme). The resultant CGGVeritas UK scope submission under this scheme was ranked 40<sup>th</sup> out of over 2000 participants in the UK government performance league table and was the highest ranked company from the oil and gas sector.

This significant achievement clearly illustrates the benefits accrued from the environmental commitment made by management and staff. DetNorske Veritas (DNV) was engaged in September 2011 to undertake the formal certification process and the on-going external surveillance audit program. The ISO14001 certificate will be awarded in March 2012.

The Marine Division set itself the objective of achieving full compliance of its HSEMS with the ISO14001 standard in 2012 in order to assess the opportunity for a certification process starting from 2013.

Sercel's manufacturing facility in Saint-Gaudens (France) is also thoroughly engaged in the process of implementing an ISO14001 Environmental Management System. A team of internal auditors has already been trained on key environmental aspects and impacts specific to the production of vibrators and well tools. External certification is expected to be awarded by October of 2012.

Sercel Optoplan facility in Trondheim (Norway) is certified under OHSAS 18001 standard.

## 12.2.8. Water, raw materials and energy consumption

#### Extension of our Data Reporting Scope through PRISM

PRISM is CGGVeritas' proprietary integrated reporting tool collecting data on quality, health, safety and the environment. Not only is it a repository of information and indicators, it also acts as a platform for the exchange of best practices among users. CGGVeritas employees across the world enjoy access to PRISM's functionalities. PRISM is a powerful reporting tool allowing the Group's management to have a constant and rapid view of events across its worldwide operations. Since events are reported at the operational level at each site, PRISM helps us to assure the robustness and transparency of event reporting.

In 2010, PRISM had been fully deployed across Land and Marine Divisions, improving the reliability of the data. In 2011, Offices were also offered an own reporting platform within PRISM allowing them to consistently report environmental indicators.

The indicators listed below apply to all of our global operations across all Divisions (Land, Marine, Equipment and PI&R).

# Greenhouse Gas Emissions ("GHG") - Reporting Methodology

CGGVeritas assesses its emissions in accordance with the International Oil and Gas Producers (OGP) guidelines and the United Kingdom Offshore Operators Association (UKOOA) Guidelines.

Our emissions are being communicated to the Carbon Disclosure Project (CDP) as well as to other rating agencies. The methodology we apply is aligned with the GHG protocol<sup>5</sup>.

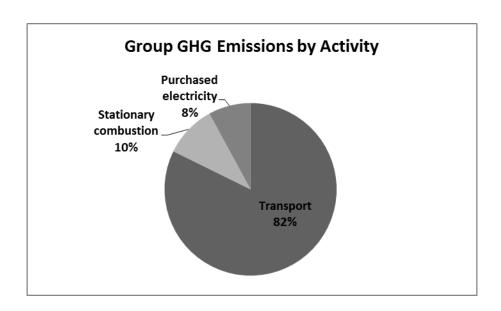
CGGVeritas' reporting of  $CO_2e^6$  emissions encompasses both onshore and offshore operations, manufacturing sites and office buildings. Emissions are reported in metric tons (M/T). The quantities submitted are direct and indirect (purchased electricity) emissions on a fully global scale.

# Group's GHG direct and indirect emissions

In 2011 the total quantity of CO<sub>2</sub>e emissions represented 945,688 M/TCO<sub>2</sub>e.

Marine operations accounted for 67% of the total emissions while land operations represented 17%, equipment manufacturing activities 3% and offices 13%. Reporting of emissions from Marine and Land now reached a satisfactory consistency thanks to training efforts and the quality control having taken place within the HSE network.

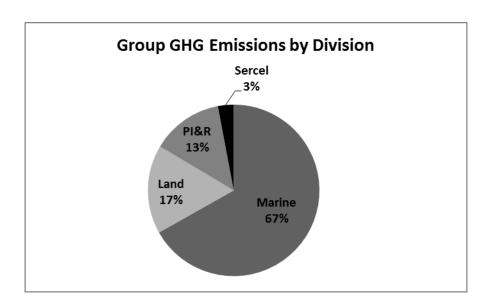
2010 had provided us with a satisfactory baseline. The 2011 dataset can be qualified as robust and fit for future benchmarking.



\_

<sup>&</sup>lt;sup>5</sup>The Greenhouse Gas Protocol (GHG Protocol) is the most widely used international accounting tool for government and business to understand, quantify, and manage greenhouse gas emissions. It stems from a partnership between the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

<sup>&</sup>lt;sup>6</sup>Carbon dioxide equivalent,  $CO_2e$ , is an internationally accepted measure that expresses the amount of <u>global warming</u> of <u>greenhouse gases</u> (GHGs) in terms of the amount of <u>carbon dioxide</u> ( $CO_2$ ) that would have the same global warming potential.



# Water consumption

The water consumption for the land crews amounted to 631,092 m<sup>3</sup> in 2011. We expanded our reporting scope to urban areas.

In Marine, water consumptions traditionally fell under the responsibility of vessel maritime crews and were not consolidated in this report. In order to get the full picture of our global water consumption, we nevertheless decided to collect this data in 2011 which equates to 23,317m<sup>3</sup>.

Our Equipment division accurately maintains records of its worldwide water consumptions, amounting to 172,620 m<sup>3</sup>.

# Management of black and grey waters

On land, black and grey waters generated by the land crews are treated by specialized subcontractors and disposed offsite (47%) or when operating in isolated locations are treated and disposed onsite (53%). In marine, since vessels are equipped with approved sewage treatment plants, the vast majority used waters are discharged to the sea after treatment according to MARPOL's Annex IV. Is the vessel at quay or too close to the nearest land, used waters are then treated in offsite facilities (0.7%).

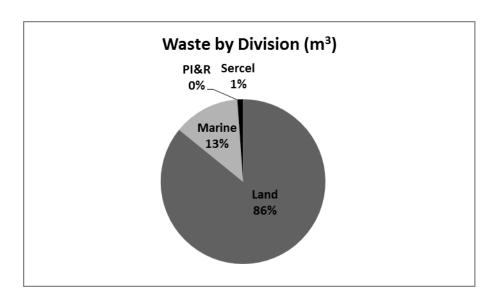
# Waste Management

All of our operations developed a waste management system setting priorities according to the following hierarchy: prevention, reduction, reuse, recycle, treat or dispose to certified facilities or dispose by incineration.

Our operations, especially in land, often take place in remote areas where appropriate waste treatment or disposal facilities are not available.

In Marine, even if all of our waste is systematically sorted onboard vessels, some port reception facilities still do not dispose of facilities enabling an optimal resource conservation.

As part of its global environmental product stewardship, Sercel offers to customers recycling or disposal opportunities for Marine and Land used equipment by giving access to a selected list of specialized waste facilities in our countries of operation. Not only does this represent a valuable service to our customers, but it also allows CGGVeritas to reduce its carbon footprint by conserving natural resources and energy.



# Waste management distribution



# **Incidents and Residual Spills**

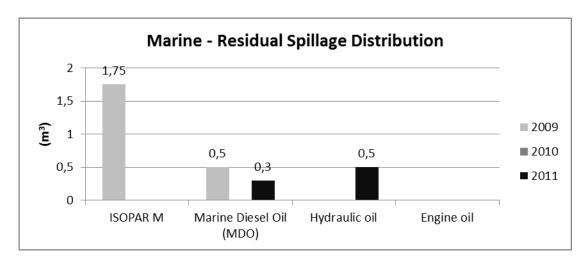
On Land, no recordable hydrocarbon spill occurred. As part of our standard practices, we clean up 100% of our spillage by sending contaminated ground to offsite facilities for proper treatment and disposal.

In Marine, two environmental incidents affected the same vessel. The first fuel spill occurred while the vessel was on dry dock in the Bahamas. Immediate action was taken to contain the spill with the use of the ship's Ship Oil Pollution Emergency Plan (SOPEP) equipment. The dockyard SOPEP gear was also brought to the site and deployed. Despite of this, a residual amount of 300 Liters could not be recovered.

The second event is due to a hydraulic pipe bursting on the top deck. Thanks to the crew's immediate mobilization, a significant amount could be recovered in the SOPEP kits. However, the wind was at that time blowing at 30 knots. As a result, about 500 Liters of hydraulic oil were flushed overboard and were widely dispersed.

These two events were investigated by the Marine Fleet Support. Maintenance procedures were updated across the fleet to prevent this kind of incident to re-occur in the future.

Below is a summary of the residual spillages that occurred in Marine over the last 3 years.



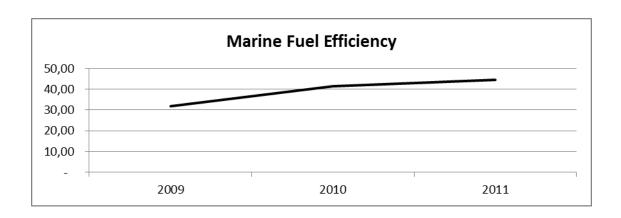
# **Key Performance Indicators**

Normalized metrics have been agreed upon since 2009 and evaluated in 2010. They aim at setting quantified performance targets. Marine Acquisition and Processing and Imaging activities were targeted as being better standardized activities than Land Acquisition, which is much more variable in the nature and context of its operations.

In Marine, we measure the Fuel Consumption Efficiency by taking into account the quantity of linear seismic data acquired per cubic meter of fuel consumed (CMP km/m³).

A baseline of 31,8 was established in 2009, and we published a 2010 performance of 45,3. However, we had to re-state this year the 2010 performance, which in fact had reached the level of 41,5 CMP km/m3. The transition between two software versions had indeed led us to an error in the calculation of the indicator.

In 2011, the fleet markedly improved its fuel efficiency by attaining 44,6 CMP-km/m<sup>3</sup>. Our objective is to reach 50 by the end of 2012.



The Power Usage Effectiveness (PUE), a measurement of the total energy of the data center divided by the IT energy consumption, continued to be monitored in Processing, Imaging and Reservoir (PI&R) Data Centers in 2011. The PUE measured through the year follows internationally recognized guidelines<sup>7</sup>.

<sup>&</sup>lt;sup>7</sup> Energy Star, Recommendations For Measuring and Reporting Overall Data Center Efficiency Version 2 - Measuring PUE for Data Centers, May 2011

In 2011, the average PUE for major Datacenters was below 1,5.

Among Data Centers' infrastructure energy needs, cooling can represent up to 40% of the total energy consumption. In 2011, the PI&R Division carried-out specific innovation projects to evaluate alternatives for our Data Centers' cooling systems taking in consideration the geographical location of the sites and the current technologies available. As a result, one of our main Data Centers improved its PUE from an average of 1,85 to a PUE below 1,2.

In 2012 efforts will continue to improve our energy usage performance and share and implement best practices through all our Sites.

# 12.3 <u>Sustainable development</u>

## 12.3.1 Risks Concerning Human Rights Issues

# 12.3.1.1. Reinforcement of CGGVeritas policies

Given that our activity presents risks regarding Human Rights issues, CGGVeritas has reinforced its Sustainable Development and Security policies to emphasize our responsibilities:

- to respect Human Rights as proclaimed by the Universal Declaration of the United Nations
- to respect the Rights of Indigenous Peoples as defined by the United Nations Declaration on the Rights of Indigenous Peoples
- to use the recommendations laid down in the "Voluntary Principles on Security and Human Rights" ("Volprin"), the "OGP Firearms and Use of Force" and the "IMO guidance regarding piracy and armed robbery against ships"

## 12.3.1.2. Assessment of country risks

To allow line management and country managers to adequately assess the risks and take measures to minimize them, we have ranked countries based on five criteria which include child labor; forced labor; freedom of association and collective bargaining; rights of indigenous, tribal, and native people; and corruption.

This assessment is based upon the figures and analysis issued by the UN agencies (such as the International Labor Organization), United States Government sources, and other reputable international Non-Governmental Organizations (such as Transparency International or Human Rights Watch).

Line management and country managers are in charge of implementing specific controls based upon this assessment. Preventive and control actions vary in accordance with the risk associated with the country where operations are conducted and the country of origin of a given partner or contractor:

- For low risk, no specific action is required;
- For medium risk, we increase our focus on these issues while conducting operations or dealing with a
  partner or contractor (with a yearly evaluation by the local managers of five fundamental criteria cited
  above);
- For high risk, we conduct general compliance audits or specific partner or contractor audits.

The assessment is reviewed yearly, or more frequently in the case of a sudden change of geopolitical situation in a country.

## 12.3.1.3. Tools for internal standards and recommendations

CGGVeritas has defined internal rules regarding Human Rights. A Human Rights booklet, largely inspired by the guideline, Social Accountability 8000, has been drawn up. This booklet will be distributed in 2012 to our local managers to help them ensure compliance and detect deviations

# 12.3.1.4. Regular monitoring of local practices

CGGVeritas insures respect of both International Standards and internal rules by conducting social on-site audits (operations and sites). Two types of audits coexist:

- The HSE SR<sup>8</sup> audit: Since October 2010, HSE audits encompass social issues related to child labor, forced labor, freedom of association and collective bargaining, discrimination, disciplinary practices, working conditions, remuneration, social management system (policies, processes, etc.), security, and corruption. When audit reports mention one or several non-conformities, a specific social audit, known as an SR process audit, is planned to investigate on the non-conformities and introduce an action plan for improvement.
- The SR process audit: On the basis of two detected non-conformities, CGGVeritas conducted a first audit in 2011 on social concerns for one of our temp employment agencies in India. This type of audit will be conducted more frequently in 2012, namely where there are risks associated with Human Rights issues, and following HSE SR audits disclosing major issues of non-conformity.

#### 12.3.2 Contact with communities

One of CGGVeritas' main objectives regarding Corporate Social Responsibility is to maintain harmonious relations with local communities. In order to formalize local best practices, CGGVeritas has developed a document entitled "Community Relations Management Plan" (CRMP) identifying potential social impact on communities created by our activity. It includes tools to map local stakeholders (employees, local businesses, contractors, fishing communities, associations, etc.) and establish dialog with them. Moreover, it provides indicators and follow-up tables that allow us to assess our performance regarding relations with communities as well as our local contribution to economic development.

The CRMP is an efficient tool to manage the risk associated with community relations throughout the time span of a project and a document that can be presented to clients for an accurate analysis of these relations.

Other associated guidelines on related themes are included in the CRMP, such as fishery activities, permitting activities, or SD / SR project implementation guidelines.

As an example, CGGVeritas has recently implemented a process of consultation with local fishery communities in Brazil that were temporarily impacted by our activities. The aim was to collaborate on a sustainable development project to mitigate the impact of our operations. Meetings have been held to:

- explain seismic activity and its impact on communities;
- present the process for compensation claims;
- elect community' representatives to negotiate and identify needs;
- define with elected representatives the projects to implement.

As a result of this approach, fishermen have been trained in naval carpentry and electronic equipment maintenance (such as radio, sonar, etc.).

<sup>&</sup>lt;sup>8</sup> SR = Social Responsibility

#### 12.3.3 Local Content

# 12.3.3.1. In favor of local employment

Whenever and wherever possible, CGGVeritas privileges employment of local staff in compliance with local laws. CGGVeritas strives to train this staff, notably in health and safety issues, even if the local regulation does not require it.

The following data illustrates the implementation of this policy for land crews in 2011:

- In Thailand, CGGVeritas employed 800 Thai and 10 expatriates;
- In Peru, CGGVeritas employed 1547 Peruvians, of which 500 natives of the local area, and 38 expatriates;
- In Egypt, CGGVeritas employs, on the average, 520 Egyptians and 30 expatriates.

Permanent sites principally employ local nationals who take advantage of the principle of knowledgesharing that we implement between our sites. The table below presents the percentages of local employees by country.

Country	% of local staff	Country	% of local staff
Netherland	45,0%	Venezuela	89,30%
Oman	56,0%	Libya	90,5%
UAE	68,6%	Norway	92,5%
Brazil	69,4%	India	94,6%
Peru	75,0%	Malaysia	96,1%
Thailand	75,0%	UK	97,5%
Angola	76,0%	France	97,9%
Mexico	82,9%	USA	98,3%
Tunisia	83,3%	Canada	99,3%
Indonesia	85,1%	Chine	99,6%
Nigeria	85,3%	Argentina	100,0%
Egypt	86,6%	Australia	100,0%
Kazakhstan	87,5%	Switzerland	100,0%
Singapore	88,6%	Russia	100,0%

#### 12.3.3.2. In favor of local purchasing

In addition to local hiring, CGGVeritas strives to buy locally, whenever and wherever possible; this often has an important positive impact on the local economy.

For example, a land acquisition project which lasted 9 months in Louisiana (United States) boosted the local economy through local sourcing of services and goods. The expenses for hotel and apartment lodging exceeded US\$600,000 for a total of 12,000 nights, and fuel consumption exceeded US\$100,000.

In Egypt, local purchasing represented in 2011:

• bulldozer, vehicle, and boat rental: US\$1,000,000;

food and catering: US\$1,500,000;

spare parts: U\$\$1,000,000;logistics: U\$\$500,000.

# 12.3.4 A Sustainable Development Think Tank

The CGGVeritas SD Think Tank, launched in April 2011, is an interactive forum which can be accessed by all employees through the CGGVeritas intranet ("InSite") to submit and debate ideas on how to improve sustainability in the places we live and work. The best ideas are reviewed through a set process and, when accepted, the employee gets the opportunity to participate in bringing the idea which they have championed to life.

The SD Think Tank was created as a follow-up to the forward-thinking Energize Your Future forum in Paris attended by a group of young CGGVeritas professionals. The motivation and enthusiasm raised by the event led this group to promote the creation of the Think Tank, which was validated by the CGGVeritas Executive Committee. If an employee sees or thinks of something in their everyday work that could make a difference in our sustainability, the employee submits the idea on-line to the SD Think Tank. The idea is debated and voted on by colleagues, then submitted to a validation path until the last stage, where ideas are turned into projects.

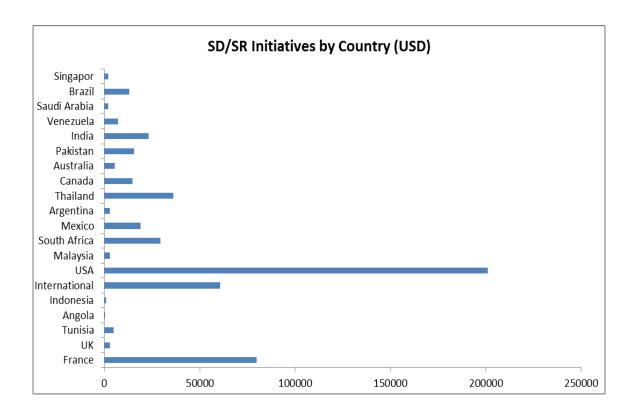
Since the release of the SD Think Tank, employees have generated and discussed more than 30 ideas, including promotion of organic food in CGGVeritas cafeterias, improved disposal of offshore waste, reduction in water consumption, and battery recycling techniques. One of the completed projects enabled four employees to contribute to preserving turtles in the Gulf of Mexico.

## 12.3.5 Community Action

CGGVeritas commits to meaningful actions for society-at-large and local communities. In 2011, CGGVeritas supported and participated in non-profit and institutional projects in the areas of earth sciences, education, health, international solidarity, social integration, and environmental protection.

A network of "Sustainable Development" correspondents has been set up to monitor and ensure consistency of local initiatives. The reporting of these initiatives is done on a monthly basis worldwide. CGGVeritas makes sure that these initiatives are in line with the priorities set via an internal validation process.

In 2011, CGGVeritas conducted initiatives in 19 countries for a total financial contribution of US\$523,742.



Each initiative is linked to a sustainable development or social responsibility challenge in the domains mentioned above. Some of these initiatives are described below:

# Initiatives contributing to local communities or other stakeholders, conducted directly by CGGVeritas or in partnership with other entities

CGGVeritas encourages this type of initiatives which are directly linked to our operations. They could take the form of a contribution to local development, protection of the environment in the area of operations, or the mitigation of our social and environmental impact.

In 2011, we planted a thousand mangrove trees in the area of our operations in Indonesia. In Brazil, we funded training in naval carpentry and electronics for fishermen impacted by our operations. In France, a number of employees are volunteers for the *Fondation de la 2ème Chance* and share their experience and knowledge with people in distressed situations and support them to successfully pursue their professional reinsertion projects.

## Initiatives that involve CGGVeritas employees in non-profit or NGO activities

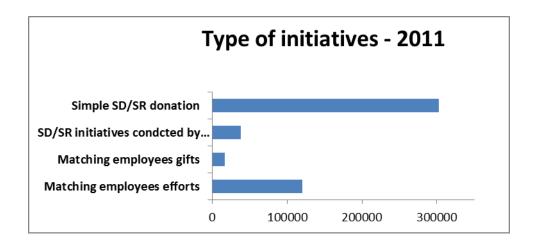
In many worldwide implantations, CGGVeritas employees are involved in fundraising efforts organized by non-profit groups or NGOs, or other specific groups. These efforts may involve participating in sports events. In 2011, employees participated in a running race in France (*Course contre la faim* organized by Action against Hunger), in India (Mumbai Marathon in favor of Muktangan), in Singapore (the JP Morgan Charity challenge), in a team cycling event in United States (the MS150 to aid multiple sclerosis research), and a climbing challenge (climbing of the Kilimanjaro in favor of cancer research).

# Corporate donations to match employee gifts to non-profit or NGO activities

CGGVeritas encourages participation in fundraising (financial, food collects, etc.) by matching individual gifts or the total equivalent, donated by employees. In line with this scheme, CGGVeritas matched in 2011 donations to a food bank in Canada, and fundraisers for cancer research in the UK, and the Red Cross in Mexico.

## Donation to worthy organizations

In 2011, CGGVeritas renewed its support to Muktangan, an NGO devoted to the educational needs of underprivileged children in India. CGGVeritas has also contributed to several non-profit groups and projects such as a book donation program for schools in Malaysia. Among many other donations, the Houston Charity Committee (Texas) continued to support the Top Hands Horse Show, enabling physically handicapped children to participate in a variety of horse riding activities.



# Incentive to support an NGO through the marine award system - TOP

CGGVeritas has implemented an award system for safety behavior in the Marine Division. When an employee identifies a risk or a best practice, they win points with which they can either buy goods on a dedicated website or donate for an equivalent amount to an international NGO: Care, UNICEF, or WWF.

# 12.3.6 Confirmed Listing with SRI Indexes

In 2011, various SRI (Socially Responsible Investment) indexes renewed their recognition of CGGVeritas' commitments to sustainable development.

SRI indexes assess company non-financial performance according to specific methodologies. They analyze the social policies, performance, and data, as well as the economic and environmental information released by companies with the aim to assign a non-financial rating to a company. This determines whether or not the company will be listed in the given index. Each year, these indexes assess company progresses in terms of sustainable development indicators and ensure that companies pursue an ongoing improvement process. In this way, SRI indexes select the most successful and conscientious companies in terms of sustainable practices.

In 2011, CGGVeritas has once again been included in the ASPI Eurozone Index (Advanced Sustainable Performance Indices) and Ethibel Excellence Index.

For the first time, CGGVeritas has been also selected for listing in the DJSI Europe (Dow Jones Sustainability Index Europe) which has a partnership with the asset management company SAM (Sustainability Asset Management), specialized in SRI funds and analysis. Today, CGGVeritas is the only seismic company listed on this index.

By being included in SRI listings, CGGVeritas gains visibility with investors who take into account ESG (Environment, Social, Governance) indicators for their stock selection or make SR investments. The indepth assessment methodology used by these indexes supports of the credibility of our Sustainable Development strategy.

#### 13. BOARD OF DIRECTORS AND GENERAL MANAGEMENT

# 13.1. **Board of Directors**

# 13.1.1. Members of the Board of Directors as of December 31, 2011

Name	Age	Positions	Initially appointed	Term expires <sup>(**)</sup>
(2)(/)(*)				
Robert BRUNCK <sup>(2)(4)(*)</sup>	62	Chairman of the	May 20, 1999	2012 General
Nationality: French		Board of Directors	(Director since	Meeting
			September 9, 1998)	
Jean-Georges MALCOR	55	Chief Executive	May 4, 2011	2015 General
Nationality: French		Officer and Director		Meeting
Olivier APPERT <sup>(2)(3)(*)</sup>	62	Director	May 15, 2003	2012 General
Nationality: French				Meeting
Loren CARROLL <sup>(1)</sup>	68	Director	January 12, 2007	2013 General
(independent Director)				Meeting
Nationality: American				
Rémi DORVAL <sup>(1)(3)</sup>	61	Director	March 8, 2005	2014 General
(independent Director)				Meeting
Nationality: French				
Jean DUNAND <sup>(1)</sup>	72	Director	September 8, 1999	2013 General
(independent Director)				Meeting
Nationality: French				
Gilberte LOMBARD <sup>(1)</sup>	67	Director	May 4, 2011	2015 General
(independent Director)				Meeting
Nationality: French				
Hilde MYRBERG <sup>(3)(5)</sup>	54	Director	May 4, 2011	2015 General
(independent Director)				Meeting
Nationality: Norwegian				
Denis RANQUE <sup>(2)(4)</sup>	60	Director	May 5, 2010	2014 General
Nationality: French				Meeting
Robert F. SEMMENS <sup>(2)(3)</sup>	54	Director	December 13, 1999	2015 General
Nationality: American				Meeting
Kathleen SENDALL (4)(5)	59	Director	May 5, 2010	2014 General
(independent Director)				Meeting
Nationality: Canadian				
Daniel VALOT <sup>(1)(*)</sup>	67	Director	March 14, 2001	2012 General
(independent Director)				Meeting
Nationality: French				
David WORK <sup>(3)(4)(5)</sup>	66	Director	January 12, 2007	2013 General
(independent Director)				Meeting
Nationality: American				
Terence YOUNG(4)(5)	65	Director	January 12, 2007	2013 General
(independent Director)				Meeting
Nationality: American				
(1) Member of the Audit Committe			L	L

<sup>(1)</sup> Member of the Audit Committee

<sup>(2)</sup> Member of the Strategic Committee

<sup>(3)</sup> Member of the Appointment & Remuneration Committee

<sup>(4)</sup> Member of the Technology Committee

<sup>(5)</sup> Member of the Health, Safety, Environment and Sustainable Development Committee

<sup>(\*)</sup> The renewal of this office will be submitted to the approval of general meeting of shareholders of May 10<sup>th</sup>, 2012.

<sup>(\*\*)</sup> Since the General Meeting held to approve the 2007 financial statements, the Directors are appointed for four years. However, the terms of Directors that are currently in force remain as initially set until expiration of their term.

The conditions of preparation and organization of the meeting of the Board of Directors and its Committees are detailed in the report of the Chairman on Board of Directors' composition, preparation and organization of the Board of Directors' work, on internal control and risks management, appended to the present annual management report.

#### 13.1.2. Other positions held by the Directors as of December 31, 2011

Mr. Robert Brunck (number of securities owned: 172,890 shares)

Chairman of the Board of Directors

**Positions within the Group:** None **Positions held in other companies:** 

#### French institutions and companies:

Centre Européen d'Education Permanente (CEDEP)	Director
Association pour la Recherche et le développement des	Chairman
Méthodes et Processus industriels (ARMINES)	
Ecole Nationale Supérieure de Géologie (ENSG)	Director
Bureau de Recherches Géologiques et Minières (BRGM)	Director
Groupement des Entreprises Parapétrolières et	Director
Paragazières - Association Française des Techniciens	
du Pétrole (GEP-AFTP)	
Nexans	Director and Member of the Appointment and
(company listed on Euronext Paris)	Remuneration Committee

Mr. Olivier Appert (number of securities owned: 1,848 shares)

Director

**Positions within the Group**: None **Positions held in other companies:** 

#### French institutions and companies:

IFP Energies Nouvelles	Chairman and Chief Executive Officer
Technip	Director, Member of the Strategic Committee and
(company listed on Euronext Paris)	of the Ethics & Governance Committee
Institut de Physique du Globe de Paris (IPGP)	Director
Storengy	Director

Mr. Rémi Dorval (number of securities owned: 500 shares)

Director

**Positions within the Group**: None **Positions held in other companies:** 

French companies:

Solétanche Freyssinet Director
VINCI (company listed on Euronext Paris) Executive Vice President

Mr. Jean Dunand (number of securities owned: 4,250 shares)

Director

Positions within the Group: None

Positions held in other companies: None

Mr. Robert F. Semmens (number of securities owned: 10,490 shares and 350 ADS)

Director

**Positions within the Group:** None **Positions held in other companies :** 

# Foreign institutions and companies:

MicroPharma Limited (Canada)	Director
Sense Networks, Inc. (USA)	Member of the Advisory Board
Bronco Holdings, LLC. (USA)	Director
Leonard N. Stern School of Business, New York University	Adjunct Professor of Finance

Mr. Daniel Valot (number of securities owned: 1,935 shares)

Director

**Positions within the Group:** None **Positions held in other companies:** 

French companies:

SCOR Director, Member of the Strategy Committee, Audit (company listed on Euronext Paris)

Committee, Compensation and Nomination

Committee and Risk Committee

Dietswell

Mr. Loren Carroll (number of securities owned: 500 ADS)

Director

**Positions within the Group:** None **Positions held in other companies:** 

#### Foreign companies:

Forest Oil Corporation (USA)

(company listed on the New York Stock Exchange)

KBR Inc. (USA)

Director, Member of the Compensation

Committee and Chairman of the Nominating
and Corporate Governance Committee

Director, Member of the Audit Committee,

Company listed on the New York Stock Exchange)

Chairman of the Compensation Committee

# Mr. David Work (number of securities owned: 500 ADS)

Director

**Positions within the Group:** None **Positions held in other companies:** 

# Foreign companies:

Cody Resources LLC. (USA)	Director
WPX Energy Inc. (USA)	Director and Member of the Compensation
(company listed on the New York Stock Exchange)	Committee

Mr. Terence Young (number of securities owned: 500 ADS)

Director

Positions within the Group: None

**Positions held in other companies:** None

Mr. Denis Ranque (number of securities owned: 500 shares)

Director

**Positions within the Group**: None **Positions held in other companies**:

# French institutions and companies:

Technicolor	Chairman of the Board of Directors and Member of
(company listed on Euronext Paris)	the Remuneration, Nominations and Governance
	Committee
Saint Gobain	Director and Member of the Financial Statements
(company listed on Euronext Paris)	Committee
CMA-CGM	Director and Chairman of the Audit Committee
SCILAB-Entreprises SAS	Chairman
Ecole Nationale Supérieure des Mines de Paris	Chairman
Cercle de l'Industrie	Chairman
Centre National de la Recherche Scientifique (CNRS)	Director
Fonds Stratégique d'Investissement (FSI)	Director
Association Nationale Recherche Technologie	Chairman
Fondation ParisTech	Chairman

Mrs. Kathleen Sendall (number of securities owned: 500 ADS)

Director

**Positions within the Group**: None **Positions held in other companies:** 

# Foreign institutions and companies:

Alberta Innovates – Energy & Environment Solutions (Canada)	Vice-Chairman and Director
ENMAX (Canada)	Director
Michaelle Jean Foundation (Canada)	Director
Canadian centre for Energy Information (Canada)	Director

Mrs. Gilberte Lombard (number of securities owned: 500 shares)

Director

**Positions within the Group**: None **Positions held in other companies**:

#### French companies:

Zodiac Aérospace	Member of the Supervisory Board, Chairman of the Audit
(company listed on Euronext Paris)	Committee and Member of the Remuneration Committee
Robertet	Director, Chairman of the Remuneration Committee and
(company listed on Euronext Paris)	Member of the Audit Committee

Mrs. Hilde Myrberg (number of securities owned: 500 shares)

Director

**Positions within the Group**: None **Positions held in other companies:** 

# Foreign companies:

Orkla ASA (Norway)	Senior Vice-Président Governance & Compliance
(company listed on the Oslo Stock Exchange)	
Petoro AS (Norway)	Vice Chairman of the Board of Directors
Renewable Energy Corporation ASA (Norway)	Director and Member of the Corporate
(company listed on the Oslo Stock Exchange)	Governance Committee
Gjensidige Forsikring ASA (Norway)	Member of the Supervisory Board
(company listed on the Oslo Stock Exchange)	
Jotun AS (Norway)	Member of the Supervisory Board

#### 13.2. Chief Executive Officer

Nom	Age	Position	Date of appointment	Term expires
Jean-Georges MALCOR	55	Chief Executive Officer	June 30 <sup>th</sup> , 2010	After the 2012 General meeting
		Director	May 4 <sup>th</sup> , 2011	2015 General meeting

# Other positions held by the Chief Executive Officer on December 31, 2011:

**Mr. Jean-Georges MALCOR** (number of securities owned: 500 shares) *Chief Executive Officer* 

#### Positions within the Group:

#### French companies:

CGGVeritas Services S.A.	Chairman and Chief Executive Officer
Sercel Holding S.A.	Chairman of the Supervisory Board

#### Positions held in other companies:

#### French institutions and companies:

Association des Centraliens	Director
Fondation Villette Entreprises	Director

#### Foreign companies:

STMicroelectronics (the Netherlands)	Director and Member of the Audit Committee
(company listed on the New York Stock Exchange ,	
on Euronext Paris and on Borsa Italiana)	

#### 13.3. <u>Directors' fees</u>

In January 2012, the Company paid an aggregate amount of € 730,000 to the members of the Board for fiscal year 2011. This amount is divided into a fixed and variable component on the basis of two-thirds of the basic amount for function and one-third for presence as described hereafter. The basic amount is set at € 580,000 plus a lump sum, amounting to € 150,000 allocated as described hereafter.

#### Allocation of the basic amount:

The fixed component is calculated on the basis of one share for each Director and an additional share as a committee member. The remuneration of any Director appointed in the course of the year is calculated on a pro-rata temporis basis.

The variable component linked to the participation in committees and Board meetings is calculated on the basis of one share for each meeting of the Board, its Committees or the Joint Committees attended, with a 1.5 share for Board or Committee Chairs (this rule will apply as well to a chairman attending a joint committee meeting of all committees). A Director who participates in a Board committee's meeting as a guest does not receive any fee.

# Allocation of the lump sum:

In addition, a lump sum is allocated as follows:

- € 20,000 for each Director residing abroad, i.e. a global amount of € 120,000;
- € 10,000 for the Chairman of the Audit Committee;
- € 5,000 for each other Audit Committee's member, i.e. a global amount of € 20,000.

The table below sets forth the gross amount paid to each CGGVeritas Director by the Company and/or by its subsidiaries for the past two fiscal years. Mr. Jean-Georges MALCOR, Chief Executive Officer and Director, does not receive any Directors' fee.

<u>Directors</u>	Amounts paid for fiscal year 2010	Amounts paid for fiscal year 2011
Robert BRUNCK		
Director's fees	€ 47,946.24	€ 49,997.56
Other remunerations	N/A	N/A
Jean-Georges MALCOR <sup>(5)</sup>		
Director's fees	N/A	N/A
Other remunerations	N/A	N/A
Olivier APPERT		
Director's fees	€ 44,770.31	€ 44,379.32
Other remunerations	N/A	N/A
Loren CARROLL		
Director's fees	€ 57,871.57 <sup>(1)</sup> € 15,000 <sup>(2)</sup>	€ 62,297.52
Other remunerations	N/A	N/A
Rémi DORVAL		
Director's fees	€ 48,409.20 <sup>(1)</sup>	€ 58,302.40
	€ 15,000 <sup>(2)</sup>	
Other remunerations	N/A	N/A
Jean DUNAND		
Director's fees	€ 48,996.57	€ 52,254.78
Other remunerations	N/A	N/A
Anders FARESTVEIT <sup>(4)</sup>		
Director's fees	€ 50,603.05	€ 17,490.36
Other remunerations	N/A	N/A
Yves LESAGE <sup>(4)</sup>		
Director's fees	€ 49,316.61	€ 19,463.31
Other remunerations	N/A	N/A

<u>Directors</u>	Amounts paid for fiscal year 2010	Amounts paid for fiscal year 2011
Gilberte LOMBARD <sup>(5)</sup>		
Director's fees	N/A	€ 26,557.11
Other remunerations	N/A	N/A
Hilde MYRBERG <sup>(5)</sup>		
Director's fees	N/A	€ 30,624.74
Other remunerations	N/A	N/A
Denis RANQUE		
Director's fees	€ 19,813.60	€ 44,969.15
Other remunerations	N/A	N/A
Robert SEMMENS		
Director's fees	€ 69,534.20 <sup>(1)</sup>	€ 70,989.01
	€ 15,000 <sup>(3)</sup>	
Other remunerations	N/A	N/A
Kathleen SENDALL		
Director's fees	€ 40,721.01	€ 69,667.07
Other remunerations	N/A	N/A
Daniel VALOT		
Director's fees	€ 38,778.97 <sup>(1)</sup>	€ 40,314.61
	€ 15,000 <sup>(2)</sup>	
Other remunerations	N/A	N/A
David WORK		
Director's fees	€ 54,232.68	€ 78,974.70
Other remunerations	N/A	N/A
Terence YOUNG		
Director's fees	€ 50,149.34	€ 63,718.36
Other remunerations	N/A	N/A

<sup>&</sup>lt;sup>(1)</sup> Director's fees paid by CGG Veritas as Board member.

<sup>(2)</sup> Director's fees paid by CGGVeritas Services Holding B.V. as member of the Supervisory Board. Messrs. Loren CARROLL, Rémi DORVAL and Daniel VALOT resigned from their position as of September 1, 2010. Within CGGVeritas Services Holding B.V., only non-executive directors receive directors' fees in the form of an annual lump sum of €15,000.

<sup>(3)</sup> Director's fees paid by Sercel Holding as Supervisory Board member. Mr. Robert SEMMENS resigned from his position as of July 22, 2010. Within Sercel Holding, only non-executive directors receive directors' fees in the form of a lump sum of €15,000.

<sup>(4)</sup> Resigned from his duties of Board member of the Company on May 4, 2011.

<sup>(5)</sup> Appointed as Director of the Company on May 4, 2011.

Pursuant to applicable law, Directors (except the Chairman and the Chief Executive Officer), are not entitled to be allocated stock-options and/or performance shares of the Company.

# 14. COMPENSATION OF THE CHAIRMAN OF THE BOARD OF DIRECTORS AND OF THE CHIEF EXECUTIVE OFFICER

#### 14.1. <u>Compensation</u>

The aggregate compensation of Mr. Robert BRUNCK, Chairman, and Mr. Jean-Georges MALCOR, Chief Executive Officer, both being hereinafter referred to as the "Executive Officers" (mandataires sociaux) includes a fixed element and a bonus. The bonus for a given fiscal year is determined and paid during the first semester of the following fiscal year.

For fiscal year 2011, the variable part of the Chief Executive Officer's compensation is based on the achievement of personal objectives (representing one third of the bonus) and financial objectives (representing two thirds of the bonus). His target amount is set at 100% of his fixed remuneration. The financial objectives are related to the Group revenues (weighted 30%), operating income (weighted 35%), EBITDAS less capital expenditures (weighted 20%) and Group free cash flow (weighted 15%).

The variable part of the Chairman's compensation in 2011 was based on the achievement of personal objectives related to his missions. His target amount was set at 50% of his fixed remuneration.

#### 14.1.1. Compensation of Mr. Robert BRUNCK, Chairman of the Board

The gross fixed and variable compensation earned by and paid by the Company and its subsidiaries to Mr. Robert BRUNCK, Chairman of the Board of Directors, for fiscal years 2010 and 2011 is set forth below:

	20	010	2011		
Robert BRUNCK	Amounts earned	Amounts paid	Amounts earned	Amounts paid	
Chairman of the Board of Directors					
Fixed compensation	€447,500.00	€447,500.00	€275,000.00	€275,000.00	
Variable compensation	€139,738.00 €0.00 <sup>(1)</sup>		€103,125.00 <sup>4)</sup>	€139,738.00 <sup>(3)</sup>	
Exceptional compensation	N/A N/A		N/A	N/A	
Retirement indemnity	N/A	€370,450.00	N/A	N/A	
Director' fees	€47,946.24	€50,762.99 <sup>(2)</sup>	€49,997.56 <sup>(6)</sup>	€47,946.24 <sup>(5)</sup>	
Benefits in kind (company car)	€6,840.00	€6,840.00	€6,840.00	€6,840.00	
TOTAL	€642,024.24	€875,552.99	€434,962.56	€469,524.24	

<sup>(1)</sup> The Executive Officers ("mandataires sociaux") and the other members of the Executive Committee have decided to forego payment of their 2009 bonus.

Paid in January 2010 for fiscal year 2009.

<sup>&</sup>lt;sup>(3)</sup> Paid in March 2011 for fiscal year 2010.

<sup>&</sup>lt;sup>(4)</sup> To be paid in March 2012 for fiscal year 2011.

<sup>&</sup>lt;sup>(5)</sup> Paid in January 2011 for fiscal year 2010.

<sup>&</sup>lt;sup>(6)</sup> Paid in January 2012 for fiscal year 2011.

During 2011, the Chairman of the Board, in his capacity as Chairman of the Strategic Committee, ensured that the Board shared and approved the strategy proposed by the Chief Executive Officer and made sure it was implemented. He also contributed to an appropriate representation of the Company and made sure to keep an on-going dialogue with the main customers, shareholders, governments and regulatory agencies. Finally, from a general standpoint, he supported the Chief Executive Officer in perfecting his knowledge of the oil industry and the oil services sector.

As from fiscal year 2012, Mr. Robert BRUNCK will no longer receive a variable compensation.

#### 14.1.2. Compensation of Jean-Georges MALCOR, Chief Executive Officer

The gross fixed and variable compensations paid by the Company and its subsidiaries to Mr. Jean-Georges MALCOR, Chief Executive Officer, in fiscal years 2010 and 2011 are set forth below:

	20	10	2011		
Jean-Georges MALCOR Chief Executive Officer	Amounts earned	Amounts paid	Amounts earned	Amounts paid	
Fixed compensation	€500,000.00	€500,000.00	€600,000.00	€600,000.00	
Variable compensation	€169,850.00	N/A	€608,502.00 <sup>(2)</sup>	€169,850.00 <sup>(1)</sup>	
Indemnity paid upon termination of the employment agreement	€22,500.00	€22,500.00 €22,500.00		N/A	
Exceptional compensation	N/A	N/A	N/A	N/A	
Director' fees	N/A	N/A	N/A	N/A	
Benefits in kind (company car)	€6,270.00	€6,270.00	€6,840.00	€6,840.00	
TOTAL	€698,620.00	€528,770.00	€1,215,342.00	€776,690.00	

<sup>(1)</sup> Paid in March 2011 for fiscal year 2010.

#### 14.2. Stock-options and performance shares

Pursuant to article L.225-102-1 of the French Commercial Code, the stock-options and performance shares allocated to the Executive Officers for the last two years are set forth below. Stock-options and performance shares are generally granted each year, in March, after the financial statements of the previous fiscal year are publicly disclosed.

<sup>(2)</sup> To be paid in March 2012 for fiscal year 2011.

#### 14.2.1. Stock-options

Name of the Executive Officer ("mandataire social")	Date of the Plan	Number of options allocated during fiscal year <sup>(1)</sup>	Valuation of options pursuant to the method used for consolidated financial statements (€)	Subscription price <sup>(1)</sup>	Exercise period
Robert BRUNCK Chairman of the Board of Directors	03/22/2010	200,000 <sup>(2)</sup>	1,515,000	€19.44	From 03/23/2011 to 03/22/2018 inclusive
Robert BRUNCK Chairman of the Board of Directors	03/24/2011	66 667 <sup>(2)</sup>	373,122	€ 25.48	03/25/2011 au 03/24/2019 inclusive
Jean-Georges MALCOR Chief Executive Officer	01/06/2010 <sup>(3)</sup>	220,000	1,810,600	€14.71	From 01/07/2010 to 01/06/2018 inclusive
Jean-Georges MALCOR Chief Executive Officer	03/22/2010 <sup>(3)</sup>	162,500	1,641,250	€19.44	From 03/23/2011 to 03/22/2018 inclusive
Jean-Georges MALCOR Chief Executive Officer	03/24/2011	133,333 <sup>(2)</sup>	746,238	€ 25.48	From 03/25/2012 to 03/24/2018 inclusive

<sup>(1)</sup> The subscription price corresponds to the average of the opening share prices of the share on the last twenty trading days prior to the meeting of the Board of Directors granting the options.

Stock-options are allocated without any possible discount.

The conditions of the plans applicable to the Executive officers are those of the general plans, plus those described below. With respect to the plan of March 22, 2010, these conditions are only applicable to Mr. Robert BRUNCK. As Mr. Jean-Georges MALCOR was not yet an Executive Officer on March 22, 2010, he benefited from the general plan applicable to the other senior managers and employees of the Group (see paragraph 17.1).

#### **Performance conditions:**

The Board of Directors decided, in accordance with the provisions of the AFEP-MEDEF code that, for the first three years of the plans dated March 22, 2010 and March 24, 2011, the acquisition of options is subject to <u>performance conditions</u> based on the achievement of one of the three objectives stated below:

- a share price performance objective relative to the SBF 120 index;
- a share price performance objective relative to the PHLX Oil Service Sector<sup>SM</sup> (OSX<sup>SM</sup>);
- a financial indicator objective of EBITDAS denominated in US\$ and related to the target for the annual variable part of the compensation of the Executive Officers ("mandataires sociaux").

<sup>&</sup>lt;sup>(2)</sup> Subject to the performance conditions described below.

<sup>(3)</sup> As of the date of this plan, Mr. Jean-Georges MALCOR was not yet an Executive Officer of the Company. Therefore, the stock-options allocated to him are not subject to performance conditions.

#### Obligation to keep stock-options under the registered form:

Pursuant to the provisions of article L.225-185 of the French commercial code, the Board of Directors decided that the number of shares resulting from the exercise of stock-options that the Executive Officers will have to keep under the registered form until the end of their term shall account for 20% of the amount of the gain on the purchase price realized when exercising the options granted by the Board of Directors on March 22, 2010<sup>9</sup> and March 24, 2011.

#### 14.2.2. Performance shares

Name of the Executive Officer ("mandataire social")	Date of the Board of Directors' meeting	Maximum number of shares allocated during fiscal year	Valuation of shares (€)	Final allocation Date	Date of availability	Performance conditions
Robert BRUNCK Chairman of the Board of Directors	03/22/2010	27,500	550,825	03/22/2012	03/22/2014	EBIT EBITDAS
Robert BRUNCK Chairman of the Board of Directors	03/24/2011	13,750	355,300	03/24/2013	03/24/2015	EBIT EBITDAS
Jean-Georges MALCOR Chief Executive Officer	03/22/2010 <sup>(1)</sup>	22,500	450,675	03/22/2012	03/22/2014	EBIT EBITDAS
Jean-Georges MALCOR Chief Executive Officer	03/24/2011 <sup>(1)</sup>	27,500	710,600	03/24/2013	03/24/2015	EBIT EBITDAS

As of the date of this plan, Mr. Jean-Georges MALCOR was not yet an Executive Officer of the Company.

#### Plans dated March 22, 2010 and March 24, 2011:

Pursuant to article L.225-197-1 of the French Commercial Code, the Board of Directors decided that the number of performance shares thus allocated to the Executive Officers with respect to the plans dated March 22, 2010 and March 24, 2011 will be set at 10% of such allocation, which the Executive Officers will have to keep under the registered form until the end of their term.

In accordance with the AFEP-MEDEF code, the Board of Directors held on March 22, 2010<sup>9</sup> and March 24, 2011 also decided to set the number of additional shares that the Executive officers are required to purchase at the end of the allocation period of the performance shares thus granted under the 2010 and 2011 plans at one (1) share for twenty (20) allocated shares.

The Board of Directors held on February 29, 2012 acknowledged that, for the plan of March 22, 2010, the performance condition based on EBI was fulfilled up to 153 % for the Equipment segment and up to 75 % at the Group level. None of the performance conditions were fulfilled for the Services segment. As a result, Messrs. BRUNCK and MALCOR will be allocated respectively 8,695 and 7,114 shares under this plan.

<sup>&</sup>lt;sup>9</sup> With respect to the plan dated March 22, 2010, this obligation applies to Mr. Robert BRUNCK only, as he was the only Executive Officer (*mandataire social*) of the Company when stock-options were allocated.

#### Plan dated March 16, 2009:

The Board of Directors acknowledged, on February 24, 2011, that the performance conditions of the plan dated March 16, 2009 were only partially met. Therefore, no shares were allocated to Mr. Robert BRUNCK pursuant to this plan.

As from 2012, Mr. Robert BRUNCK, Chairman of the Board of Directors, will no longer be allocated stockoptions or performance shares.

#### 14.3. Contractual indemnity in case of termination of Executive Officer functions

The advantages granted to Mr. Jean-Georges MALCOR in case of termination of his functions as Executive Officer were approved by the Board of Directors meeting held on February 24, 2011 and ratified by the General Meeting of May 4, 2011, pursuant to article L.225-42-1 of the French Commercial Code. These advantages are the following:

Mr. Jean-Georges MALCOR does not benefit from any contractual termination indemnity, except in case of a forced departure relating to a change of control or a change of strategy. Such indemnity shall be equal to the difference between:

(i) a gross amount of 200% of the gross fixed compensation paid by the Company to Mr. Jean-Georges MALCOR during the twelve-month period preceding his departure date, to which is added the annual average of the variable compensation paid by the Company to Mr. Jean-Georges MALCOR (i) over the thirty-six-month period preceding his departure date or (ii) over the full years of presence in the Company starting as from January 1, 2010, in case he leaves the Group less than thirty-six months after he joined the Company, (hereinafter "the Reference Annual Compensation") and

(ii) any sum to which Mr. Jean-Georges MALCOR may be entitled as a result of such termination, including any sums to be paid further to the application of his non-competition commitment.

The indemnity global amount shall not exceed 200% of the Reference Annual Compensation.

Pursuant to article L.225-42-1 of the Commercial Code, the payment of the special termination indemnity referred to hereinabove shall remain subject to the achievement of the following performance conditions, related to the Company's performance:

- The average, over the sixty trading days preceding the departure date, of the ratio between the CGGVeritas ADS price over the PHLX Oil Service Sector<sup>SM</sup> (OSX<sup>SM</sup>) index shall equal at least two-third of the same average ratio over the same sixty-day period (i) four years before the date on which Mr. MALCOR leaves the Group or (ii) as of January 1, 2010 in case Mr. Jean-Georges MALCOR leaves the Group before reaching a four-year seniority;
- The average, over the sixty trading days preceding the departure date, of the ratio between the CGGVeritas share price over SBF 120 index shall equal at least two-third of the same average ratio over the same sixty-day period (i) four years before the date on which Mr. MALCOR leaves the Group or (ii) as of January 1, 2010 in case Mr. Jean-Georges MALCOR leaves the Group before reaching a four-year seniority;
- The average margin rate of the Group EBITDAS (i) over the four years preceding the date on which Mr. MALCOR leaves the Group or (ii) over a period starting as from January 1, 2010 in case Mr. Jean-Georges MALCOR leaves the Group before reaching a four-year seniority, shall be at least 25%.

Payment of the full amount of the special termination indemnity is subject to the fulfillment of two conditions out of three. In case only one condition is fulfilled, then Mr. Jean-Georges MALCOR will be entitled to receive only 50% of the said special termination indemnity.

Finally, pursuant to said article L.225-42-1 of the Commercial Code in particular, the Board of Directors shall verify prior to the payment of the special severance payment (i) that the performance conditions described hereabove in paragraph 13.3.1. are duly fulfilled and (ii) that the payment of such special termination indemnity complies with the corporate governance code applicable at the date of departure.

Mr. Robert BRUNCK does not benefit from any contractual indemnity in case of termination of his office.

# 14.4. Non-compete agreement

On June 30, 2010, the Board of Directors approved, in accordance with procedures applicable to related party agreements and provided for by section L.225-38 et seq. of the French Commercial Code, the signature of a non-compete agreement between the Company and Mr. Jean-Georges MALCOR. This agreement was ratified by the General Meeting held on May 4, 2011.

This non-compete agreement applies to any geophysical data acquisition, processing or interpretation services or the provision of equipment or products designed for the acquisition, processing or interpretation of geophysical data. Mr. Jean-Georges MALCOR has agreed that he will not contribute to projects or activities in the same field as those in which he was involved at CGGVeritas for period of eighteen months starting on the date on which he leaves the Group.

In consideration for this undertaking, Mr. Jean-Georges MALCOR will be entitled to receive compensation corresponding to 100% of his annual reference compensation as defined in the protection letters related to payment of the contractual indemnity in case of termination of his office.

# 14.5. General benefits plan

On June 30, 2010, the Board of Directors approved, in accordance with procedures applicable to related party agreements and provided for by section L.225-38 et seq. of the French Commercial Code, the extension to Mr. Robert BRUNCK and Mr. Jean-Georges MALCOR of the benefit of the Group's general benefits plan applicable to all employees. This agreement was ratified by the General Meeting held on May 4, 2011.

#### 14.6. <u>Individual benefits plan</u>

On June 30, 2010, the Board of Directors approved, in accordance with procedures applicable to related party agreements and provided for by section L.225-38 et seq. of the French Commercial Code, the execution of a supplementary individual benefits plan benefiting to Mr. Jean-Georges MALCOR. In this respect, the Board of Directors authorized the Company to pay an initial amount of €43,000. This agreement was ratified by the General Meeting held on May 4, 2011. This plan took effect in September 2011, for a period ending on December 31, 2014. In addition, on November 30, 2011, and pursuant to the procedure applicable to related-parties agreement set forth by section L. 225-38 and seq. of the French Commercial, the Board of Directors authorized the final execution of this agreement as per the final conditions proposed by the insurer and authorized as well the Company to pay an additional amount of €40,000 for the whole duration of the agreement.

# 14.7. <u>Individual insurance covering loss of employment</u>

Pursuant to the procedure applicable to related-parties agreement set forth by section L. 225-38 and seq. of the French Commercial Code, the Board of Directors authorized, on June 30, 2010, the Company to subscribe with GSC Gan, as from July 1, 2010, an individual insurance policy covering loss of employment, in favor of Mr. Jean-Georges MALCOR. The annual subscription fee payable by the Company amounts to € 10,000 for 2011. This insurance provides for the payment of a maximum of 13% of his 2011 target

compensation (corresponding to €160,037), for a duration of twelve months. This agreement was ratified by the General Meeting held on May 4, 2011.

#### 14.8. Supplemental Retirement Plan

A supplemental retirement plan for the members of the Executive Committee and the Management Board of Sercel Holding (whom we refer to here as the "Beneficiaries") was implemented on January 1, 2005. The Chief Executive Officer benefits from this plan. It is an additive defined benefit plan with a cap. Accruals are acquired per year of services, with a ceiling of twenty years.

Further, to participate in the plan, the Beneficiaries shall comply with the main following cumulative conditions:

- have liquidated their social security pension and all possible other rights to pensions,
- have at least 5 years of service as member of the Executive Committee of the Group and until they were 55 years of age, and
- end their professional career when leaving the Company.

As of December 31, 2011, the Company's commitment under the supplemental retirement plan corresponds for the Chief Executive Officer to an annual pension equal to 15% of his annual 2011 target compensation.

The aggregate present benefit value of this supplemental plan as of December 31, 2011 was €8,590,862 of which €1,185,924 has been recorded as an expense for fiscal year 2011. Of such present benefit value, the portions relating to the Chief Executive Officer are €1,960,523 and €182,704 respectively.

# 15. IDENTITY OF SHAREHOLDERS HOLDING MORE THAN 5% OF THE SHARES AND/OR VOTING RIGHTS OF THE COMPANY – CHANGES IN THE SHARE CAPITAL DURING 2011

# 15.1. Changes in the share capital during fiscal year 2011

<u>Transactions</u>	Nominal value	Number of options created	Amount of the share premium	Amount of the capital variation	Successive amounts of the share capital
Exercize of stock options as of September 30, 2011	€0.40	12,031	€103,425.02	€4,812	€60,744,772
Exercize of stock options as of June 30, 2011	€0.40	22,409	€205,841.14	€8,963.60	€60,739,960
Performance shares allocation as of May 9, 2011	€0.40	37,000	N/A	€14,800	€60,730,996
Exercize of stock options as of May 9, 2011	€0.40	37,217	€184,811.71	€14,886.80	€60,716,187
Exercize of stock options as of March 31, 2011	€0.40	247,166	€1,708,199.59	€98,866.40	€60,701,310

As of December 31, 2011, the only dilutive instruments issued were stock-options, performance shares and bonds convertible into new or existing shares. As of this date, there was a respective balance of 7,062,320 outstanding stock-options, 998,511 performance shares not yet issued and 12,949,640 bonds convertible into new or existing shares representing a dilution percentage of 5.31 %, 0.66 % and 8.53 %, respectively.

# 15.2. <u>Breakdown of the share capital – Identity of shareholders holding more than 5% of the shares or voting rights</u>

	Decembe	er 31, 2011	Decembe	r 31, 2010	December 31, 2009		
	% of shares	% of voting rights	% of shares	% of voting rights	% of shares	% of voting rights	
Jupiter Asset Management Limited	-	-	-	-	3.87	3.69	
IFP Energies Nouvelles (formerly named « Institut Français du Pétrole »)	4.18	8.00	4.19	8.03	4.33	8.26	
Fonds Stratégique d'Investissement (« FSI »)	6.50	6.22	6.00	5.75	-	-	
Manning & Napier	4.99 <sup>(1)</sup>	4.77 <sup>(1)</sup>	6.17	5.91	-	-	
Black Rock Inc.	4.93 <sup>(2)</sup>	4.72 <sup>(2)</sup>	5.40	5.17	1	1	
FCPE "CGG Actionnariat"	0.05	0.10	0.05	0.10	0.05	0.10	
Stock Treasury	0.53	0	0.53	0	0,40	0	
Floating	78.82	76.19	77.66	75.04	91.35	87.95	
Total	100%	100 %	100 %	100 %	100 %	100 %	
Number of outstanding shares and voting rights	151,861,932	151,687,288	151,506,109	185,132,659	151,146,594	158,398,080	

<sup>(1)</sup> Calculated on the basis of the number of shares owned by Manning & Napier as indicated in the notice of threshold crossing dated November 17, 2011.

#### 16. EMPLOYEES SHAREHOLDING

Pursuant to article L.225-102 of the French Commercial Code, we inform you that on December 31, 2011, the number of shares held by the employees of the Group, through the Group Employee Savings Plan instituted during fiscal 1997, amounted to 81,000 shares corresponding to 0.05 % of the share capital 0.10 % of the voting rights.

#### 17. STOCK OPTIONS AND PERFORMANCE SHARES

In accordance with sections L. 225-184 and L. 225-197-4 of the French Commercial Code, the plans currently in force are described in separate special reports of the Board of Directors.

#### 17.1. Stock-options plans

Individual information on stock-options allocated to the Executive Officers is set forth in paragraph 14.2.1.

The table below summarizes the evolution, during fiscal year 2011, of the stock-options plans put in place by virtue of the authorizations granted by the General Meetings of May 11, 2006 and April 29, 2008 respectively.

<sup>(2)</sup> Calculated on the basis of the number of shares owned by Black Rock, Inc. as indicated in the notice of threshold crossing dated November 30, 2011.

	2006 Plan	2007 Plan	2008 Plan	<u>2009 Plan</u>		2010 Plans		<u>2011 Plan</u>	<u>Total</u>
Date of the Board of Directors' meeting	05/11/2006	03/23/2007	03/14/2008	03/16/2009	01/06/2010	03/22/2010	10/21/2010	03/24/2011	
Number of beneficiaries	171	145	130	149	1	339	3	366	
Total number of shares (1) that can be subscribed,	1,012,500	1,308,750	1,188,500	1,327,000	220,000	1,548,150	120,000	1,164,363	7,889,263
Out of which the number can be exercised by:									
Executive Officers :									
Robert Brunck	150,000	200,000	200,000	200,000	0	200,000	0	66,667	1,016,667
Jean-Georges Malcor	_	-	_	_	220,000	162,500	0	133,333	515,833
Start date of options exercise	05/12/2007	03/24/2008	03/15/2009	03/17/2010	01/07/2010	03/23/2011	10/22/2011	03/25/2012	
Expiration date	05/10/2014	03/23/2015	03/14/2016	03/16/2017	01/06/2018	03/22/2018	10/21/2018	03/24/2019	
Subscription price (in €) <sup>(1)(2)</sup>	26.26	30.4	32.57	8.82	14.71	19.44	16.887	25.48	
Exercise rules (when the plan provides for several batches of options)	- Options accrue rights by fourth every year during the first four years;  - prohibition to sell or transfer shares before May 12, 2010.	- Options accrue rights by third every year during the first three years;  - prohibition to sell or transfer his shares before March 24, 2011 for French tax residents.	- Options accrue rights by third every year during the first three years;  - prohibition to sell or transfer his shares before March 15, 2012 for French tax residents.	- Options accrue rights by third every year during the first three years;  - prohibition to sell or transfer his shares before March 17, 2013 for French tax residents.	immediately and by fourth every year during the two following years;  - prohibition to sell or transfer his shares before	- Options accrue rights by third every year during the first three years; - prohibition to sell or transfer his shares before March 23, 2014 for French tax residents.	- Options accrue rights by third every year during the first three years;  - prohibition to sell or transfer his shares before October 21, 2014 for French tax residents.	- Options accrue rights by third every year during the first three years;  - prohibition to sell or transfer his shares before March 25, 2015 for French tax residents.	
Number of shares subscribed as at December 31, 2011 <sup>(3)</sup>	2,500	2,000	0	251,050	0	37,295	0	0	292,845
Cumulated number of stock-options which were cancelled or lapsed <sup>(3)</sup>	15,861	89,550	109,160	89,675	0	68,470	0	61,473	434,189
Remaining stock-options at the end of fiscal of year <sup>(1)</sup>	951,095	1,164,000	1,079,340	982,610	220,000	1,442,385	120,000	1,102,890	7,062,320
Out of which the remaining number is held by:									
Executive officers									
Robert Brunck	150,000	200,000	200,000	200,000	0	200,000	0	66,667	1,016,667
Jean-Georges Malcor	_	_	_	_	220,000	162,500	0	133,333	515,833

<sup>(1)</sup> Considering the adjustments done, both on the subscription price and on the number of shares underlying further to the capital increase of December 2005 and to the five-for-one stock split effective as of June 3, 2008.

<sup>(2)</sup> The subscription price corresponds to the average of the opening share prices of the share on the last twenty trading days prior to the meeting of the Board of Directors granting the options.

 $<sup>^{(3)}</sup>$  Without taking into account the various adjustments that have occurred after the implementation of the plans.

Upon the date of this report, the exercise price for the plans implemented in 2006, 2007, 2008 and 2011 exceeds CGGVeritas share market price.

#### 17.2. <u>Performance shares plans</u>

Individual information on performance shares allocated to the Executive Officers is set forth in paragraph 14.2.2.

For your information, the terms and conditions of the plans dated March 22, 2010 and March 24, 2011 are summarized in the chart below:

	March 22, 2010 Plan	March 24, 2011
Number of shares initially allocated	509,925	488,586
Number of beneficiaries	332	365
Date of the shareholders' meeting having authorized the allocation	April 29, 2008	April 29, 2008
Allocation date	March 22, 2010	March 24, 2011
Number of shares finally allocated upon expiry of the acquisition period	76,842 <sup>(*)</sup>	N/A
Final allocation date	March 22, 2012	March 24, 2013
Retention period	March 22, 2014	March 24, 2015
Performance conditions	Operating income EBITDAS	Operating income EBITDAS
Validation of achievement of performance conditions	Board of Directors	Board of Directors

<sup>(\*)</sup> The Board of Directors held on February 29, 2012 confirmed that the performance conditions for the plan implemented on March 22, 2010 were partially fulfilled (see paragraph 14.2.2) and that a maximum of 76,842 shares will be allocated pursuant to this plan on May 10, 2012, i.e 15% of the whole plan.

#### 18. SHARE BUYBACK PROGRAM

The Ordinary General Meeting held on May 4, 2011 authorized the Board of Directors to carry out transactions on the Company shares for an eighteen-month period following the date of such meeting with the following objectives:

- to support liquidity of our shares through a liquidity contract entered into with an investment service provider in compliance with the Code of Practice of the Association Française des Marchés Financiers,
- to deliver shares in the scope of securities giving access, immediately or in the future, to shares by redemption, conversion, exchange, presentation of a warrant or by any other means,

- to deliver, immediately or in the future, shares in exchange in the scope of external growth, within 5 % of capital,
- to allocate shares to employees and officers of the Company or affiliated companies within the meaning of article L.225-180 of the French Commercial Code, especially in the scope of options to purchase shares of the Company,
- to allocate free shares to employees or Executive Officers pursuant to articles L. 225-197-1 and seq. of the French Commercial Code,
- cancel the shares through a capital reduction, subject to a decision of, or an authorization, by the extraordinary general meeting.

In accordance with such objectives, the treasury shares so acquired may either be retained, cancelled, sold or transferred. The shares may be acquired, sold or transferred on one or several occasions, by any means, including by agreement or stock market purchase, by offer to buy, to exchange or to sell, or by blocks of shares and by any option mecanism or derivative instruments, and at any moment, except during a take-over bid. The maximum amount of share capital that can be purchased or transferred as block of shares can reach the whole amount of this program.

The maximum purchase price per share approved by the General Meeting was € 40.

The maximum number of shares that the Company may hold shall not exceed 10% of the capital as of the date of the acquisition of shares, including the shares already held. Notwithstanding the above, pursuant to article L.225-209, paragraph 6 of the French Commercial Code, the number of shares to be acquired in order to be kept and delivered in the future in payment or exchange in the scope of a merger, demerger or contribution in kind should not exceed 5% of the share capital.

This authorization canceled and replaced the authorization granted to the Board of Directors by the General Meeting held on May 5, 2010.

As of December 31, 2011, the Company held 800,000 of its own shares.

# 19. TRANSACTIONS CARRIED OUT BY EXECUTIVES OR THEIR CLOSE RELATIVES ON THE COMPANY' SHARES

Pursuant to article L.621-18-2 of the French *Code monétaire et financier* and article 223-26 of the General Regulation of the French Market Authority, summary of the transactions carried out pursuant to the above mentioned article L. 621-18-2 are set out in Annex A.

Executive Officers, Directors and members of the Executive Committee are forbidden to carry out any transaction on the Company shares, whatever its nature, including the exercise of stock options:

- during the thirty calendar days preceding the publication of quarterly, semi-annual or annual results (the transactions on the Company shares can be carried out the day after the date of publication of the results),
- (ii) In case they hold any information which could have a sight influence on the share value in case of public disclosure.

#### 20. ITEMS LIKELY TO HAVE AN INFLUENCE IN THE EVENT OF A TAKE-OVER BID

Pursuant to article L.225-100-3 of the French Commercial Code, we inform you hereafter of the items likely to have an influence in the event of a take-over bid.

#### **Capital structure of the Company:**

#### *Notice of crossing of a statutory threshold:*

We remind you that pursuant to article 7.2 of the by-laws of the Company, any shareholder holding directly or indirectly a portion amounting to 1% of the stock capital or of the voting rights or a multiple of this percentage, within the meaning of article L. 233-7 of the French Commercial Code, shall give notice to the Company of the number of shares or voting rights he holds, within five trading days from the date on which one of these thresholds was exceeded.

In the event of failure to comply with this notification requirement, and upon request of one or several shareholders holding at least 1 percent of the capital, such request being recorded in the minutes of the General Meeting, those shares in excess of the fraction that should have been declared shall be deprived of their voting rights from the date of said General Meeting and for any other subsequent General Meeting to be held until the expiry of a two-year period following the date on which the required notification of the passing of the threshold will have been regularized.

Similarly, any shareholder whose shareholding is reduced below one of these thresholds shall give notice thereof to the Company within the same five-day period.

#### Double voting right:

As from May 22 1997, a double voting right is allocated to all registered and fully paid-up shares registered in the name of the same holder for at least two years.

Statutory restrictions concerning the exercise of voting rights and share transfers or clauses of agreements which the Company is aware of, in compliance with article L.233-11 of the French Commercial Code:

There is no statutory restriction to the exercise of voting right and share transfers. The Company is not aware of any agreement in compliance with article L.233-11 of the French Commercial Code.

Direct or indirect shareholding in the share capital of the Company notified pursuant to sections L.233-7 and L.233-12 of the French Commercial Code:

See chart paragraph 15.2.

List of holders of any security with special control rights and related description:

There is no holder of securities with special rights.

Control mechanism included in a potential system of employees share ownership, when control rights are not exercised by them:

Not applicable

Agreements between shareholders which the Company is aware of and which are likely to restrict share transfers and the exercise of voting rights:

The Company is not aware of any agreement between shareholders likely to restrict share transfers and the exercise voting rights.

Rules applicable to the appointment and replacement of members of the Board of Directors or Supervisory Board as well as the modification of bylaws:

The rules applicable to the appointment and replacement of Board of Directors' members are described in article 14 of the by-laws. The rules applicable to the modification of by-laws are described in article L.225-96 of the French Commercial Code.

None of these rules is likely to have an influence in the event of a take-over bid.

# Powers of the Board of Directors, in particular the issuance or re-purchase of shares:

The Board of Directors does not have any specific power likely to have an influence in the event of a takeover bid. The delegations of competence currently in force cannot be used by the Board of Directors in the event of a take-over bid.

Agreements entered into by the Company and modified or terminated in the event of change of control over the Company:

The indentures governing our outstanding senior notes and certain of our credit facilities provide for an early redemption of the loans, at the option of the lenders, in the event of a change of control, pursuant to the terms specified in each agreement.

Agreements providing for severance payments to employees who resign or who are dismissed without cause or employees whose employment is terminated in the event of a take-over bid:

In addition to the agreements referred to in paragraph 14.3 with respect to the Company's Executive Officers, we inform you that certain executives of the Group benefit from a protection letter providing for the payment of a severance payment in the event of dismissal or change of control. The amount of such severance payment depends upon the positions and classifications of each concerned persons.

# SUMMARY OF THE FINANCIAL DELEGATIONS AND AUTHORIZATIONS SUBMITTED FOR SHAREHOLDERS' APPROVAL AT THE ANNUAL GENERAL MEETING OF MAY 10, 2012 AND THE USE OF THOSE IN FORCE DURING 2011 FISCAL YEAR

# **Share capital increases**

	Authorizations in force during 2011 fiscal year					Authorizations submitted for shareholders' approval at the General Meeting of May 10, 2012		
	Resolution number - GM	Period	Maximum authorized amount	Use of the authorization in 2011	Resolution number	Period	Maximum amount	
Increase of share capital through the issue of shares, or any other securities giving access to the share	10 <sup>th</sup> - 2010 <sup>(2)</sup>	26 months	€ 30 million <sup>(1)</sup>	None	N/A			
capital, with preferential subscription rights in favor of holders of existing shares	13 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	€ 30 million <sup>(1)</sup>	None	N/A			
Increase of share capital through the issue of shares, or other securities, without preferential	11 <sup>th</sup> - 2010 <sup>(2)</sup>	26 months	€ 9 million <sup>(3)</sup>	None	N1/A	N1/A		
subscription rights in favor of the holders of existing shares through a public offer	14 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	€ 9 million <sup>(3)</sup>	None	N/A			
Increase of share capital through the issue of shares, or other securities, without preferential subscription rights in favor of the holders of existing shares made by private placement	12 <sup>th</sup> - 2010	26 months	€ 9 million <sup>(3)</sup>	January 27, 2011: issuance of bonds convertible into and/or exchangeable for new or existing shares for a minimum global amount of € 359,999,992. The maturity date of the loan is January 1, 2016.	N/A			
private placement	15 <sup>th</sup> - 2011	26 months	€ 9 million <sup>(3)</sup>	None				
Increase of the number of shares issued pursuant to the three	14 <sup>th</sup> - 2010 <sup>(2)</sup>	26 months	15% of the initial issue	None	N/A			
resolutions listed above	17 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	15% of the initial issue	None	11/1			

	Authorizations in force during 2011 fiscal year				Authorizations submitted for shareholders' approval at the General Meeting of May 10, 2012		
	Resolution number - GM	Period	Maximum authorized amount	Use of the authorization in 2011	Resolution number	Period	Maximum amount
Increase of share capital by incorporation of reserves, profits or	15 <sup>th</sup> - 2010 <sup>(2)</sup>	26 months	€ 10 million <sup>(3)</sup>	None			
premiums	18 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	€ 10 million <sup>(3)</sup>	None	N/A		
Increase of capital in order to compensate for contributions in kind	16 <sup>th</sup> - 2010 <sup>(2)</sup>	26 months	10% of the share capital as of the date of the Board of Directors' decision	None			
	19 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	10% of the share capital as of the date of the Board of Directors' decision	None	N/A		
Issuance of securities giving right to	22 <sup>nd</sup> - 2010 <sup>(2)</sup>	26 months	€ 1,2 billion	None	-N/A		
debt securities	26 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	€ 1,2 billion	None	14,71		
Increase of capital, reserving the subscription of the shares to be issued to members of a Company Savings Plan ("Plan d'Epargne Entreprise")	17 <sup>th</sup> - 2010 <sup>(2)</sup>	26 months	€ 2.5 million <sup>(3)</sup>	None	-N/A		
	20 <sup>th</sup> - 2011 <sup>(2)</sup>	26 months	€ 2.5 million <sup>(3)</sup>	None			

<sup>(1)</sup> Aggregate ceiling for share capital increases, any operations considered, to the exception of stock-options and performance shares allocations

<sup>(2)</sup> Cancels and replaces, for the non used portion, the resolutions voted in this respect during the previous General Meetings

 $<sup>^{(3)}</sup>$  Within the limit of the aggregate ceiling of  ${\ensuremath{\mathfrak{C}}}$  30 million

# Stock-options, performance shares and free shares

	Authorizations in force during 2011 fiscal year				Authorizations submitted for shareholders' approval at the General Meeting of May 10, 2012		
	Resolution number - GM	Period	Maximum authorized amount	Use of the authorization in 2011	Resolution number	Period	Maximum amount
Stock-options	18 <sup>th(2)</sup> - 2008	38 months	5% of the share capital as of the date the Board of Directors' decision. No discount.	Allocation of 1,164,363 options on March 24, 2011			
	21 <sup>st(2)</sup> - 2011 / Allocation to the employees (excluding the Chief Executive Officer and the members of the Executive Committee)	26 months	0.81% of the share capital as of the date the Board of Directors' decision. No discount.	None	N/A		
	22 <sup>nd(2)</sup> - 2011 / Allocation to the Chief Executive Officer and the members of the Executive Committee	26 months	1.2% of the share capital as of the date the Board of Directors' decision. No discount.	None			
Performance shares	19 <sup>th(2)</sup> - 2008	38 months	1% of the share capital as of the date the Board of Directors' decision.	Allocation of 488,586 performance shares on March 24, 2011			
	23 <sup>rd(2)</sup> - 2011 / Allocation to the employees (excluding the Chief Executive Officer and the members of the Executive Committee)	26 months	0.53% of the share capital as of the date the Board of Directors' decision. No discount.	None	N/A		
	24 <sup>th(2)</sup> - 2011 / Allocation to the Chief Executive Officer and the members of the Executive Committee	26 months	0.14% of the share capital as of the date the Board of Directors' decision. No discount.	None			
Free shares	20 <sup>th</sup> - 2010	38 months	0,5% of the share capital as of the date the Board of Directors' decision.	None	N/A		

<sup>(2)</sup> Cancels and replaces, for the non used portion, the resolutions voted in this respect during the previous General Meetings

# Share buy-back program

	Authorization in force during 2011 fiscal year				Authorization submitted for shareholders' approval at the General Meeting of May 10, 2012		
	Resolution number - GM	Period	Maximum authorized amount	Use of the authorization in 2011	Resolution number	Period	Maximum amount
Share repurchase	8 <sup>th</sup> - 2010 <sup>(2)</sup>	11X months	Limit provided by law. Maximum purchase price : € 40	None	- 9 <sup>th(2)</sup> 18 months		
	9 <sup>th</sup> - 2011 <sup>(2)</sup>	11X months	Limit provided by law. Maximum purchase price : € 40	None		Limit provided by law.  Maximum purchase price  : € 40	

<sup>(2)</sup> Cancels and replaces, for the non used portion, the resolutions voted in this respect during the previous General Meetings

# **Capital reduction by canceling shares**

	Authorization in force during fiscal year 2011				Authorization submitted for shareholders' approval at the General Meeting of May 10, 2012		
	Resolution number - GM	Period	Maximum authorized amount	Use of the authorization in 2011	Resolution number	Period	Maximum amount
Share cancellation	21 <sup>st</sup> - 2010 <sup>(2)</sup>	18 months	10% of the share capital	None	N/A		
	25 <sup>th</sup> - 2011 <sup>(2)</sup>	18 months	10% of the share capital	None	N/A		

<sup>(2)</sup> Cancels and replaces, for the non used portion, the resolutions voted in this respect during the previous General Meetings

Annex B TRANSACTIONS CARRIED OUT ON THE COMPANY'S SHARES BY SENIOR EXECUTIVES, MEMBERS OF THE EXECUTIVE COMMITTEE AND THEIR CLOSE RELATIVES IN 2011

Name	Type of transaction	Date	Unit price	Amount of the transaction
Lionel LHOMMET  Executive Vice  President  Geomarkets & Global  Marketing	Stock option exercise Transfer of shares	February 28, 2011 February 28, 2011	€2.91 €26.0148	€9,690.30 €86,629.28
Stéphan MIDENET Executive Vice President Land Division	Stock option exercise Transfer of shares	February 28, 2011 February 28, 2011	€2.91 €27.07	€2,051.55 €19,084.35
Gérard CHAMBOVET Executive Vice President General Secretary	Stock option exercise Transfer of shares	February 28, 2011 February 28, 2011	€2.91 €27.1278	€14,550 €27,137.80
Anders FARESTVEIT Director	Transfer of shares in the name of Anfar Invest AS <sup>10</sup> Transfer of shares in the name of Anfar Invest AS <sup>10</sup>	February 28, 2011  March 4, 2011	€27.0606 €27.0135	€270,606 €1,350,675
Robert BRUNCK Chairman of the Board	Stock option exercise	March 16, 2011	€2.91	€112,806.15
Thierry LE ROUX Executive Vice President Business Development	Stock option exercise Stock option exercise Transfer of shares Transfer of shares Transfer of shares Transfer of shares	March 25, 2011 March 25, 2011 May 4, 2011 June 14, 2011 July 29, 2011 August 1, 2011	€8.82 €19.44 €23.50 €24.6709 €23.79 €24	€734,988.24 €388,800 €499,375 €197,367.20 €237,900 €360,000
Jean-Georges MALCOR Chief Executive Officer and Director	Shares purchase	May 5, 2011	€22.485	€11,242.50
Colin MURDOCH Executive Vice President Processing, Imaging & Reservoir Division	Transfer of shares Stock option exercise Transfer of shares Stock option exercise Transfer of shares	May 6, 2011 May 9, 2011 May 9, 2011 June 1, 2011 June 1, 2011	€22.7667	€68,300.10 €73,206 €193,999.22 €161,352 €217,895.75

<sup>&</sup>lt;sup>10</sup> A company registered in Norway, fully owned by Mr. Anders Farestveit.

Hilde MYRBERG Director	Shares purchase	May 11, 2011	US\$33.89	US\$16,945
Dominique ROBERT	Transfer of shares	May 27, 2011	€25.847	€206,780.80
•	Transfer of Stiates	IVIAY 27, 2011	€23.647	£200,760.60
Executive Vice				
President Global				
Operational				
Excellence				
Olivier APPERT	Shares purchase	August 19, 2011	€15	€ 5,021.32
Director				
Luc SCHLUMBERGER	Stock option exercise	August 26, 2011	€8.82	€73,497.06
Executive Vice	Transfer of shares	August 26, 2011	€15.44	€128,661.52
President Multi				
Client and New				
Ventures				