PNG LNG Quarterly Environmental and Social Report

Second Quarter

2012

PNG LNG

Energy for the World. Opportunity for Papua New Guinea.
Eneji Bilong Wol. Luksave Bilong Papua Niugini.

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Prepared by IDP Consulting Pty Ltd.

While this Report uses US English; document titles, institutions and legislation use exact titles, which may include variations of English, depending on the country of origin. In addition, all units of measure published in this Report are metric units.

For the purposes of this Report, the currency conversion rate used, between Papua New Guinea Kina (Kina) and United States Dollars (US$) is 0.4840 [1 Kina = US$0.4840]. This rate is as published by the Bank of Papua New Guinea at June 30, 2012.

PNG LNG

About This Report

The Papua New Guinea Liquefied Natural Gas Quarterly Environmental and Social Report – Second Quarter 2012, reports on the Project's recent construction, safety, health, environment and social management activities.

This Report demonstrates the progress made each quarter and is a commitment by the Project to ensure the citizens of Papua New Guinea, interested non-government organizations and other stakeholders are kept well informed.

This Report is published on the Project website, www.pnglng.com. Printed copies are also available.

Contents

Working together to achieve success

"The workers, suppliers and stakeholders involved in the PNG LNG Project have built a strong team over the last two years. We respect and understand each other's roles and share in each other's successes."

Decie Autin, Project Executive, Esso Highlands Limited

Since construction started in 2010, the Papua New Guinea Liquefied Natural Gas (PNG LNG) Project (the Project) has built a unified team of workers, contractors, community members and other stakeholders. This team is now enabling the delivery of key Project milestones and environmental, social and health commitments that will contribute to a sustainable future for Papua New Guinea.

This is the tenth PNG LNG Quarterly Environmental and Social Report, which outlines how Esso Highlands Limited, as operator of the US$15.7 billion Project, is delivering on the Project's social, environmental, health and safety commitments. As a subsidiary of Exxon Mobil Corporation, Esso Highlands Limited is responsible for the Project's construction and operation and is developing the Project with co-venturers: Oil Search Limited, National Petroleum Company of PNG (Kroton) Limited, Santos Limited, JX Nippon Oil and Gas Exploration Corporation, Mineral Resources Development Company Limited and Petromin PNG Holdings Limited, and their affiliates.

Workforce development

With construction activities at their peak, more than 17,600 people are now working together to deliver on the Project's commitments across multiple project sites. Of those workers, close to half are Papua New Guineans, with Landowner Companies (Lancos) continuing to provide more than 70 percent of the total Papua New Guinean workforce.

17,600+ people make up the total Project workforce

During this quarter, the Project delivered more than 950 courses equating to almost 147,000 training hours to help prepare the workforce for construction and operations roles. More than 10,000 Papua New Guinean citizens have undertaken training on the Project-to-date, bringing the total training hours to more than 1.3 million and the total number of courses delivered to more than 5,000.

The Port Moresby Construction Training Facility now boasts more than 1,600 graduates, with 30 percent female. Of these, more than 300 graduates have achieved the internationally recognized Technical and Further Education (TAFE) Australia Certificate Level I in Resource and Infrastructure Operations, while 35 have achieved an Australian Quality Training Framework standard Certificate Level II in General Construction and Civil Construction.

Port Moresby Construction Training Facility graduates

The Project's first intake of Operations and Maintenance trainees, initially recruited in mid-2010, is almost halfway through completing Advanced Skills training in Nova Scotia, Canada while the second intake is participating in the Foundation Skills Program in Papua New Guinea.

As work is completed on the Project, the demand for a large workforce will reduce. However, the extensive training the Project has provided to workers during the past two years has given them the skills needed to take advantage of other opportunities. This includes areas such as other mining and oil and gas projects, or government infrastructure projects. The Project's capacity building and livelihood development programs are also supporting communities with local business development.

Growing Papua New Guinean businesses

The work of the Enterprise Centre and the Project's Business Development team has played an important role in promoting local participation in the Project, with approximately 183 million Kina (US$88 million) in Project-related spend with Lancos this quarter and 1 billion Kina (US$480 million) to date.

This has contributed towards a total in-country Project-related spend with both Lanco and non-Lanco suppliers reaching almost 5 billion Kina (US$2.4 billion) to date.

5 billion Kina spent in Papua New Guinea to date

During this quarter, the Enterprise Centre achieved its own important milestone, completing its 200th business assessment report since it began in 2010. Overall, the Centre achieved 1,002 training days – a 67 percent increase from the first quarter 2012. This is due in part to the growing number of women's organizations taking advantage of the training and business assessment opportunities the Centre offers.

During May, the Centre's Annual Road Show focused on helping companies based outside of the Project impact area participate in Project-related business opportunities.

Meanwhile, in addition to Project-related activities, Lancos are taking advantage of business opportunities not directly related to Project construction. For example, four Lancos from the LNG plant site villages have formed a profit-sharing partnership with the long-standing local retail and wholesale company, RH Trading Limited, to operate three commissaries at the LNG plant site. The commissaries, which opened in April, are selling small grocery items to LNG plant site workers who previously had to travel to Port Moresby to buy supplies.

Construction

The Project remains on target for the 2014 start-up window, achieving numerous construction milestones this quarter. This included completing installation of the 407-kilometre offshore pipeline, the jetty trestle, the north and south LNG tank outer shells and roof installation; and over 80 percent of the Drilling Rig 702 set up on Wellpad B.

Key construction highlights are outlined in Table 1.

407-kilometre offshore pipeline installation completed

Drilling Rig 702 at Wellpad B

Table 1 – Contracts and construction highlights

Contract	Contractor	Major activities during the second quarter 2012
Upstream Infrastructure (C1)	Clough Curtain Brothers Joint Venture	Majority of earthworks along the Wellpad Access Road completed. Completion and handover of the process area of the Hides Gas Conditioning Plant to the Hides Gas Conditioning Plant and Hides Wellpads contractor.
Offshore Pipeline (EPC2)	Saipem	Completion of the 407-kilometre offshore pipeline installation.
LNG Plant and Marine Facilities (EPC3)	Chiyoda and JGC	Completion of the outer shells and roof installation for the two LNG tanks. Completion of the 2.4-kilometre jetty trestle.
Hides Gas Conditioning Plant and Hides Wellpads (EPC4)	CBI Clough Joint Venture	Concrete pouring for the equipment foundations began in the utility area. Structural steel and underground piping installation commenced.
Onshore Pipeline (EPC5A)	SpieCapag	More than 170 kilometres of welding completed on the 292-kilometre pipeline. Almost 180 kilometres of the pipeline Right of Way cleared and graded. The third and largest of four horizontal directional drilling operations completed under the Mubi River.
Komo Airfield (EPC5B)	McConnell Dowell and Consolidated Contractor Group	More than 800 metres of runway length completed. Completion of 75 percent of the steel erection for the support facilities.
Associated Gas Development	Various	Construction began at the Gobe Production Facility. Completion of commissioning and performance testing of the triethylene glycol unit and associated gas cooler at the Kutubu Central Processing Facility. Two new platform generators commissioned at the Kumul Marine Terminal.
Drilling (new wells and workovers)	Nabors Drilling International Limited	Set-up of the first drilling rig on Wellpad B. Second drilling rig began the 800-kilometre journey along the Highlands Highway to the Hides area.

Safety, health and security

The Project had the safest quarter to date, despite construction being at its peak and achieving over one million work hours per week.

Over 33,000 pipe joints safely transported from Malaysia to Papua New Guinea

This improving safety trend is attributed to ongoing improvements in core safety processes related to construction activity, and the commitment of Project workers to take care of themselves and each other. For example, during this quarter the Project initiated regular Safety Best Practice meetings as part of the Leading Indicators for Higher Hazard Activities program established during the first quarter 2012.

Meanwhile, an Operations Centre was established in Hides to help coordinate security and journey management in the northern Project areas.

The Health team is supporting Project contractors as they move construction activities and camps along the onshore pipeline. This includes assessing hygiene and food and water quality as new worksites and camps are established and ensuring the quality of pre-employment medical screening and health assessments. The Health team is also working with contractors and the Project's medical provider to ensure adequate medical resourcing is provided at Upstream work locations.

Tuberculosis diagnosis significantly improved during this quarter, through revised diagnostic and contact tracing procedures. This included the introduction of GeneXpert® technology to both the Project and the Kikori Hospital as part of the 'Partnership for Health' agreement with the Papua New Guinea Institute of Medical Research.

The GeneXpert technology significantly reduces the diagnostic time taken to obtain a result for suspected tuberculosis from weeks to hours, and with 99 percent accuracy. This will assist with the effective diagnosis and management of tuberculosis both within the Project and in the community.

Communities will also benefit from the construction of the National Infectious Disease Diagnostic and Research Laboratory at the University of Papua New Guinea School of Medicine and Health Sciences in Port Moresby, which was funded by Esso Highlands Limited and will be fully operational by the fourth quarter 2012.

Social development

The Socioeconomic team continues supporting community development committees and expanding training programs for Papua New Guineans through initiatives such as targeted training opportunities for women and Personal Viability training. The latter helps participants better manage their time and money, foster better relationships between family members, clans and social groups, and become more confident about starting their own micro income-generating projects. So far more than 560 people from the Hides, Komo, Kutubu, Moran and LNG plant site areas have participated in Personal Viability training.

Also, two women, Cathy Alex and Doris Pipi from the Southern Highlands Province, attended a five-week Global Women in Management program in Washington DC with Project sponsorship, this quarter. The program is specifically designed to help women from developing countries improve their economic participation within their country.

The Project is continuing its Support to Schools program by donating cabinets filled with school reading materials, as well as water tanks, to schools in the LNG plant site villages. Through the combined efforts of the Project and its contractors, a new purpose-built elementary school building was also constructed and opened in Hides this quarter, catering to children in pre-school, grade 1 and grade 2.

The students of Para Elementary School at the official opening ceremony

In addition to supporting schools, the Project donated US$300,000 to Papua New Guinea's Urban Youth Employment Program. The Program provides pre-employment training and apprenticeships to at-risk young people in Papua New Guinea's National Capital District. The Project has committed a total of US$900,000 to support this Program.

Environmental performance

During this quarter, the Project's first independent weed review evaluated the implementation and effectiveness of the Project's Weed, Plant Pathogen and Pest Management Plan as well as contractors' weed management programs. The review found that Project and contractor facilities generally showed compliance with the Plan, including high levels of weed hygiene noted at worksites and a strong focus by contractors on achieving positive weed management outcomes.

The Lender Group's Independent Environmental and Social Consultant (IESC) also monitored conformance with the Project's environmental and social commitments during its sixth site visit, conducted in March 2012. The report from the visit is available on the Project website and outlines the IESC's findings from inspections of selected worksites and meetings with Project workers and involved communities.

This quarter, the Project awarded a contract for the provision of waste collection services and operation of the Hides Waste Management Facility. Waste oil processing also commenced at facilities in Lae and Port Moresby following Project review and approval. Meanwhile, Project contractors are identifying opportunities to increase recycling. For example, the Onshore Pipeline contractor is re-using packaging cardboard to wrap and protect bales of tin cans and plastics during their transfer to third party processing facilities. At the LNG plant site, the success of a biodigester for treating food waste has led to procurement of a second unit. Approximately two tonnes of composted material removed from the first biodigester was used as fertilizer on land surrounding the LNG plant site.

Worksites across the Project marked World Environment Day on June 5 with local activities including a can recycling competition, which resulted in 59 kilograms of cans collected and donated for recycling at Hides.

Cleaning up Project sites on World Environment Day

With the start of drilling preparation works this quarter, training and awareness sessions were conducted with the Drilling contractor covering topics such as animal protection and weed identification. The Drilling team also undertook formal Project-led spill response training. Arrangements were made with a third party vendor to provide spill response support services for spills that exceed on-site capabilities, ensuring that appropriate spill response capacity is in place before drilling commences.

Reinstatement has been another key activity this quarter as construction work finishes at a number of Project worksites.

Stakeholder and community engagement

Livelihood restoration activities were a highlight this quarter with the Project distributing nearly 28,000 sweet potato cuttings, 940 cassava cuttings, 1,700 pineapple offshoots (slips), 530 orange/mandarin seedlings, 340 kilograms of corn, 260 kilograms of peanuts and 2.1 kilograms of temperate climate vegetable seeds in the Hides and Komo areas. During the past two years, the Project has focused on propagating plants and livestock for livelihood restoration activities. The emphasis now also includes encouraging villagers to use their skills to generate incomes for themselves and their communities. In the longer term, it is anticipated that such micro-businesses will become self-sustaining, without any need for Project support.

During this quarter, the Project registered and categorized 100 grievances, which was a 23 percent decrease from last quarter. The decrease in grievances may be attributed to factors such as two major construction contractors completing their work and the near completion of land access activities.

The Project's water taskforce continues to collaborate with communities to address water-related grievances and potential construction impacts to watercourses. This quarter, an additional 14 water structures were constructed, bringing the number of water structures built for communities in the Hides and Komo areas to 61.

The Project's engagement with communities and other stakeholders to keep them informed of Project activities and reinforce safety messages continues. For example, during this quarter the Project launched a monthly newspaper column from Esso Highlands Limited Managing Director, Peter Graham. The column, entitled '*Yumi Stori long PNG LNG*' (Let's have a chat about PNG LNG), updates readers on the Project's construction progress and community programs. The first column was published in the two daily newspapers, *The National* and the *Post Courier*, and was translated into Tok Pisin for the *Wantok Nius*.

Almost 28,000 participants in engagement activities to date

Also this quarter, Papua New Guinea's national rugby league team, the Kumuls, visited Onshore Pipeline worksites over a seven-day period. Their visit attracted national newspaper coverage.

The Kumuls visiting Project worksites to reinforce key safety messages

In collaboration with the Papua New Guinean Department of Foreign Affairs, the Project provided a construction update and LNG plant site tour to 15 representatives from foreign missions in Papua New Guinea, including ten Heads of Mission.

Following engagements with the Hela Transitional Authority and the Central Provincial Government during the first quarter 2012, the Project also met with the provincial administrations for the Gulf Province and Southern Highlands Province with the aim of working collaboratively with them to achieve positive development outcomes in areas impacted by Project induced in-migration. Meanwhile, Kikori-based government agencies implemented influx control measures including a five-year development plan and in-migration public awareness activities in concert with local community groups. The Kikori District Local Level Government has also developed an in-migration policy.

As the Project moves from the construction phase towards operational activities, building a culture of teamwork becomes increasingly important for the long-term workforce. The Project is engaging with workers, community members and other key stakeholders to foster teamwork and drive successful and sustainable outcomes for Papua New Guinea.

1 Introduction

Building and maintaining a culture of teamwork across the PNG LNG Project workforce, partner organizations, contractors and stakeholders is enabling the Project to deliver on its commitments.

In the past two years, the Project has been committed to building a culture of teamwork and is now maintaining that culture through ongoing communications such as this Quarterly Environmental and Social Report. This tenth quarterly report is part of a series that provides updates on the Project's construction, safety, health, environmental and social management activities.

The US$15.7 billion Project involves the construction of gas production and processing facilities in the Southern Highlands, Hela and Western Provinces of Papua New Guinea. It encompasses liquefaction and storage facilities (located north-west of Port Moresby on the Gulf of Papua) with a capacity of 6.6 million tonnes per year. More than 700 kilometres of pipelines will connect the facilities. The Project will progress in development phases, with the first LNG deliveries scheduled to begin in 2014.

During the life of the Project, it is anticipated that over 250 billion cubic metres of gas will be produced and sold.

This will provide a long-term supply of LNG to customers such as: the China Petroleum and Chemical Corporation (Sinopec); The Tokyo Electric Power Company Inc.; Osaka Gas Company Limited; and the Chinese Petroleum Corporation, Taiwan. The location and elements of the Project are illustrated in Figure 1.1. Appendix 1 outlines how the contracts for Phase I of the Project are divided.

The complete Quarterly Environmental and Social Report series is available on the Project's website.

Read the Quarterly Environmental and Social Report series at
www.pnglng.com

Printed copies of each quarterly report and translated summaries are also provided to make information available to Papua New Guinean citizens who may have limited access to the internet.

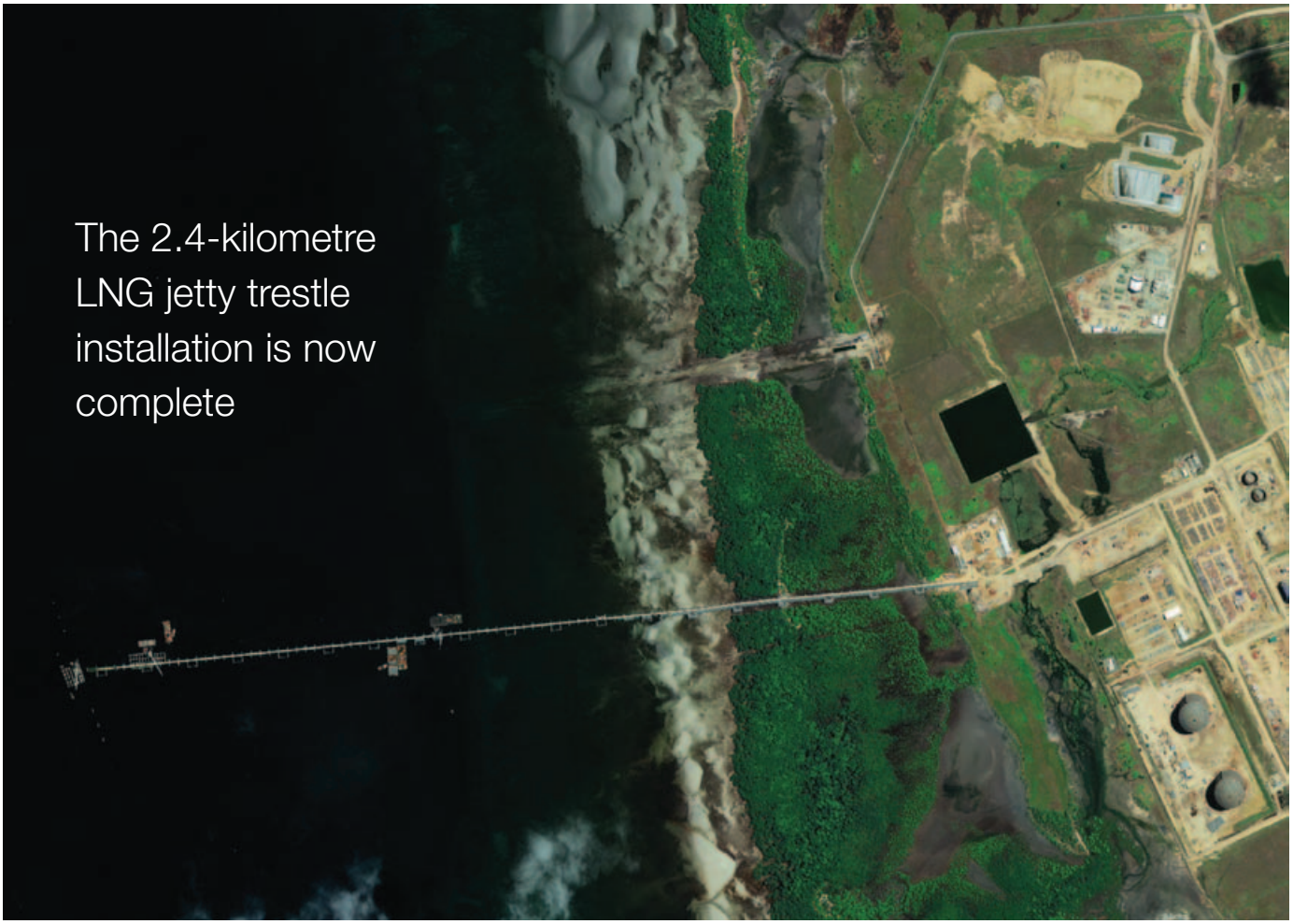
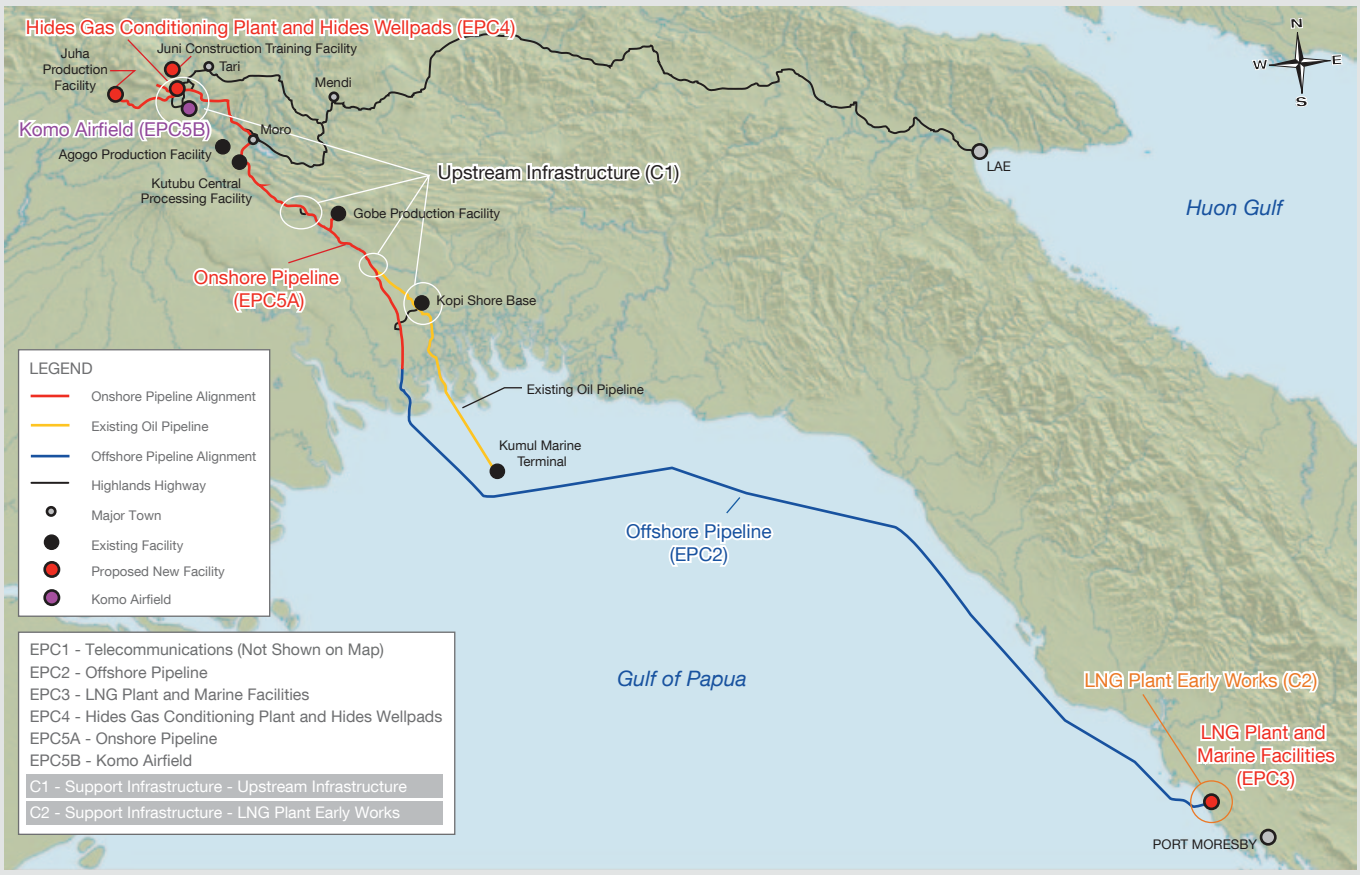


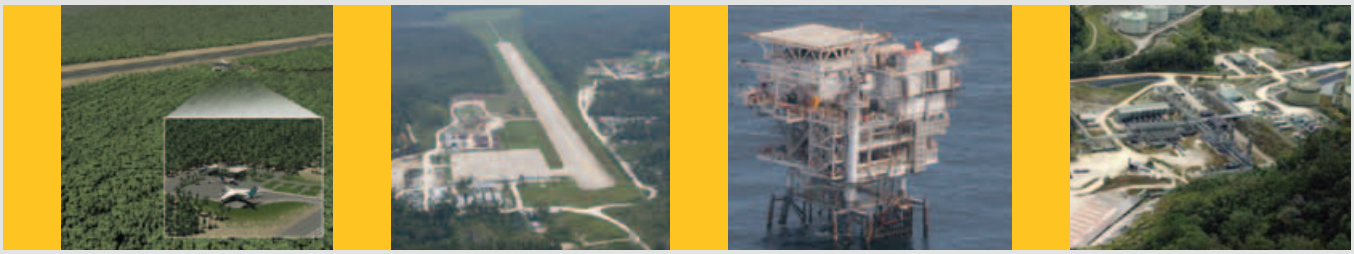
Plate 1.1 – Completed LNG jetty trestle

Figure 1.1 – Project elements



Kopi Shore Base | LNG Plant | Juha Production Facility | Gobe Production Facility

Juni Construction Training Facility | Offshore Pipeline Install | HGCP Site | Agogo Production Facility



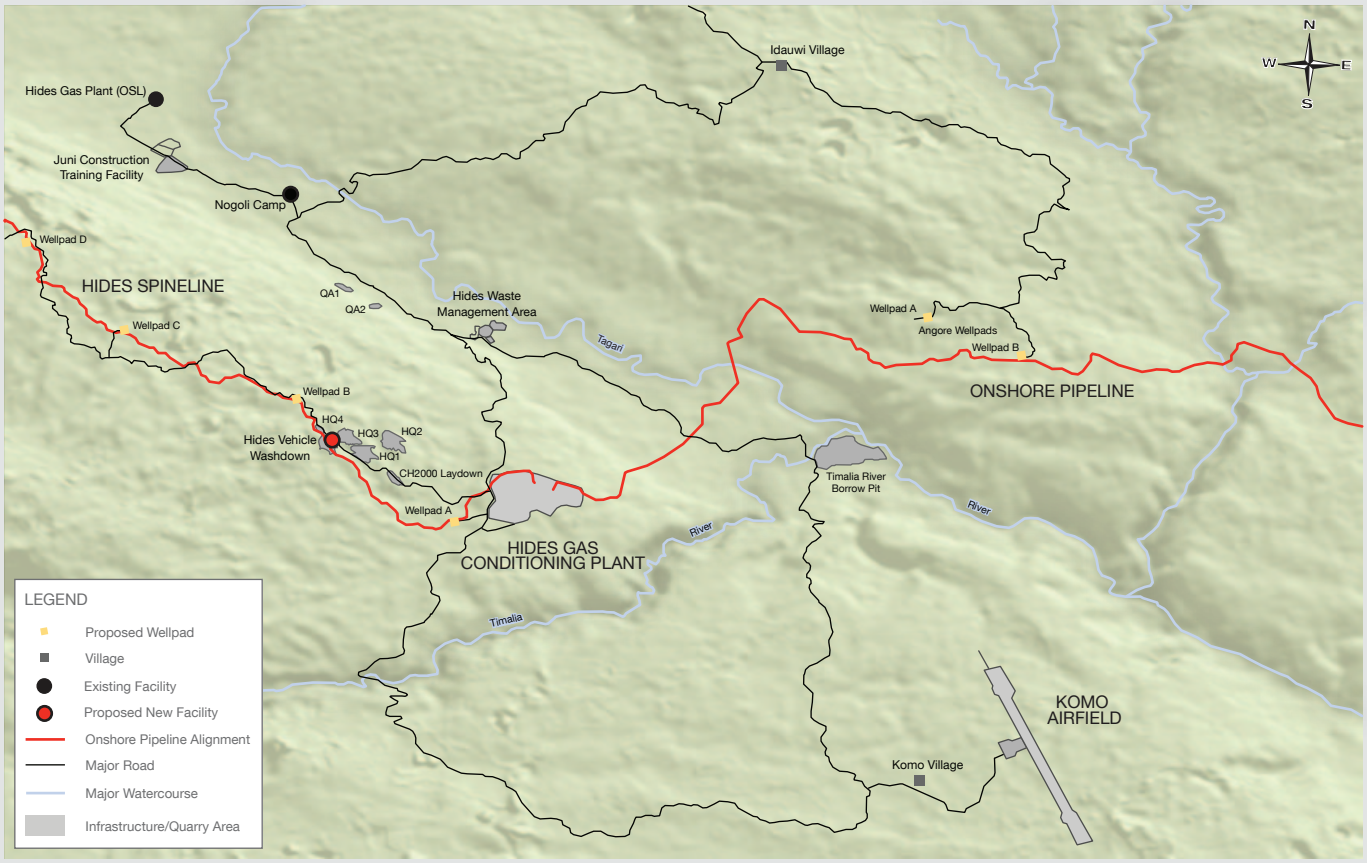
Komo Airfield | Moro Airfield | Kumul Marine Terminal | Kutubu Central Processing Facility

2 Construction Overview

Project construction is progressing well with a number of key construction milestones achieved this quarter. Milestones of particular note were: completion of the offshore pipeline installation including the above water tie-in that connects both the shallow water and deep-water sections of the pipeline; completion of both LNG tank outer shells and installation of the LNG tank roofs; and over 80 percent completion of the set-up of Drilling Rig 702 on Wellpad B. In addition, installation of the offshore fiber optic communications cable commenced in the Omati River.

2.1 Highlands area

Figure 2.1 – Highlands area Project activities



2.1.1 Upstream Infrastructure

This quarter, the Upstream Infrastructure contractor completed 14 out of 22 kilometres of the Wellpad Access Road. Installation of a second washdown facility on the Wellpad Access Road was also completed. The process area of the Hides Gas Conditioning Plant (HGCP) was also completed and handed over to the Hides Gas Conditioning Plant and Hides Wellpads contractor.

During April, Wellpad B construction was completed and handed over to the Drilling contractor, and Wellpad C bulk earthworks were completed. Installation of drilling cellars commenced on Wellpad C, and earthworks began on the produced water injection wellpad, which will be the Project's third drilling location.

2.1.2 Hides Gas Conditioning Plant and Hides Wellpads

At the HGCP construction site, installation of site perimeter security fencing commenced, while piling in the process area continued. Concrete pouring for the equipment foundations began in the utility area of the plant and structural steel and underground piping installation commenced. Camp expansion also progressed with the addition of more than 50 beds and the early commissioning of the camp's wastewater treatment plant.

2.1.3 Komo Airfield

The Komo Airfield contractor progressed bulk earthworks with more than 800 metres of runway length at the final elevation by the end of this quarter. In addition, 75 percent of the steel erection for the support facilities was completed, as were footings for the airfield fuel storage tanks and lighting towers.

Meanwhile, navigation aids, ground to air communications equipment and airfield lighting equipment arrived in Papua New Guinea.

2.1.4 Drilling

The set-up of the first drilling rig on Wellpad B marked a significant milestone this quarter. Set-up of Drilling Rig 702 began in May and was over 80 percent complete by the end of the quarter. At the same time, Drilling Rig 703 started its 800-kilometre journey along the Highlands Highway to the Hides area.

Plate 2.1 – Drilling Rig 702 set-up at Wellpad B

2.2 Onshore Pipeline

The Onshore Pipeline contractor finished welding on more than 170 kilometres of the 292-kilometre gas pipeline. Almost 180 kilometres of the pipeline Right of Way (ROW) was also cleared and graded, with 159 kilometres backfilled. In addition, 90 kilometres of pipeline hydrostatic testing and drying was undertaken.

The third and largest of four horizontal directional drilling operations was also completed this quarter under the Mubi River.

Meanwhile, geotechnical study borehole drilling was finalized at the Kutubu Central Processing Facility gas metering station. Associated gas volumes and quality will be metered at this station prior to being transported by pipeline to the LNG Plant. With vegetation clearance for the associated gas spurline from the Kutubu Central Processing Facility now completed, ROW preparation will soon commence.

2.3 Offshore Pipeline

A major Project milestone was achieved with the 407-kilometre offshore pipeline now installed. This achievement included the installation of both the shallow water and deep-water sections of the offshore pipeline and completion of above water tie-in to connect the two sections. The Offshore Pipeline contractor also achieved a significant safety milestone, with over 33,000 pipe joints transported from Malaysia to Papua New Guinea without incident.

Plate 2.2 – Pipelay barge laying the shallow water section of the offshore pipeline

The installation of the subsea fiber optic communications cable progressed, with the Omati River shore pull complete and over 60 kilometres of cable laid in the shallow waters in the Omati River area. Once complete, the fiber optic cable will extend from the HGCP site to the LNG plant site. The installation and operation of the cable is the result of a collaboration between the Project, the Independent Public Business Corporation of Papua New Guinea, the Southern Highlands Provincial Government and Oil Search Limited. It is a shared facility that will provide operational communications between the HGCP and LNG sites and will also be used by the other three parties to improve communications at various locations between the Southern Highlands and Port Moresby.

2.4 LNG Plant and Marine Facilities

This quarter marked two milestones for the LNG Plant and Marine Facilities contractor with the completion of the outer shells and roof installation for the two LNG tanks; and the completion of the 2.4-kilometre jetty trestle installation. The jetty trestle was installed using a cantilever bridge structure that proved to be highly effective in minimizing the Project's environmental footprint. The pipe rack modules are being placed on the jetty and welding is underway.

Plate 2.3 – Roof of the north LNG tank being air raised

Plate 2.4 – Piperack modules in place on the jetty trestle

Heavy lifts for Train 1 were completed and heavy lift cranes began lifting equipment on Train 2. All Train 1 air-fin fan coolers were installed and instrument cable pulling commenced. Pipe installation and steel erection on Train 2 continues. In the utilities area, seven power generation local electric rooms and three main utility substations were installed on their foundations. Meanwhile, construction of the cryogenic inner shell of the northern LNG tank is in progress, and ten of the thirteen miscellaneous tanks have been erected.

2.5 Associated Gas Development

During this quarter, the Associated Gas Development contractor started construction at the Gobe Production Facility. A new triethylene glycol unit is required for the Facility, so civil works began with the excavation and removal of existing underground lines and the installation of equipment footing.

Construction activities at the Kutubu Central Processing Facility included the completion of commissioning and performance testing of the triethylene glycol unit and associated gas cooler. The thermal oxidizer is nearing completion, while the condensate storage tank foam and deluge system is progressing well.

Plate 2.5 – Commissioned triethylene glycol unit at the Kutubu Central Processing Facility

At the Kumul Marine Terminal, the platform accommodation has now been refurbished and two new platform generators commissioned and installed.

Plate 2.6 – Kumul Marine Terminal platform during refurbishment

2.6 Development support execution, logistics and aviation

Transport from Lae to Hides along the Highlands Highway is progressing well, although one minor delay occurred in June in connection with the Papua New Guinea 2012 National Election. Ongoing repairs to the Highway, as well as bridge and culvert surveys continue. In Lae, a new driving simulator was procured and is being used for driver training.

2.7 Pre-construction surveys

Pre-construction surveys were completed this quarter for supporting infrastructure on the onshore pipeline. This included quarries, laydown areas, camps and access roads as well as Hides Ridge phase two ground truthing surveys for the wellpads and associated access roads. The Komo Airfield contractor also conducted a pre-construction survey for the truck turning facility located near the Komo-Hides junction of the road to Nogoli. Pre-construction surveys in progress this quarter are illustrated in Figure 2.2.

The only pre-construction survey remaining is on the Hides Spineline.

Figure 2.2 – Pre-construction survey progress

1	Protected Areas	✎	Report in Preparation
2	Protected Species	➔	Issued to DEC
3	High-Conservation Value Habitat	✖	No longer going to be used
4	Sites or Habitats of Ecological Significance	☑	Approved by Project
5	Cultural Heritage Sensitivity	➲	DEC Permission to Construct (as required)
6	Social Sensitivity		

Survey Site	Sensitivities Surveyed						Status
	1	2	3	4	5	6	
ONSHORE PIPELINE FACILITIES							
Moro Campsite and Kamari Quarry	✓			✓	✓		➔
Moro Camp 5 Additional Platforms				✓	✓		✎
Onshore Pipeline ROW: Kilometre Point 0 - 9.5				✓	✓		✎
Onshore Pipeline ROW: Kilometre Point 50.5 - 65.5		✓		✓	✓		☑
Onshore Pipeline ROW: Re-alignment Kilometre Point 65 - 67		✓		✓	✓		✎
Onshore Pipeline ROW: Re-alignment Kilometre Point 106.5 - 109 (Soro Fault), Kilometre Point 99.5 - 101.5 and Kutubu Spurline		✓		✓	✓		☑
Onshore Pipeline ROW: Re-alignment Kilometre Point 120.5 - 125.5, Kilometre Point 127 - 128.7 and Kilometre Point 146 - 147.5		✓		✓	✓		☑
Kilometre Point 172 Access Road and Kilometre Point 158.5 Borrow Pit		✓			✓		➔
Kilometre Point 192 Access Road, Valve Station and Vent Stack		✓		✓	✓		➔
Sumata Quarry: Kilometre Point 133.5					✓		☑
Pinnacle Quarry: Near Kilometre Point 118+900				✓			☑
Tugibu Quarry: Kilometre Point 87	✓	✓		✓	✓		☑
Kilometre Point 76 Quarry				✓			☑
Homa/Paua Laydown and Quarry		✓		✓	✓		✎
Homa Quarry 2				✓	✓		✎
Auwitangi Quarry 1 and Quarry 2 and Associated Access Road		✓		✓	✓		✎
Homa Alternative Campsite/Laydown area		✓			✓		✎
Kilometre Point 4.5 Campsite		✓		✓			➔
Kilometre Point 24 Campsite		✓		✓	✓		➔
Cathodic Protecton 1 and Associated Infrastructure		✓		✓	✓		✎
Cathodic Protecton 2 and Associated Infrastructure		✓		✓	✓		➔
Kutubu Mainline Valve Station and Associated Facilities		✓					✎
Benaria Mainline Valve Station 1 and Quarry		✓			✓		✎
Mainline Valve Station 2 (Kilometre Point 57) and 3 (Kilometre Point 66) and Additional Workspace		✓		✓	✓		✎
Mubi River Horizontal Directional Drilling Platform		✓		✓	✓		➔
Shoo-fly Access Road at Kilometre Point 137				✓			✎
Pipe Laydown Areas: Kilometre Point 104+200, Kilometre Point 109+500 and Shoo-fly Access Road to Kilometre Point 104+200		✓		✓			☑
Access Road at Kilometre Point 91.5 (near Kaimari Quarry)	✓			✓			☑
Kilometre Point 80 Access Road		✓		✓			☑
Shoo-fly Access Road to Kilometre Point 116+800 and Kilometre Point 96+700				✓			☑
Shoo-fly Access Road to Kilometre Point 107.5, Kilometre Point 101.8 and Kilometre Point 100		✓		✓			☑
Neango to Dauli Access Road at Kilometre Point 18		✓		✓	✓		✎
Angore Roads and Angore Wellpads		✓		✓	✓		✎
Homa Ridge Access Road		✓		✓			✎
Access Road to Positive Side of Tagari River Crossing				✓	✓		✎
Jaia Creek Laydown Area	✓			✓			☑
Hegero Campsite		✓					✎
Tubage Bush Camp Extension	✓			✓			✎
HIDES WELLPADS AND ACCESS ROAD							
Hides Wellpads B to Wellpad G and Access Road (Phase 2)		✓		✓	✓		➔
KOMO AIRFIELD							
Truck Turning Facility (Komo-Hides Junction)					✓		☑

Environment Permit sensitivity definitions:

1 - Protected Areas
Recognised or pending protected areas which include but are not limited to wildlife management areas, conservation areas, Ramsar sites, provincial reserves, national reserves, sanctuaries and protected areas, and national parks.

2 - Protected Species
Any species protected under Papua New Guinea legislation or listed in Convention on the International Trade in Endangered Species appendices, or in the International Conservation Union (IUCN) Red Data Book as Critically Endangered, Endangered Vulnerable or Data Deficient.

3 - High-Conservation Value Habitat
Any habitat identified within the high-conservation value Forest Toolkit as being within categories high-conservation value 1-5.

4 - Sites or Habitats of Ecological Significance
Sites or habitats of ecological significance such as:
a) Caves with a large entrance which may be used by bat colonies.
b) Pinnacles containing bat colonies.
c) Birds-of-paradise or bower bird display trees or display grounds.
d) *Pandanus* swamp forest.
e) Antarctic Beech *Nothofagus* spp. forest.
f) Areas of Antarctic Beech *Nothofagus* spp. dieback.
g) *Pharotis imogene* (New Guinea big-eared bat) colonies.
h) Sandalwood *Santalum macgregorii* trees.
i) High-value conservation swamps containing juvenile fish nursery habitat.
j) Swamps in sink holes < 50 m deep on Hides Ridge.
k) Areas of infestations of priority weeds or pests.
m) Mangrove stands and forest.
n) Seagrass beds.
o) Coral reefs.

5 - Cultural Heritage Sensitivity
Any site in which any cultural property as described in s. 20(1) of the National Cultural Property (Preservation) Act has been located.

6 - Social Sensitivity
Issues include, but are not limited to:
a) Impact on previously undisturbed sites of cultural heritage.
b) Significant and unpredicted loss of resources that affects livelihoods.

3 Safety, Security, Health, Environment and Social Management

Protecting the health and safety of Project workers and local communities, as well as the environment, is a core value for the Project.

3.1 Approach

The Project's commitment and approach to social management and environmental activities is outlined in the Environmental and Social Management Plan (ESMP), which is supported by discipline-specific plans as shown in Figure 3.1. Developed from the Project's Environmental Impact Statement, these plans are publicly available on the Project website.

Explore the plans at
www.pnglng.com/commitment

In addition to ESMP-related plans, the Project has management plans for Security, Health and Safety, as well as a Regulatory Compliance Plan.

All of these documents promote a best practice culture across the Project and demonstrate ExxonMobil's commitment to sustainable economic growth in Papua New Guinea.

3.2 Security

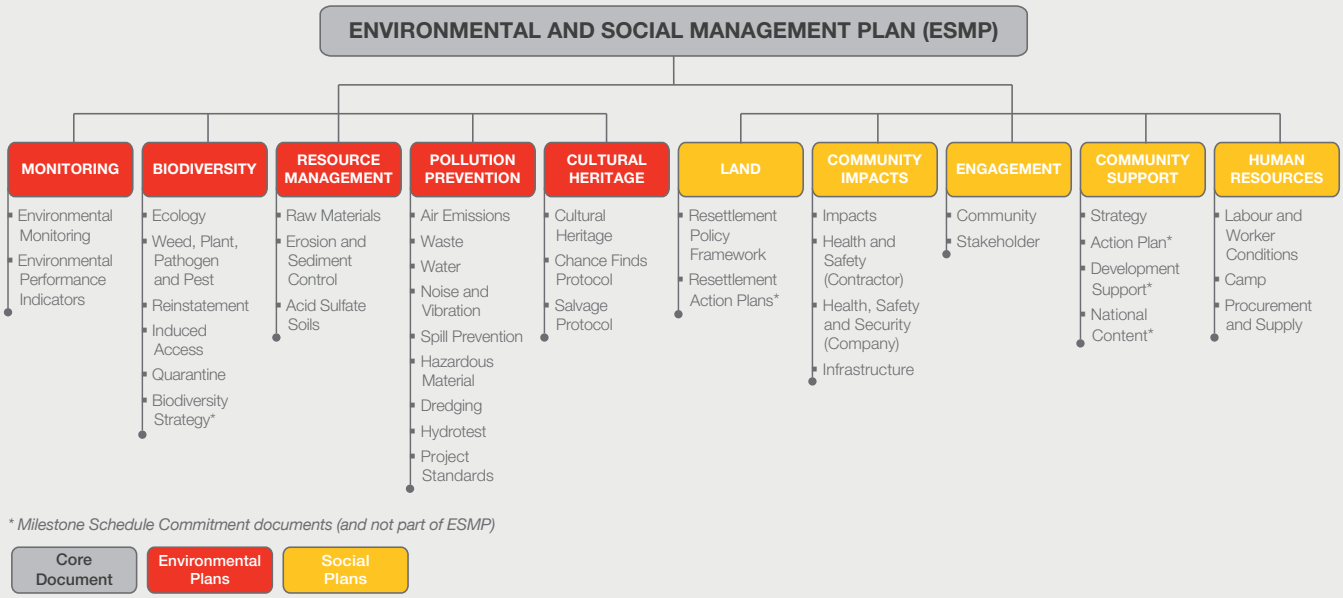
As part of the Project's ongoing commitment to provide opportunities for Papua New Guinean workers, three regular employee positions with Esso Highlands Limited were offered to Papua New Guinean security staff contractors during this quarter.

An Operations Centre was established in Hides to help coordinate security and journey management in the northern Project areas. Papua New Guinean workers at the Hides facility are applying administrative and technical skills based on experience gained at the Operations Centre in Port Moresby.

In response to increased community tensions in the Hides, Komo and Highlands Highway areas this quarter, in the lead-up to the 2012 National Election, the Government deployed Papua New Guinean Defence Force units to support the Royal Papua New Guinea Constabulary in maintaining law and order. The forces remained on post to support the Police in maintaining law and order during the election period.

The Project's Security team encouraged the Royal Papua New Guinea Constabulary to conduct refresher training in Human Rights for Police and Defence Force units operating in the vicinity of Project work areas. Training for Police commenced during this quarter.

Figure 3.1 – Environmental and Social Management Plans



3.3 Revenue management

The Papua New Guinean Government is establishing a stabilization fund and a development fund under the *Organic Law on the Sovereign Wealth Fund Law* that was passed by the Papua New Guinean Parliament in February 2012. Revenues from the Project will be allocated to the development fund, which will provide funding for social and economic initiatives. The stabilization fund is designed to help level out fluctuations in revenue income from resource projects. In June, the International Monetary Fund stated that the Sovereign Wealth Fund provided 'a strong framework for insulating public expenditure from volatility in resource revenue, and for improving transparency, accountability, and good governance.'

Representatives of government, civil society, and industry continue discussions on the implementation of the Extractive Industries Transparency Initiative – a global initiative that promotes transparency by monitoring resource companies' payments and government revenues at a country level. The Project is engaging with representatives from other resource companies through the Papua New Guinean Chamber of Mines and Petroleum to develop industry recommendations related to the Extractive Industries Transparency Initiative.

3.4 Management of Change

The Project's Management of Change procedure is implemented when changes to the Project Development Plan are required. Prior to any proposed change, the Project's requirements regarding health, safety, security, environmental and social management, as well as operability and maintenance, regulatory and cost, and scheduling requirements, are considered. Changes are classified in accordance with how they need to be managed. For example, Class I changes require Lender Group review prior to implementation, while Class II changes only require Lender Group notification in the PNG LNG Quarterly Environmental and Social Report.

During this quarter, no Class I or II Management of Change requests were raised.

3.5 Environmental and Social Milestone Schedule

The Project's Biodiversity Offset Delivery Plan is on course for delivery by December 2012, with stakeholder feedback fully integrated and the Biodiversity Working Group reviewing the Plan.

Work also continues in relation to the Project's Resettlement Action Plan commitments, with site-specific Resettlement Action Plans being developed as they are required.

4 Procurement and Supply

The Project aims to support Papua New Guinean suppliers and develop the capacity of Lancos through dedicated resources such as the Project's Business Development team and the Enterprise Centre.

4.1 Supplier development

Increased activities across Project worksites, along with Esso Highlands Limited's engagement of Lancos, has led to a Lanco spend of approximately 183 million Kina (US$88 million) this quarter. Goods and services supplied by Lancos include: road maintenance; provision of timber; plant and equipment hire; as well as some community development projects.

The total Project-related spend with Lancos to date has reached more than 1 billion Kina (US$480 million) reflecting the work of the Enterprise Centre and the Project's Business Development team in promoting local business participation in the Project.

Looking more broadly, total in-country Project-related spend on both Lanco and non-Lanco suppliers has reached almost 5 billion Kina (US$2.4 billion). Some of the materials and services provided by non-Lanco businesses include: office and residential accommodation; resources for the Papua New Guinea Institute of Medical Research (IMR); resources for the Papua New Guinea Institute of Banking and Business Management; hire of long-distance heavy haul trucks; charter of helicopters; charter of Airlines PNG aircraft; and plant and equipment hire.

This quarter, the Komo Airfield contractor engaged Lancos in the Community Goodwill Initiative: Community Center and Water Catchment Project, which aims to improve the quality of drinking water for Project-impacted communities in the Komo area. Lancos provided a range of services including the supply of sawn timber, hardware and plumbing materials; carpentry, and truck hire. To date, seven different Lancos and landowners have received more than 380,000 Kina (US$184,000) for the construction of 17 rainwater catchments. A further seven projects are planned.

Plate 4.1 – Community Center and Water Catchment Project in Komo

Meanwhile, four Lancos from the LNG plant site villages have formed a profit-sharing partnership with the long-standing local retail and wholesale company, RH Trading Limited, to operate three commissaries at the LNG plant site. The four Lancos are supplying labor while RH Trading Limited oversees administration and management of the commissaries. The commissaries opened in April, selling items such as confectionary, snacks, toiletries and other groceries to LNG plant site workers who previously had to travel to Port Moresby for such items.

Plate 4.2 – LNG Plant and Marine Facilities contractor and Esso Highlands Limited management with Lancos and RH Trading Limited representatives at the Camp A commissary

4.2 Enterprise Centre

The Enterprise Centre continues playing an important role in delivering training and advisory services to Lancos, and facilitating workshops and seminars for Project contractors and suppliers.

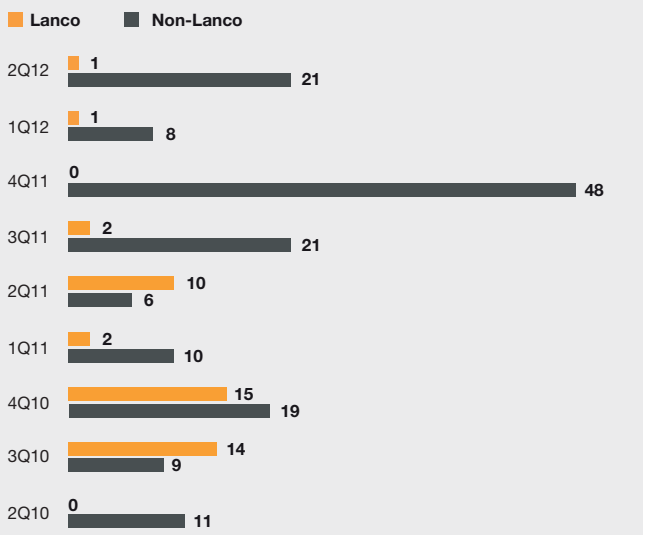
4.2.1 Business assessments and training

This quarter, the Enterprise Centre conducted its 200th business assessment report since assessments began in 2010. Business assessments continue to be popular with local businesses wishing to identify areas and ways in which they can improve.

Plate 4.3 – Presentation of the 200th business assessment report to Old Foot Print Media Services Limited

During this quarter, the Enterprise Centre completed 22 assessments, finalized 12 assessment reports and made 15 report presentations to Papua New Guinean companies. The assessments encompassed a wide range of industries covering general trading through to media, publishing, electrical, engineering, construction, pharmaceutical, travel, spices, and forestry activities and industries. Figure 4.1 shows the number of Lancos and non-Lancos assessed.

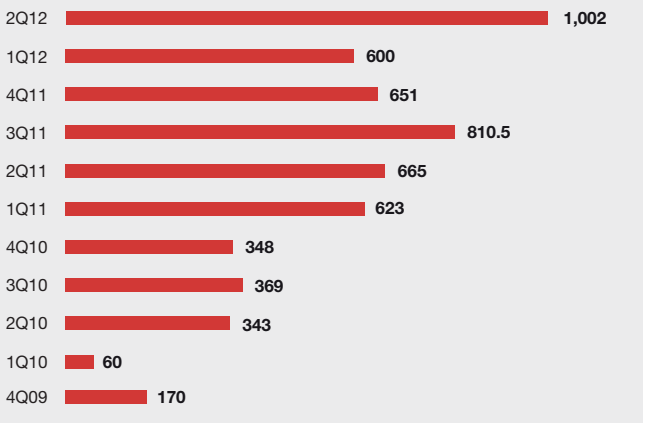
Figure 4.1 – Number of Enterprise Centre assessments for Lancos and non-Lancos



The Enterprise Centre also increased its focus on companies in which Papua New Guineans hold a majority shareholding. This aligns with the Project's aim to develop sustainable Papua New Guinean businesses.

The Centre continues its strong emphasis on training, achieving 1,002 training days this quarter. This is a 67 percent increase over the previous quarter, as shown in Figure 4.2.

Figure 4.2 – Number of capacity building training days



NOTE: The Papua New Guinea Institute of Banking and Business Management provided training prior to the Enterprise Centre's opening in April 2010.

Training for women dominated training activities this quarter, with 235 participants from the Porebada Women's Association, 88 participants from the Gobe Women's Association and three women who were part of a group of 19 training participants from the Omati area. All groups completed both the Business Basics and Directors' training courses, which provide an understanding of the basics of small business.

Half-day workshop on Business Assessment Criteria

During this quarter, the Business Assessment team conducted the Enterprise Centre's first Business Assessment Criteria workshop to help company managers and directors understand the Centre's assessment criteria. Representatives of 38 Papua New Guinean companies attended the half-day workshop, which included discussions on the benefits of being assessed and how to implement recommended business improvement plans.

4.2.2 Advisory services

Approximately 140 hours of advisory and mentoring services were provided to 39 individuals and groups during this quarter. Lancos from Porebada Village, Boera Village, Hides, Kutubu and various parts of the Hela Province spent time with Enterprise Centre advisors discussing business plans and proposals, as well as on their training requirements.

Porebada Ahine Limited, a registered women's business group from Porebada Village, continues benefiting from Enterprise Centre assistance. The group was recently contracted to provide mending and alteration services at the LNG plant site in addition to a mobile tea, coffee, scone and cake service it already provides. The Centre is also helping the women draft a company business plan.

4.2.3 Enterprise Centre communication and events

The Enterprise Centre assisted almost 900 potential and active entrepreneurs this quarter by providing access to workstations, business information and registration on the PNG Supplier Database as well as meetings, workshops and advisory services. The Centre also provided meeting rooms and facilities for Esso Highlands Limited's cultural awareness training sessions and for workforce development program needs as required.

During May, the Enterprise Centre held its Annual Road Show in Lae, Mt. Hagen, Kokopo and Madang and engaged with 50 individuals and businesses in total. This year, the road show focused on Papua New Guinean businesses located in these major centers, explaining how companies based outside of the Project impact area can participate in Project-related business opportunities. The Enterprise Centre also provided an update on the Project's progress, outlined potential opportunities for Papua New Guinean companies and highlighted how the Enterprise Centre assists Lancos and other Papua New Guinean companies.

Plate 4.4 – Participants of the Enterprise Centre's Annual Road Show in Lae

4.2.4 PNG Supplier Database management

To date, 1,365 businesses and Lancos have registered on the PNG Supplier Database. Forty-one new companies registered on the database compared with 29 for the previous quarter. Most companies registered on the database belong to the construction and engineering industries, followed by logistics (including transport), catering, communication, and office and accommodation suppliers. In addition, 2,757 people visited the PNG Supplier Database dashboard online during this quarter.

5 Communities

The Project continues working closely with communities on community health, safety and local business initiatives, to understand their perspectives on the potential impacts of construction activities.

5.1 Structure and relations

The Project's community interactions and potential impacts from construction activities are addressed in a set of community impacts and engagement management plans, as outlined in Figure 3.1.

5.1.1 Community grievance management

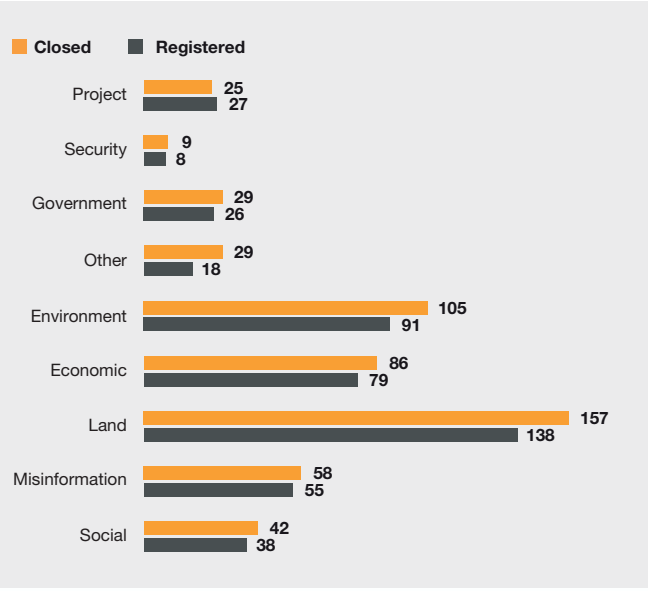
Effective grievance management relies on transparent processes, open communication and a commitment to developing relationships with communities within the Project impact area.

During this quarter, the Project registered and categorized 100 grievances, which was a 23 percent decrease compared to the previous quarter.

The decrease in grievances may be attributed to factors such as two major construction contractors completing their work and the near completion of land access activities.

As shown in Figure 5.1, in the past 12 months, 480 grievances were registered with the Project, and 540 grievances (raised either in the past 12 months or earlier) were closed by the end of this quarter.

Figure 5.1 – Number of grievances by category during the last 12 months



Field officers received training on a new electronic version of the grievance card as well as grievance investigation and the importance of recording and effective close-out procedures. Meanwhile, the Project continues refining the grievance card based on feedback received from field officers.

Of the grievances registered during this quarter, 28 percent related to land access, land agreements or compensation. Another 18 percent related to the environment, particularly around requests for water structures and concerns about perceived Project impacts on water sources. A further 15 percent were economic grievances, primarily regarding the desire for employment, the awarding of contracts for services, or requests for community development projects. Seven percent of grievances related to social matters, including resettlement and demobilization concerns. Grievances related to dust and traffic congestion were also received.

During this quarter the water taskforce constructed an additional 14 water structures, bringing the total number of water structures built for communities in the Hides and Komo areas to 61.

Plate 5.1 – Grievance closure at Wangopa Village in Angore

Meeting the Project's 30-day grievance closure target remains a challenge; considering that some grievances, such as those related to compensation, involve significant investigation and assessment. In addition, gaining confirmation from grievants in writing that they are satisfied with a resolution can be a time-consuming process. Despite these challenges, the Socioeconomic team closed-out a total of 160 grievances (registered this quarter and in previous quarters) by the end of June.

5.1.2 Project Induced In-Migration

During this quarter, the Hides-Komo and Kopi-Kikori Influx Management plans were finalized. They include a schedule of program activities such as in-migration surveys, stakeholder consultation meetings, capacity building and training workshops for target groups, and advocacy and awareness sessions with broader target audiences. The plans also describe how patterns of in-migration in the Project impact area will be monitored and evaluated.

Following engagements with the Hela Transitional Authority and the Central Provincial Government during the first quarter 2012, the Project met with the provincial administrations for the Gulf Province and Southern Highlands Province with the aim of working collaboratively with them to achieve positive development outcomes in areas impacted by in-migration.

A follow-up meeting with the Gulf Provincial Government is scheduled for the third quarter 2012.

Meanwhile, Kikori-based government agencies have implemented influx control measures including a five-year development plan and in-migration public awareness activities in concert with local community groups. In addition, the Kikori District Local Level Government has developed in-migration law and policy.

Also, Project Induced In-Migration officers at the LNG plant site developed an in-migration research plan for implementation in the third quarter 2012. This research reviews issues related to health, environment, biodiversity and settlement. It includes working collaboratively with village committees who will conduct a series of workshops and training sessions to engage stakeholders, assess communities' views on in-migration intervention measures and plan a way forward for the LNG plant site villages.

5.1.3 Fisheries surveys

The Fisheries team is working closely with the Enterprise Centre, the National Fisheries Authority and their partner organizations, the Barging Route Waterways Memorandum of Understanding Committee and the Kikori District Fisheries Office, on a feasibility study for a proposed fisheries income-generating program for villagers along the Omati and Kikori rivers. Quarterly surveys currently show 90 percent of fish caught in the Omati area are consumed by households in the area and fishers face significant challenges marketing their catches. The feasibility study will review previous efforts to set-up fisheries income generating projects and recommend a business model for the area.

Meanwhile, the Fisheries team has trained 13 local assistants from the four LNG plant site villages (Boera, Papa, Lea Lea and Porebada) who will replace this team and conduct fisheries surveys for two weeks every quarter in the Caution Bay area. The local team, which includes three women, will help to increase participation by local communities in fisheries surveys and provide access to additional fisheries data from their villages.

Surveys conducted in Caution Bay during this quarter found that 224 fishers interviewed caught a combined 1,076 kilograms of fish. The number of fishers has increased compared with the previous quarter but the landed catch volume remained relatively the same.

In the Omati area, fisheries surveys continued with the ten assistants from Bisi (A'abari), Mubagowo, A'idio, Goare and Dopima Villages. During this quarter, they interviewed 76 fishers and recorded 1,590 kilograms of fish caught by male fishers, while the catch for female fishers was 141 kilograms.

Recognizing the importance of mangrove ecosystems, this quarter the Project signed an agreement with the University of Papua New Guinea Marine Biology Department to provide mangrove plantings and training to 20 local assistants from Papa Village as part of a mangrove rehabilitation program.

As well as providing fish habitats and spawning grounds, mangroves are also key to preventing soil erosion in the coastal rural villages of Papua New Guinea. Fisheries surveys conducted since 2010 indicate that mangroves in these areas are declining because they are used by the community for house-posts and firewood, with little consideration for replanting. The mangrove rehabilitation program is teaching villagers how to plant the mangroves, and assessing the possibility of developing a mangrove nursery in Papa Village.

Plate 5.2 – Mangrove rehabilitation training at Papa Village

5.1.4 Social considerations for logistics activities

The Project continues supporting the Barging Route Waterways Memorandum of Understanding Committee by providing an opportunity for another 27 students to attend St. Joseph's Catholic Vocational School in Kikori where they will have access to study basic carpentry, mechanical and business training courses. This is in addition to two tertiary scholarships provided in the first quarter 2012.

Meanwhile, Barging Route Waterways Memorandum of Understanding Committee members received informal training in implementing and managing small community projects. The training covered chairing and taking minutes in monthly meetings, as well as identifying and implementing community projects. The Enterprise Centre supplemented this training through formal Business Basics training aimed at providing the skills and knowledge needed to develop business plans, source project funding and make informed business decisions.

Two water tank projects were also completed in Kivaumai and Kinomera during this quarter, following community agreements signed with the Omati and the Urama tribes earlier this year. Project teams provided construction materials and design support, while local community carpenters erected the water tanks. The Project is also working with conservation non-government organizations and Papua New Guinean Government authorities to develop sawmill projects that will enable tribal groups to maintain and repair school and health facilities.

5.2 Infrastructure, services and resources

Through the combined efforts of the Project and its contractors, a purpose-built elementary school building was constructed and opened in Hides this quarter. The Para Elementary School caters to children in pre-school, grade 1 and grade 2. For further information, refer to *Case Study One – New school opens opportunities for Hides children*.

The Project also donated cement, wheelbarrows and other earthmoving equipment to Mbelopa Elementary School in Hides where the community is rebuilding a classroom that burned down.

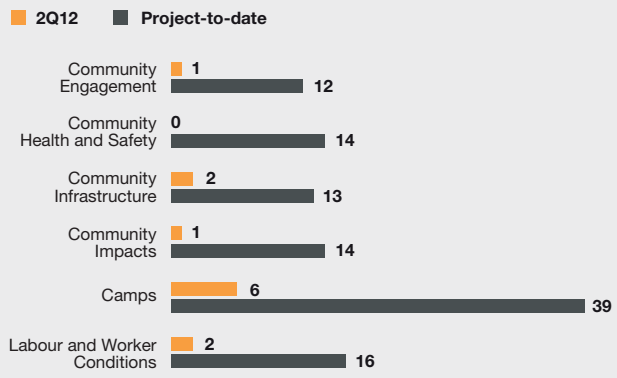
Meanwhile, a new banking facility, which will enable LNG plant site workers and local villagers to conduct their banking locally rather than traveling to Port Moresby is nearing completion at the LNG plant. It is the result of an agreement between Laba Holdings Limited and Bank South Pacific and is scheduled to open in the third quarter 2012 in the Laba office. In addition, an Australia and New Zealand Banking Group Limited (ANZ) automatic teller machine opened in April at Camp B of the LNG plant site.

5.3 Verification, monitoring, assessment and audit

The commitments in the six social management plans – Camp, Labour and Worker Conditions, Community Engagement, Community Health and Safety, Community Impacts, and Community Infrastructure continue being monitored. However, as construction activities approach completion in some areas, the need for monitoring of camps, labor and working conditions, and community relations will start reducing.

As shown in Figure 5.2, 12 monitoring events were conducted during this quarter.

Figure 5.2 – Number of monitoring events against relevant social management plans



The Project tracks conformance with the various social management plans through three reporting tools: non-conformances, field observations and positive field observations.

Non-conformances occur when situations are identified that are not consistent with Social Management Plan requirements and therefore require corrective actions. A field observation involves an observation, intervention and/or corrective action that is required to prevent a non-conformance. If not corrected in a timely manner, field observations can escalate to a non-conformance. Innovative or excellent performance against Social Management Plan requirements is recognized as a positive field observation.

There were two new non-conformances raised during this quarter. The first related to noise from a generator affecting camp personnel and the second to spoil areas created from large-scale excavations affecting water catchments used by the community. Meanwhile, 25 field observations were recorded, as shown in Figure 5.3. The closure status of these non-conformances and field observations is shown in Figure 5.4. Another five non-conformances raised at Komo during previous quarters were also closed during the quarter.

Figure 5.3 – Number of non-conformances and field observations raised during the second quarter

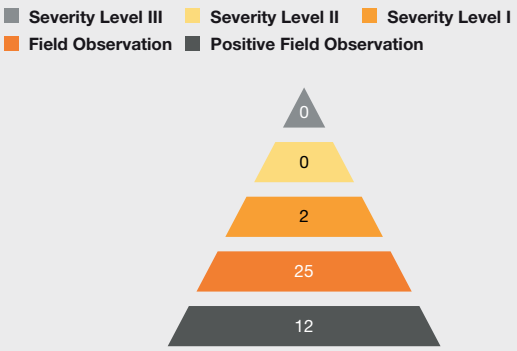
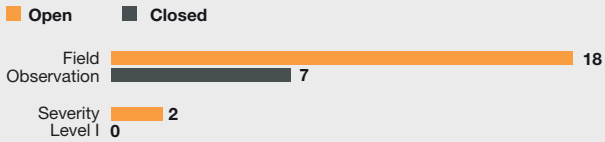


Figure 5.4 – Closure status of non-conformances and field observations raised during the second quarter



During this quarter, 12 positive field observations were also recorded. These related to a wide range of areas, including positive engagement with local communities, camp cleanliness and support provided to Lancos.

5.4 Community health

The Project's integrated Community Health Impact Management Program is based on a framework developed by the International Petroleum Industry Environmental Conservation Association (IPIECA) and the International Finance Corporation's guidance notes on Performance Standard No. 4 Community Health, Safety and Security.

By working with non-government organizations and Papua New Guinean health professionals, the Project aims to mitigate potential health impacts from its activities. It also identifies opportunities where it can support local communities by building sustainable health infrastructure and capacity.

5.4.1 Integrated Health and Demographic Surveillance System

As part of the 'Partnership for Health' agreement with the IMR, the Project is developing an Integrated Health and Demographic Surveillance System to collect population and household-level data. This data will help to assess health and social impacts in the Project impact area. Importantly, it will provide ongoing benefits to communities by creating an evidence base for future health investments in Papua New Guinea. It also provides a platform for capacity building for young scientists in the country.

By the end of this quarter, the IMR had completed demographic, socioeconomic and morbidity and mortality surveys in key Project areas including the four LNG plant site villages (Boera, Papa, Lea Lea and Porebada), the Hiri District, and the Hides and Komo areas. An initial household census and registration was also completed, covering more than 10,000 individuals across the four LNG plant site villages and another 10,000 individuals in Hides. In addition, household census/registration work is ongoing in two matched comparison sites in the Asaro Valley and at Karkar Island.

5.4.2 Tuberculosis

A GeneXpert® diagnostic machine was purchased through the 'Partnership for Health' for Kikori Hospital in the Gulf Province this quarter. This technology provides faster and more accurate tuberculosis testing than traditional methods, and will significantly enhance diagnostic efficiency and tuberculosis treatment and care in the Province. IMR staff based at Kikori Hospital will operate the GeneXpert machine. For further information, refer to *Case Study Two – Technology boost for tuberculosis care*.

In addition, the Project is establishing two office locations and three staff houses for IMR staff at Papa Health Clinic, Malanda Health Centre and Para Clinic. It is also helping procure a vehicle, medical equipment and materials for refurbishing office accommodation at the Kikori Hospital for use by IMR staff.

5.4.3 Support to non-government organizations

With support from the Project, non-government organization Population Services International (PSI) continues delivering a range of community health initiatives across the Project impact area including Marital Relationship Training, the Water, Sanitation and Hygiene (WASH) Program and campaigns aimed at preventing Sexually Transmitted Infections, including Human Immunodeficiency Virus (HIV).

The Water, Sanitation and Hygiene Program

The WASH Program remains a core community health focus area for PSI and for the Project. WASH Program activities involve a Community-Led Total Sanitation (CLTS) program, community-based interpersonal communication and WASH kit distribution.

By engaging the community as a whole, the CLTS aims to create a clean and hygienic environment that benefits everyone. For example, the program helps community members see the unhealthy consequences of open defecation and how to make appropriate changes. It also supports local innovations such as low-cost latrines made from locally available materials.

WASH kits a success

As part of the WASH Program, PSI has developed a WASH kit, which is being distributed to community members in the Project impact area. Each WASH kit contains a 20-litre bucket with tap, soap, water purification tablets, diarrheal treatment, oral rehydration solution, zinc tablets and interpersonal communication information and brochures.

So far, approximately 1,000 kits have been distributed in the villages of Papa and Porebada.

Lou Momoru from Papa Village said the WASH kits were important in reducing the incidence of disease and helping to make water safe to drink in her Village.

"There is no water supply from the city main system to this area. With the WASH kits, the community is able to disinfect and treat water from local sources (rain and nearby creeks)," she said.

Lou Momoru from Papa Village using her WASH kit

In April, the CLTS program was conducted at three villages in the Komo District. Also during this quarter, PSI conducted follow-up visits at six villages in the Komo area, finding that five pit latrines had been improved, that 39 new latrines had been built and an additional two were under construction.

There was also a noticeable improvement in community sanitation behaviors in the areas visited. This included the cessation of open defecation, washing of hands before handling food and after coming into contact with feces, and the safe disposal of animal waste.

Plate 5.3 – CLTS program community mapping

Safe Driver initiative

Another PSI-led initiative is '*Seif Draiva*' (Safe Driver), aimed at truck drivers along the Highlands Highway in support of the Papua New Guinean Governments' National HIV and Acquired Immune Deficiency Syndrome (AIDS) Strategic Plan.

PSI focuses on HIV prevention through targeting behavior change communication and marketing Seif Raida condoms and Stap Seif female condoms. During this quarter, 95 individuals took part in behavior change communication sessions consisting of reproductive health and gender-based violence training adapted from Marital Relationship Training. Following the sessions, truck drivers receive health care vouchers providing them and their partners access to the Susu Mamas and Marie Stopes Papua New Guinean clinics in Lae, Mount Hagen and Goroka, which offer '*Fit Man*' and '*Fit Meri*' services. This quarter a total of 521 vouchers were distributed.

National Infectious Disease Diagnostic and Research Laboratory

Construction of the National Infectious Disease Diagnostic and Research Laboratory, which was funded by Esso Highlands Limited, was completed this quarter. The Laboratory is located at the University of Papua New Guinea School of Medicine and Health Sciences in Port Moresby and will be fully operational by the fourth quarter 2012.

Managed by IMR in partnership with the University of Papua New Guinea School of Medicine and Health Science, the research conducted at this Laboratory will play an important role in identifying and responding to emerging tropical infectious diseases and provide a training location for Papua New Guinean health professionals and scientists.

5.5 Community safety

A temporary community market facility is being constructed in the Komo area. It will provide a safer location for people attending the market and improve access for road users until a more permanent market facility can be established. A local Lanco is managing construction of the temporary market place, with supervisory support from Komo Airfield carpenters.

Plate 5.4 – Ground preparation commences on the temporary market facility at Komo

Also during this quarter, 1,057 schoolchildren from the Hides and Komo areas were reminded to stop, look and think before crossing roads and to be vigilant in looking out for traffic, as part of a traffic and pedestrian safety awareness campaign. Juni Elementary School students embraced the campaign by appointing their own Safety Champions who volunteered to take care of other smaller children while they are traveling to and from school each day. The Socioeconomic team encouraged them to continue their good work by issuing high visibility vests to them. Messages on road and pedestrian safety were also distributed at markets and to pedestrians engaging in unsafe behaviors.

Meanwhile, traffic signs were installed on Project roads advising Project drivers and local pedestrians of adverse road conditions.

Efforts to restrict public access within the HGCP area, such as ongoing community education, improved gate control and installation of an anti-climb fence, have decreased the number of pedestrians traversing the site.

In the Moran and Gobe areas, the Onshore Pipeline contractor employed drama groups to reinforce key messages from the Project-wide Safety Awareness Program and help the community understand the impacts of increased road traffic around pipeline activities.

At the LNG plant site, the Socioeconomic team is communicating with communities about pre-commissioning activities, the timeline for the offshore pipeline and ways that people can continue accessing the area safely.

A drama group is helping convey key safety messages to the community in a fun but informative way.

Plate 5.5 a-b – The Safety Champions of Juni Elementary School

While construction site hazards are often easier to see on land, there are also hazards associated with fishers getting too close to Project subcontractors working in the marine environment of Caution Bay. The Project has established, and is monitoring, exclusion zones to help keep the community safe and the Project's drama group is helping communicate marine safety-specific messages to workers and their families. For example, performance topics have included staying safe around the jetty, safe areas for fishing and exclusion zones around Offshore Pipeline and LNG Plant and Marine Facilities contractor boats.

5.6 Community investment

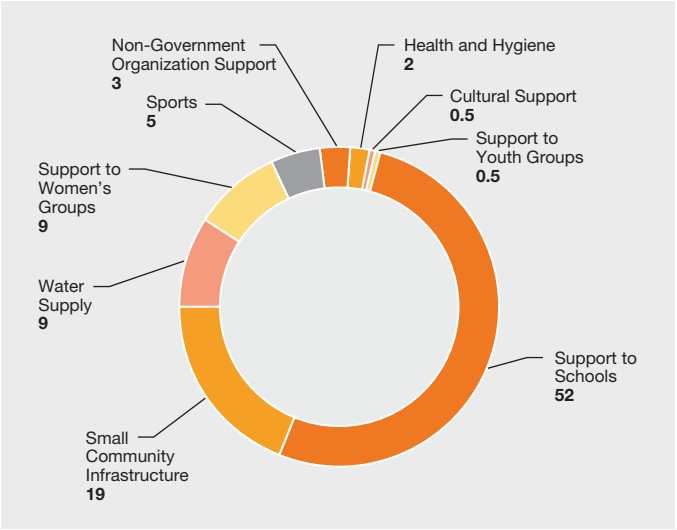
Identifying and working with local organizations and individuals who can lead the development of their communities underpins the Project's community investment approach. This quarter the Socioeconomic team continued building community development committees and expanding training programs for Papua New Guineans such as Personal Viability training and targeted training opportunities for women. At the same time, the Project is reviewing the impact of its Rapid Implementation Projects to see how these can be integrated within strategic community development programs.

Rapid Implementation Projects

Rapid Implementation Projects were introduced in 2010 as a way of fast-tracking small-scale projects (up to US$5,000) in the field. By the end of this quarter, 15 Rapid Implementation Projects were underway in Hides, Komo, the LNG plant site villages and along the Highlands Highway. To date, the Project has supported more than 100 small scale projects covering activities such as providing desks to schools, constructing '*haus wins*' to provide clean and fresh water, and providing support for women's groups.

As shown in Figure 5.5, more than half of the Rapid Implementation Projects conducted to date have focused on providing support to schools in the Project impact area.

Figure 5.5 – Percentage of Rapid Implementation Projects by type



5.6.1 Community Development Support Plan

The Project continues implementing its Community Development Support Plan through initiatives focused on Strengthening Social Resilience, supporting Local Economic Development and developing Community Capacity Building and Partnerships.

Strengthening Social Resilience

The Project's successful Personal Viability training program continued this quarter with six training sessions conducted in Hides, Angoro, Komo, Waro, Homa and Paua aimed at members of ward development committees and leaders of community institutions. More than 300 participants attended, including 130 women.

Personal Viability training empowers communities to drive their own development and helps individuals manage their changing lifestyles. To date, the Project has conducted 14 sessions with 146 participants in the Hides area; 181 in the Komo area; 40 in the Kutubu area; 80 in Moran and 117 in the LNG plant site area.

Participants report that the training has helped them better manage their time and money, foster better relationships and start their own micro income-generating projects. In addition, male participants have expressed a greater recognition of the value and importance of women in both family and community roles.

One unexpected outcome from training conducted in Komo, Homa, and Paua was that disputing villages were able to resolve conflicts and unite because their Personal Viability training sessions provided a forum for the villagers to come together and reconcile their differences.

Another initiative led by the Socioeconomic team is the Project's Support to Schools program. This quarter, four primary schools in the LNG plant site villages of Boera, Papa, Lea Lea and Porebada each received two cabinets filled with school reading materials. Water tanks were also provided to these and five other schools as part of the program.

Plate 5.6 – Newly installed water tanks at Boera Primary School

A well-structured and supported court system is essential for social order and resilience. Meetings were held this quarter with the Secretariat for Village Courts and Land Mediation in Port Moresby to consider the next steps following operational assessments compiled of 31 Village Courts in the Project area. The assessments are helping with the appointment and gazettal of Village Courts officials along the pipeline area and within the Southern Highlands, Gulf and Central Provinces. They also help to identify support services that need to be in place to enable the Village Courts to function effectively. The Project is engaging with the Secretariat for Village Courts and Land Mediation to finalize training and support plans for the 31 Village Courts during the third quarter 2012.

Local Economic Development

Following training they received from the Project in organizational assessments and planning, the Moran Women's Group has raised funds and purchased the materials required for the semi-permanent structures they need for small-scale poultry projects. Men from the local villages have helped build chicken houses in Paua, and a training and cooking house in Homa. In addition to starting their poultry business, members of the Moran Women's Group are taking the lead in organizing activities in their respective communities, including Personal Viability training.

Learning business development

This quarter, participants from the LNG plant site villages who had completed initial Personal Viability training had the opportunity to join an interactive real-life business development scenario. The scenario involved participants working together as a team to plan a micro-project, develop a customer base and reinvest capital and profits to multiply income. A total of 47 participants (23 female and 24 male) were given 10 Kina (around US$5) each to generate an income within four days. The group was able to generate a total 7,505 Kina (over US$3,600) from their initial capital of 470 Kina (nearly US$230), with some participants returning 1,600 percent on their original investment. Geua Ario from Papa Village said the scenario had taught women in her Village many skills that would help them into the future. "We now know and understand how it feels to be competitive. We also realize that money is at our doorsteps. The training has taught us good virtues of honesty and teamwork. We plan to use our skills to educate the women and communities," she said.

Participants in the Personal Viability training business development scenario

Also during this quarter, the new Lea Lea Fish Market was completed and is now ready for trading. The Project provided resources to repair and improve the original marketplace, which the Lea Lea Women's Group built from bush materials in late 2011. The women's group was also supported with training in the use and construction of baking drum ovens as a means of additional income generation.

With support from the Project, the Group is developing a business capacity building and training strategy for the market and other potential business ventures. The women plan to make their fish market a model for other communities to follow.

Plate 5.7 – A Personal Viability training banner being put up at the Homa training and cooking house

Community Capacity Building and Partnerships

Most Community Capacity Building and Partnerships initiatives in the LNG plant site area are coordinated through local community development committees. During this quarter, the Socioeconomic team worked with community development committees to formalize membership of their executive committees through a formal voting process to be implemented later in the year.

Meanwhile in Komo and Hides, 24 ward development committees received training in forming and operating community development committees, which will lead community development in these areas.

Targeted leadership training is also being conducted with clans, churches, women's groups and educational organizations along the pipeline ROW. This quarter the focus was on engaging key leaders from these organizations to participate in Personal Viability training.

5.6.2 Strategic community investments

This quarter the Project donated US$300,000 to the World Bank to help support at-risk youth through Papua New Guinea's Urban Youth Employment Program.

The Program provides pre-employment training and apprenticeships to youths in Papua New Guinea's National Capital District. Apprenticeships last up to six months, and are followed by job placements, which provide employers with the option of hiring the apprentices as long-term employees when they complete the Program. The Project has committed a total of US$900,000 to support this Program.

The Urban Youth Employment Program launched two new pilot projects in May that will provide employment to young people in infrastructure maintenance and roadside clean up in the National Capital District.

Plate 5.8 – Youths participating in the roadside clean up pilot project

Women's economic empowerment

The Project sponsored two Papua New Guinean women to attend a five-week Global Women in Management (GWIM) program in Washington DC during this quarter. The program is specifically designed to help women from developing countries improve their economic participation within their country.

Since 2009, 12 women from Papua New Guinea have attended the GWIM program in Washington DC with Project sponsorship, while five more are scheduled to attend the GWIM program in Indonesia later this year.

Women making a difference in Papua New Guinea

Two Papua New Guinean women are helping change the face of their country, with support from Esso Highlands Limited.

This quarter, Cathy Alex and Doris Pipi from the Southern Highlands Province were sponsored by the Project to join women from 20 other countries at the GWIM program in Washington DC.

Pedro Martinez, Systems Completions Manager, Esso Highlands Limited with Doris Pipi and Cathy Alex

Women making a difference in Papua New Guinea (*cont.*)

Cathy works in Project Management at the Community Development Initiative Foundation and is involved in researching and supporting gender-focused activities. Doris is a Sociology major who works for one of the Project's co-venturers as a Community Development Coordinator with women.

Cathy and Doris took advantage of the opportunity to network with other like-minded women and strengthen their skills in areas such as project and financial management, proposal writing, leadership and advocacy.

The GWIM program is supported by Esso Highlands Limited as part of ExxonMobil's Women's Economic Opportunity Initiative. Participants of the GWIM conference are mid-career women from civil society organizations around the world.

"I still don't know what words to use to share with you how I feel. Papua New Guinea is a land of opportunities, and I come from a province where there are many things that we women can be involved in, to benefit ourselves and our families. And to be given this chance to go and learn, I don't know what to say. I am too excited," Doris said.

ExxonMobil Women's Economic Opportunity Initiative is a global effort launched in 2005 that helps women fulfill their economic potential and drive economic and social change in their communities. Since 2005, ExxonMobil has invested more than US$53 million into this initiative, helping community-based and global partners implement programs that are directly benefitting thousands of women around the world.

Plate 5.9 a-b – Volunteers participating in the Walk Against Corruption

5.6.3 Volunteer programs

In late May, the Project participated in the Sir Anthony Siaguru Walk Against Corruption – Transparency International Papua New Guinea's major fundraising and awareness event. Nearly 200 Esso Highlands Limited employees, including Managing Director Peter Graham, took part in addition to students from Don Bosco Technical College in Port Moresby.

Meanwhile, 19 Esso Highlands Limited employees and their families volunteered their time this quarter at a nature park in Port Moresby helping with renovations such as developing a rainforest walk that includes a cassowary viewing area. Following the renovations, the park, formerly known as the National Capital Botanical Gardens, was re-launched on June 16 as the Port Moresby Nature Park.

The Park is the only one in the world housing all three species of cassowary, each of which has a recognized conservation status by the International Union for the Conservation of Nature. The Park provides separate rainforest enclosures for each species so they can be viewed in their natural habitats.

Plate 5.10 – Esso Highlands Limited employees painting a rainforest walk at the Port Moresby Nature Park

CASE STUDY ONE

New school opens opportunities for Hides children

Children in Hides are enjoying a new purpose-built elementary school thanks to the teamwork of the Project's construction contractors and the local Catholic Church.

The Para Elementary School was officially opened in June with prayers and a blessing by the Catholic Church and the Evangelical Church of Papua New Guinea. The new school building is located within Catholic Church grounds and comprises three classrooms for pre-school children and grades 1 and 2, an office and water tanks to provide drinking water for the children and teachers.

The project to build the new school began when one of Esso Highlands Limited's representatives visited the old school building and saw children sitting under umbrellas to keep dry from the rain while attending class.

Project representatives attending the official opening of Para Elementary School by Father John of the Komo Catholic Mission

The School's construction was a combined effort between Project teams working in the Hides area. Esso Highlands Limited provided building materials and labor, while the Hides Gas Conditioning Plant and Hides Wellpads contractor donated concrete and labor to construct the school's foundation. Another Esso Highlands Limited contractor, C&H Laitepo Limited, leveled the ground, donated aggregate and assisted with civil works. Meanwhile, the Esso Highlands Limited's Development Support team provided technical support, donated materials, built school desks and installed the school's water tanks.

Jim Smith, Upstream Area Construction Manager, Esso Highlands Limited said the Project's teams were proud to be part of such an important initiative. "We did this for the kids and because it's the right thing to do," said Jim.

Students of Para Elementary School seated at their new desks

Newly installed water tanks at the school

CASE STUDY TWO

Technology boost for tuberculosis care

The Project is helping improve tuberculosis diagnosis and treatment in Papua New Guinea by providing new, state-of-the-art medical technology to three district hospitals in Kikori, Madang and Port Moresby.

Treating tuberculosis has traditionally been made more difficult due to the length of time required to achieve a firm diagnosis. Processes such as smear staining and culture generation require between two and eight weeks per diagnosis. As a result, many patients have been placed on antibiotics without the illness being confirmed, while others have delayed treatment to their detriment.

GeneXpert® technology is faster and more accurate than any other method currently available in Papua New Guinea, providing same-day results with 99 percent accuracy. It works by analyzing sputum samples taken from patients for tuberculosis bacilli, as well as genetic markers that may indicate any resistance to tuberculosis treatment.

The key benefit the technology brings is early intervention in tuberculosis cases, reducing the risk of people becoming newly infected with the illness. It also enables higher quality treatment and care for those with confirmed tuberculosis.

However, at approximately US$60,000 for each machine alone, a significant investment is required.

Through its 'Partnership for Health' agreement the Project is providing three machines which will be operated by specialist microscopists from the IMR.

At Kikori Hospital, the first recipient, the GeneXpert machine is already scanning approximately 200 samples for suspected tuberculosis every month.

The two additional machines destined for the IMR laboratories at Modilon Hospital and the University of Papua New Guinea School of Medicine and Health Sciences will become available later this year.

"The GeneXpert machine has been very beneficial as it shortens the time to diagnosis and is more accurate than previous methods. This means that an individual can get tested, if necessary get on treatment and return to work in the same day," said Suparat Phuanukoonnon, Integrated Health and Demographic Surveillance System Project Coordinator for the IMR.

Specimen preparation and diagnosis using the GeneXpert tuberculosis diagnostic machine

6 Compensation and Resettlement

The Project closely monitors livelihood restoration activities with the aim of giving physically and economically displaced people the opportunity to, at a minimum, restore their livelihoods and standards of living.

6.1 Compensation

The Socioeconomic team continues working with clans and customary landowners to identify clan agents and finalize compensation agreements for initial damage, surface damage and annual deprivation payments.

A significant achievement this quarter was when the first compensation payment for initial and surface damage to one of the Taguali subclans at the HGCP site. This agreement was the culmination of more than one and a half years of engagement with the subclans. The Taguali clan agents have elected to delay their deprivation payments until later in the year when appropriate ceremonial plans can be arranged. The Socioeconomic team continues to work with the remaining five Taguali subclans and the Tuguba clan (with two subclans) to reach compensation agreements for the remainder of the HGCP land area.

In the Hides area, clan agency agreements were finalized and compensation payments made to most of the landowner clans for the Hides Waste Management Facility site. Compensation was also paid to the eighth of eleven Komo Airfield clans this quarter, while the Socioeconomic team is working with the three remaining clans to finalize their compensation agreements. Some of these clans have entered into formal land dispute proceedings, and court proceedings are likely to delay Project compensation payments to the disputing clans.

Along the onshore pipeline, clan agency agreements and compensation agreements were reached with clans located near the Kantobo and Gobe areas. Five clans were compensated for initial damage, surface damage and deprivation payments covering an additional 23 kilometres of the pipeline ROW. With the exception of 55 kilometres of the ROW in Gobe and Kopi that remain under landowner dispute, the Project has compensated impacted clans from the Omati landfall site through to Kantobo. The Socioeconomic team continues to compensate communities as pipeline backfill operations are completed. The Project commits to paying statutory compensation to the relevant landowners in the area once landowner disputes are settled.

For the remainder of 2012, land demarcations and negotiations with clan landowners for quarry sites, spoil sites, wellpads and the onshore pipeline will continue, with compensation paid when agreements are finalized.

6.2 Resettlement

Livelihood restoration for impacted communities was a key focus this quarter, along with securing land access for sections of the onshore pipeline.

The Project continued training resettled communities in crop and livestock production skills to help them develop income generation schemes, particularly in the Hides and Komo areas. Many women were also trained in food processing, hygiene and household nutrition.

Addressing speculative housing remains a challenge, and the Project has introduced video walkthroughs to record baseline conditions at the time of land census and survey. Additional awareness sessions are being held with communities to continue reinforcing census requirements and expectations.

6.2.1 Milestones and progress

Resettlement activities this quarter emphasized livelihood restoration in the resettled communities of Hides and Komo, along with securing land access for the proposed pipeline ROW in the Homa, Paua, Benaria and Awatangi areas.

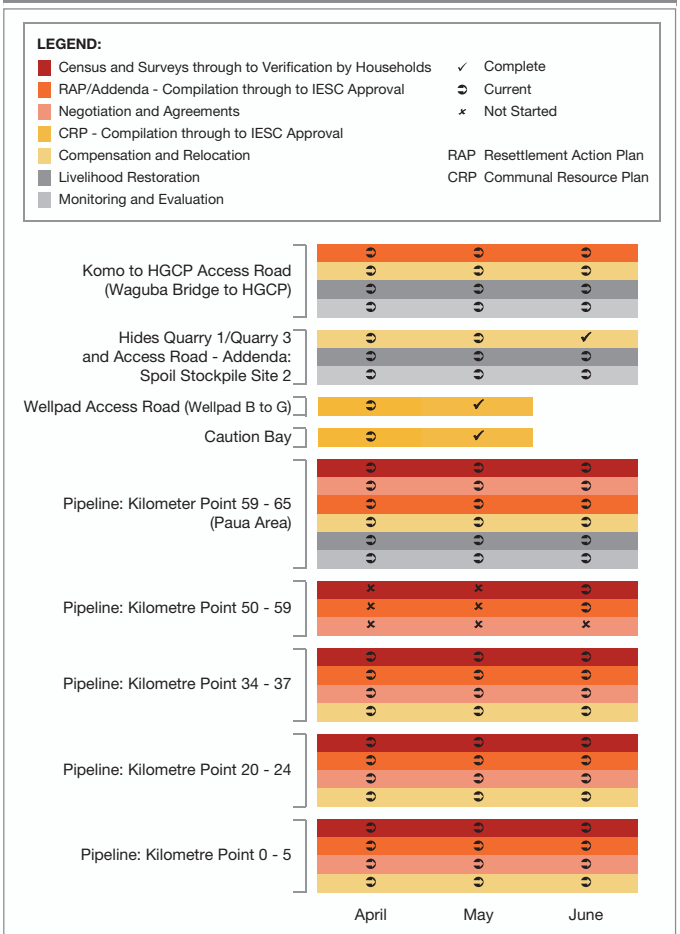
Resettlement milestones achieved include:

- Completing compensation payments and relocating households near Spoil Stockpile Site 2.
- Completing construction and handover of two permanent houses for two vulnerable persons.
- Establishing a process for areas of the pipeline ROW that have not yet been accessed, which uses videography and photography to document existing houses and gardens.
- Continuing resettlement activities along the pipeline ROW in the Paua area (Kilometre Point 59 to 65), as well as areas designated for a laydown area and a quarry.
- Completing census and survey activities for Kilometre Point 20 to 24 (Awatangi) and Kilometre Point 34 to 37 (Benaria).

Figure 6.1 shows the status of key resettlement activities conducted during this quarter.

Ongoing livelihood restoration and monitoring and evaluation activities are underway in 14 areas. In the Homa and Paua areas (Kilometre Point 55 – Kilometre Point 69) livelihood monitoring surveys were completed for eight out of the 11 households. Preliminary garden surveys evaluated the supply of food and nutritional supplements so that livelihood restoration requirements may be identified for seven families. Baseline trade store price surveys were also undertaken to facilitate price comparisons and the identification of any trends over the next 12 months. At Kopeanda Landfill and Tumbi Quarry (QA-1), all monitoring and evaluation was completed for resettled households and gardens.

Figure 6.1 – Status of key resettlement activities



6.2.2 Highlights, achievements and lessons learned

Key resettlement activities conducted this quarter include:

Livelihood restoration: Nearly 28,000 sweet potato cuttings, 940 cassava cuttings, 1,700 pineapple offshoots (slips), 530 orange/mandarin seedlings, 340 kilograms of corn, 260 kilograms of peanuts and 2.1 kilograms of temperate climate vegetable seeds were distributed in the Hides and Komo areas.

Over the past two years, propagation of plants, particularly high yielding sweet potato, and livestock (chickens and ducks) has taken place at the Project-established nursery at Komo. The emphasis now also includes building local small businesses where villagers are trained in propagating high yielding crops as well as with raising chickens, ducks and pigs.

A number of individuals were trained this quarter in propagating sweet potato, corn and other food crops, and others in breeding chickens, ducks and pigs. Four households were provided with one boar each and taught to construct appropriate housing for them. Meanwhile, sows were selected in preparation for breeding. Their owners will pay for the breeding service by providing one piglet from each litter. In the longer term, it is anticipated that such micro-businesses will become self-sustaining – that is, without the need for any Project support.

Other key activities this quarter included:

- Completing household and garden surveys for the Homa laydown area (included in Kilometre Point 50 to 59).
- Evaluating additional suppliers to meet the growing demand for livestock as a source of income generation. Households continue receiving basic livestock (chickens, ducks and pigs) training in their hamlets, and the Komo livestock propagation facility is being used to breed ducks and chickens which are distributed for household use and income generation.
- Agro–food processing and nutritional education continuing at the Hides and Komo areas.
- Ongoing monitoring of food supplies for vulnerable (at-risk) households.
- Additional introductory training on poultry and vegetable management for landowners from the Hides and Komo areas.

For further information on the Livelihood Restoration Program, refer to *Case Study Three – Creating sustainable livelihoods*.

Monitoring vulnerable individuals: The Resettlement team is evaluating potential vulnerable cases for Project assistance. Genuine cases (those that meet the vulnerable criteria as per the International Finance Corporation Performance Standard 5 – Land Acquisition and Involuntary Resettlement) are prioritized by the Vulnerables Committee. This Committee consists of representatives from the Environmental Law Centre, along with members of the Project's Livelihood Restoration, Census and Survey, and Resettlement teams. In addition to providing support, the Project continues monitoring vulnerable resettled individuals.

Pipeline camps and components: Garden and household surveys were completed for the Homa laydown area (Kilometre Point 50 to 59) and continued for the Paua area (Kilometre Point 59 to 65, including a quarry). Meanwhile, resettlement activities for the onshore pipeline commenced for Kilometre Point 34 to 37, Kilometre Point 20 to 24, and Kilometre Point 0 to 5. Provision of land access continued for the pipeline ROW from Kilometre Point 65 to Kilometre Point 80.

Spoil stockpile sites and logistics routes: Compensation payments for landowners for spoil stockpile sites along Hides Quarry Road were completed; and households and gardens resettled. Payments related to outstanding resettlement housing packages also continued along the road from Komo to Hides.

Resettlement housing and water structures: Five houses and seven communal water structures for resettled communities in the Hides and Komo areas were completed during the quarter.

CASE STUDY THREE

Creating sustainable livelihoods

From teaching Papua New Guinean communities the fundamentals of baking and nutrition to introducing new methods for raising ducks and pigs, as well as donating ovens, crops and livestock, the Project's Livelihood Restoration team is helping people create sustainable livelihoods both within and outside the Project impact area.

While people who have been physically or economically displaced by Project activities remain the priority of the Project's Livelihood Restoration Program, the Project is increasingly working with villagers in the Hides, Komo, Moro and LNG plant site villages more broadly.

The connection between the reduction in child mortality and access to cash for women – which often means improved food, shelter and healthcare – has long been understood. For example, in the Hides area where women have had very little access to income until recently, sadly, a high proportion of children die before they are five years old.

Over the past two years, the Project has been working with women in particular to help them identify practical ways of earning incomes for their own families, which in turn addresses long-standing challenges faced by their communities.

"A lot of the work we've been doing has been aimed at cultivating new skills, improving nutrition and developing economic opportunities for local families," says Livelihood Restoration team leader, Dr. Mike Bourke. He also said: "It is still early days, but there are signs that our programs are already having a positive impact in many communities."

The Project has selected its activities carefully, ensuring they are tailored to community needs and practical to implement, as these factors are fundamental to sustainability.

One focus over the past two years has been helping Project-impacted communities develop sustainable and marketable crops and livestock. Assistance provided has ranged from helping communities sterilize soil for nursery construction, through to distributing seedlings for planting. To support propagation activities in the communities, to date the Project has also provided:

- 67,600 sweet potato cuttings.
- 8,200 pineapple suckers.
- 2,400 cassava cuttings.
- 1,590 orange and mandarin grafted seedlings.
- 610 kilograms of peanut seed.
- 250 kilograms of corn (maize) seed.
- 760 chickens and ducks.

Rising success

The leader of the Kapute Women's Group, Tai Himu, started baking scones in mid-2011 when the first baking drum and food processing training became available in her area through the Project. As a widow with three children, Tai is classed as a vulnerable settler. The income she earns from baked goods is enabling Tai and her family to improve their lives.

So far, Tai has used the money she makes selling baked goods to pay for her eldest son's schooling and to buy equipment for training other women in the preparation of baked goods. She has also started to raise broiler chickens as another source of income.

"I'm really excited as I'm learning new things," Tai said.

"I find baking so important to my life. I can now depend on myself and support my family instead of begging from my brothers and relatives," Tai said.

Tai Himu

CASE STUDY THREE

Creating sustainable livelihoods

Access to equipment and skills is especially important for women and their families. The Livelihood Restoration team has helped train over 900 women to use drum ovens (made out of unused oil drums) and establish baking businesses in Project areas. Most training is delivered in the Huli language, and there is a strong focus on using local ingredients that the women can source from their own food gardens.

Mame Tene mixing flour into dough for baking

The Project has also donated 22 drum ovens to community women's groups and commissioned another 50 drum ovens for delivery to communities during the third quarter 2012. Through the baking and food processing program alone, approximately 300 women have built successful businesses selling baked products in local markets, outside Project camps and from their homes.

Tai Himu checking her scones in the drum oven

Among the many women who are achieving success through the food processing program is the President of the Hides Women's Association, Juguli Kapiago, who has used the money she earned from baking and raising chickens to establish a guest house. Another participant in the program, Lipu Patric, is using the money she makes from baking and cleaning at the HGCP site to pay two employees in her baking business, support her son's education and to buy essential items for her family.

Lipu Patric selling her baked scones

Meanwhile, Juni Women's Group leader Miriam Ngai and six other women have used the money made from baking to start a chicken project. They have now generated enough income to establish a teahouse.

Agiru Para

Agiru is also using baking to change her life. "I was so poor and I and my kids never ate chicken or rice in our meals. I never even did any birthday parties for my kids, though I wished to, because I had nothing. After the baking, I did the first birthday of my life for my baby with four chickens and some rice. I am speechless but thank you to all who bring this opportunity to my life because it has helped me a lot," Agiru said.

Agiru, who is hearing impaired, has also been able to use the money she makes from baking to buy household essentials including pots, a blanket, clothes and soap for her family.

CASE STUDY THREE

Creating sustainable livelihoods

A balanced program

The Project's Livelihood Restoration Program is based on:

- **Monitoring garden areas:** Home and food gardens planted by settlers are measured as they are established in new locations.
- **Supporting local livestock production:** Settlers are supported with training as well as the provision of ducks and chickens, and a pig breeding service.
- **Propagating superior planting material:** The most important of these, and the crop in greatest demand, is the virus-free sweet potato variety. Other crops include cassava, corn (maize), peanuts and African yam.
- **Propagating fruit for subsistence use and sale:** The most important are citrus (oranges and mandarins) as they are well adapted to the mid-altitude zone in Papua New Guinea. Guava, pawpaw and pineapple are also distributed.
- **Temperate climate vegetables:** There is considerable potential for temperate climate vegetables in higher locations, such as near the HGCP, particularly cabbage, Chinese cabbage, lettuce, spring onion, bulb onion and carrot. Some villagers trained in growing these crops have made significant income from local sales.
- **Food processing, hygiene and nutrition awareness:** The initial focus of this work was on baking/food processing. Some of the products have been widely adopted, particularly baked scones, cakes and broiled chickens. This Program has been expanded to include health and hygiene and education about the nutritional value of different foods.
- **Supporting vulnerable households:** Settler households deemed to be vulnerable because of the health, age or marital status of the main provider, receive additional support with planting material, training and other assistance.
- **A flexible Livelihood Restoration Program:** As the Livelihood Restoration team has gained experience, the Program has been adapted and improved. For example, the Livelihood Restoration team is now outsourcing services to local growers, including the breeding of chickens, ducks and pigs.
- **A balanced team:** The Livelihood Restoration team has a good balance of men and women; of crop, animal and food processing specialists; and community outreach workers with extensive local knowledge. Most of this team are Papua New Guinean citizens.

Heart shaped muffins ready to be sold

Linago Tugube

Linago Tugube has used her newfound baking skills to help lift her family out of poverty.

"I get myself busy baking and with the money I make, I bought trays for my baking, a big mattress and a blanket, plates with lids, bowls, dishes and other utensils and new clothes for the family, which I would never own if I did not bake. I am so happy," Linago said.

Linago also supports her son with his schooling. He, in return, is supporting her with building a roundhouse, which is still under construction. Linago is proving to be a smart business woman, paying 20 Kina (almost US$10) each to local boys who source bush materials for her roundhouse, and she pays five doughnuts each to children who help her fetch water for her baking. Linago said her aim was to expand her baking facilities and to change her life.

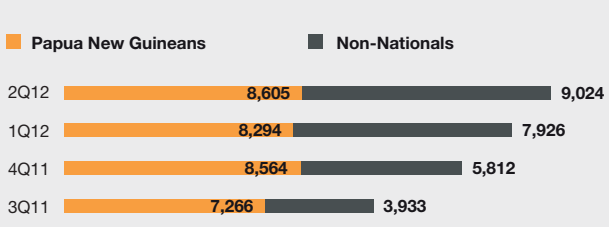
7 Workforce

In accordance with commitments made in the National Content Plan, the Project is providing employment and training opportunities to Papua New Guinean citizens and developing the skills of its workforce to meet the demands of construction activities.

7.1 Development

Project workforce numbers continue growing to meet the needs of increasing construction activity at both the HGCP and the LNG plant site. As illustrated in Figure 7.1, more than 17,600 people were engaged in the Project workforce by the end of this quarter. Of those workers, almost 50 percent are Papua New Guinean citizens. Lancos continue to provide over 70 percent of the total Papua New Guinean workforce to the Project.

Figure 7.1 – Project workforce numbers



The Project's total workforce has increased by over 1,400 people compared to the first quarter 2012. However, with an increasing demand for specialized skills at the LNG plant site, along with continued demobilization activities by the Upstream Infrastructure contractor, the overall ratio of Papua New Guineans in the Project workforce is slowly decreasing. More than 1,070 women are currently employed by the Project, with 70 percent Papua New Guinean citizens.

7.2 Workforce training

In-house, on-the-job and formal classroom training programs provided by the Project are helping to build the skills of the Papua New Guinean workforce.

7.2.1 Construction training

This quarter, more than 950 courses, equating to almost 147,000 training hours helped prepare Papua New Guinean citizens for construction and operations roles across Project sites. To date, more than 10,000 Papua New Guinean citizens have undertaken training, bringing the Project's total training hours to more than 1.3 million, and the total courses delivered to more than 5,000.

Project provided training

The Project continues providing Australian Quality Training Framework training through the Port Moresby Construction Training Facility and the Juni Construction Training Facility. It is also providing an Operations and Maintenance training program ahead of the start-up and commissioning of the LNG Plant and the HGCP.

Most courses are mandatory for all Project workers, covering topics such as Safety, Security, Health and Environment (SSHE), construction, cultural awareness, camp maintenance and catering. Some of the courses provided this quarter covered working in uncontrolled environments, first line supervisor SSHE and basic first aid.

While most Project provided training is directly relevant to construction and operations activities, it also provides Papua New Guinean workers with transferable skills for other work environments, both in-country and overseas.

Contractor provided training

Eight engineering graduates sponsored by the LNG Plant and Marine Facilities contractor continue gaining on-the-job training in their respective trades. Meanwhile, 38 trade apprentice trainees, sponsored by the Offshore Pipeline contractor, continue their Level 3 apprenticeship training through the Works Institute of Technology in Port Moresby. Once completed, they will undertake the National Apprentice Trade Test to qualify for Level 1 Tradesperson certification before the end of this year.

7.2.2 Contractor workforce training

The second intake of trainees at the Juni Construction Training Facility graduated in late May with an Australian Quality Training Framework standard Certificate Level II in General Construction and Civil Construction. Meanwhile, the third intake of 20 trainees commenced their training program in June. The Juni Construction Training Facility will have one more intake of 20 students before the end of the third quarter 2012.

Plate 7.1 – Peter Graham, Managing Director, Esso Highlands Limited, addressing graduates at the second Juni Construction Training Facility graduation ceremony

After completing all preliminary training activities at the Port Moresby Construction Training Facility, the last group of trainees moved to the LNG plant site for on-the-job training, with trainers assessing their skill levels for the internationally recognized TAFE Australia Certificate Level I in Resource and Infrastructure Operations this quarter.

To date, more than 1,600 graduates, with 30 percent female, have been trained at the Port Moresby Construction Training Facility and more than 300 graduates have achieved their Certificate Level I in Resource and Infrastructure Operations.

7.2.3 Graduate programs

The ten Papua New Guinean graduate engineers recruited by Esso Highlands Limited early this year continue their progress, with three based in Port Moresby, one based in Singapore and six based in Melbourne, Australia where the first six graduate engineers from the 2011 program are also based.

The two drilling engineers receiving on-the-job training with an ExxonMobil Australian affiliate in Melbourne are preparing to return to Papua New Guinea to work with the Drilling team when it spuds the first gas well later this year.

7.2.4 Operations and Maintenance training

The first intake of Operations and Maintenance trainees, initially recruited in mid-2010, is almost halfway through completing Advanced Skills training in Nova Scotia, Canada. This involves hands-on technical training in their choice of either production operations or one of the maintenance trades – mechanical, electrical or instrumentation. At the end of this year, the trainees will return to Papua New Guinea for on-the-job training in their specific discipline as part of the final phase of their training program.

Plate 7.2 – Trainees undergoing Advanced Skills training in Canada

The second intake of Operations and Maintenance trainees is continuing studies in the Foundation Skills Program, which has been condensed from an 18-month Program to 12 months. The trainees will commence the Basic Skills Training Program in September 2012 and, upon successful completion of both the Foundation Skills and Basic Skills Training programs, they will participate in Advanced Skills training.

This quarter, the Project introduced a 'get together' event at the Production Operations Training Centre when the first intake returned home for a course break in April to enable trainees from both intakes to meet and start building relationships as a united workforce for the future.

The experience of a lifetime

Three Operations and Maintenance trainees who are undertaking Advanced Skills training in Nova Scotia, Canada share their experience:

"Life here is like a special blessing to me. Every day I get to enjoy the beautiful weather of Cape Breton. I'm greeted by so many Canadians each day that sometimes, I tend to forget I'm from PNG. The activity I most enjoy here is the course I'm undertaking. The facility is so great that I feel like everything I've learnt so far comes to life here when we're busy in our labs. With such learning facilities like the Instrumentation lab and highly experienced instructors, learning here feels like working in the field," said Moi Kaira.

Trainee Michael Evara added: "It isn't every day that so great an opportunity comes your way that actually takes you there. Being an Operations and Maintenance trainee has been such an experience. It gave me hope and changed my mindset. Like pieces of precious metals that are tried and mixed in a furnace to attain the needed and desired qualities; we each are being trained and groomed in an intensive safety-focused learning atmosphere to bring out the best employees that we each can be. Being in this training program I can say that every day is somewhat compelling and challenging and makes me want to work hard towards that bright future that I see is already becoming a reality. This program has taken me to amazing places and is turning me into someone I never thought I could become. Thank you Esso Highlands and ExxonMobil for this golden opportunity, it truly has given me the experience of a lifetime!"

Appollonia Nabo shared the thoughts of her fellow trainees, Samantha Amos, Annmarie Norrie and Doreen Mandibi in saying "It's been a remarkable experience so far, not only in enhancing our skills but also experiencing a new culture which will be beneficial especially when working in a multi-cultural company. We'd like to thank our program facilitator LearnCorp International and ExxonMobil for giving us this opportunity to undertake this program in an advanced facility. We look forward to completing the year on a high and progressing to the next phase, on-the-job training."

Moi Kaira

Michael Evara

Appollonia Nabo

7.2.5 Intern Program

Four Papua New Guineans who were contracted to Esso Highlands Limited from the 2011 Intern Program were appointed as regular employees this quarter and others are being considered for ongoing roles with Esso Highlands Limited.

Meanwhile, 20 interns from the 2012 Intern Program are also being considered for future Esso Highlands Limited roles.

Plate 7.3 – Interns from the 2012 Intern Program

7.2.6 Above Field workforce training

The Project is conducting a professional development program for office-based employees, otherwise known as the Above Field workforce. More than 50 administrative assistants have developed workplace skills during the past year through a blend of classroom training, individual and small group coaching, and the establishment of an online Administrative Assistant SharePoint, which supports learning and provides ready references.

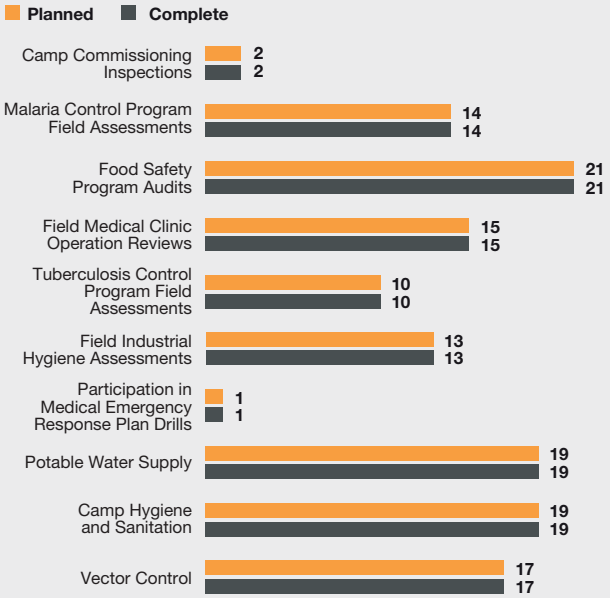
7.3 Health management

Continued monitoring and support of health programs is ensuring that health services meet the Project's ongoing needs. This quarter, the Health team focused on improving clinical diagnosis and contact tracing for tuberculosis, as well as improving industrial hygiene.

Meanwhile, night works have commenced at a number of sites. The Project is monitoring these works for any health-related issues associated with night work.

All planned health activities were completed during the quarter as shown in Figure 7.2.

Figure 7.2 – Number of planned and completed health activities during the second quarter



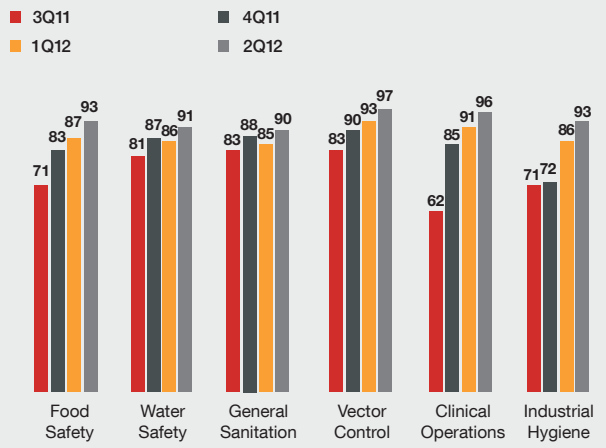
7.3.1 Camp and contractor health support

The Health team is supporting Project contractors as they move construction activities and camps along the onshore pipeline. This includes assessing hygiene and food and water quality as new worksites and camps are established and ensuring the quality of pre-employment medical screening and health assessments. The Health team is also working with contractors and the Project's medical provider to ensure adequate medical resourcing is provided at Upstream work locations.

During the quarter, health assessments conducted across the Project covered: clinics; food and potable water safety; vector control; camp hygiene and sanitation; and camp industrial hygiene. Overall, 128 assessments were performed with results showing an improvement across all areas from the previous quarter as illustrated in Figure 7.3.

The Health team is also updating assessment tools to reflect the relevant health issues during this phase of the Project. These tools will be deployed in the third quarter 2012.

Figure 7.3 – Percentage of camp adherence to Project specifications by health category



7.3.2 Leading and lagging indicators

The Project monitors leading and lagging health indicators to determine the effectiveness of its health programs. Leading indicators are those where the Project is proactively managing worker health. For example, mandatory initiatives that are part of the Malaria Control Program to minimize the risk of malaria to Project workers. Lagging indicators track actual cases of illness to confirm the effectiveness of control programs. For example, the Project tracks the cause of tuberculosis cases to evaluate the effectiveness of tuberculosis control measures. This section covers both leading and lagging indicators for the Project's health criteria.

Malaria and tuberculosis

Two cases of serious malaria, involving non-immune[1] personnel, were reported on the Project this quarter. Investigations revealed that both cases were imported from outside Papua New Guinea.

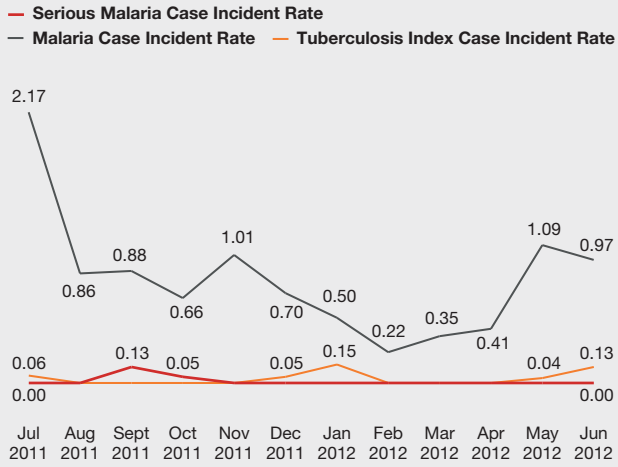
A total of 60 malaria cases involving semi-immune[2] personnel were also recorded this quarter. Thirty-seven of these occurred at one non-stewardable site in the Highlands where the Project has limited control over the movements of workers outside the camp after-hours, and also has limited ability to influence bite-prevention behaviors. To address this situation, the Project's Health team, in collaboration with the site contractor and medical team, provided additional education/awareness sessions and mosquito repellant to workers and performed early diagnosis and treatment on those who were affected. This action helped prevent any serious malaria cases occurring at this site.

Three tuberculosis Index cases (community-acquired) were confirmed in the quarter.

However, the total number of tuberculosis Serious Illness Event cases – those resulting from exposure to an Index case in a camp or worksite – remains at zero for the year-to-date and for the Project-to-date.

Malaria and tuberculosis incident trends for the year-to-date are shown in Figure 7.4.

Figure 7.4 – Malaria and tuberculosis case incident rates per 200,000 work hours



NOTE: This Figure shows the incident rate for tuberculosis Index cases only as there were zero Serious Illness Event cases for tuberculosis within this period.

Health incidents included in the PNG LNG Quarterly Environmental and Social Report are based on the best information available at the time of publication. Health incidents are subject to an investigative process and this sometimes leads to incidents being re-categorized or an illness confirmed, following a detailed investigation, after the Report has been released. This means that the number of incidents reported against a particular category may increase or decrease between one Report and the next.

Malaria

Project compliance with the Malaria Control Program reached 94 percent during the quarter, which is an improvement from 93 percent recorded in the first quarter 2012.

Non-immune worker compliance with the Malaria Chemoprophylaxis Compliance Control Program remains steady, with the non-detect rate[3] of 0.22 percent for the quarter. This is less than half the rate recorded for the first quarter 2012.

Trials of the Tetrapal® malaria chemoprophylaxis compliance test kit, launched in the first quarter 2012, were completed at the LNG plant site and at Port Moresby Project office locations. The test kit is now part of a regular process at these locations, with 1,476 malaria chemoprophylaxis compliance tests conducted using this diagnostic tool to date. The kit is expected to be deployed across the Project during the third quarter 2012.

1 A non-immune individual is where a person was not born and raised (at least to the age of five years) in a location that has malaria exposure.
2 A semi-immune individual is where a person was born and raised (at least to the age of five years) in a location that has malaria exposure.
3 A non-detect means chemoprophylaxis is not detected during testing.

Tuberculosis

Compliance with the Project's Tuberculosis Control Program is at 94 percent – an improvement from the 91 percent recorded for the first quarter 2012.

Tuberculosis diagnosis also significantly improved during the quarter, through revised diagnosis and contact tracing procedures. In addition to the GeneXpert machine provided through the 'Partnership for Health', the LNG Plant and Marine Facilities contractor has purchased another GeneXpert machine for operation by the Project's medical provider. This unit will be based at one of the LNG plant site clinics and will significantly reduce the diagnostic time taken to obtain a result for suspected tuberculosis cases on Project sites.

In addition, the Project's medical provider implemented a quality assurance process for chest X-rays in all Project clinics this quarter.

Food and water safety

The Project has achieved a continual improvement in food and water safety since the fourth quarter 2011, largely through the Health team working with contractors and subcontractors to rapidly identify and address food and water-related issues.

The overall food safety compliance score for the Project this quarter was 93 percent, an increase from 87 percent recorded in the first quarter 2012. Water safety scores also increased to 91 percent for the quarter, compared with 87 percent previously.

Camp hygiene and sanitation

Camp hygiene and sanitation compliance is improving, with a score of 90 percent against assessment criteria compared to 85 percent in the first quarter 2012. This is largely related to improvements in laundry procedures and pest control at Project camps. The Health team is working with contractors to address room ventilation specifications for shared accommodation, particularly in dormitory style buildings.

Vector control

Above average rainfall throughout this quarter resulted in increased numbers of adult mosquitoes across Project sites, requiring increased fogging and surveillance at some Highlands worksites. Meanwhile, vector surveillance conducted in Port Moresby indicated the presence of dengue vector mosquito species in and around worker accommodation and other heavily used locations, such as supermarkets, restaurants and shopping centers.

To address this emerging risk, an evidence-based dengue risk profile was developed for the Port Moresby area using cumulative mosquito surveillance data. Investigations indicated that no dengue vector mosquito species were identified through vector surveillance at the LNG plant site.

Three cases of dengue were confirmed this quarter, but they were most likely from exposure outside the LNG plant site.

The overall vector control compliance score this quarter was 97 percent, up from 93 percent recorded in the first quarter 2012.

Clinical operations

The integrated HGCP clinic is now providing more comprehensive and centralized health care services for several contractors and worksites in the Hides area. While in Lae, a clinic managed by International SOS began providing medical services late May.

Throughout the quarter, the Project and its medical provider conducted joint clinical operations assessments to align standards and ensure quality assurance at all medical facilities. Overall, clinical operations have improved with a compliance score of 96 percent compared with 93 percent recorded in the first quarter 2012.

Plans for improvements for the Port Moresby Project clinic were realized this quarter with the introduction of user-friendly Field Guides for the diagnosis and management of malaria, tuberculosis and dengue at all Project sites. Improvements in the quality control process for diagnostics testing were achieved through agreements for third party verification of laboratory results to ensure the accuracy of diagnosis for case management and for improving in-house testing protocols.

Industrial hygiene

The industrial hygiene subject matter expert visited worksites during this quarter to assist contractors with task-specific exposure assessment criteria. They also provided technical support in industrial hygiene to contractors at worksites. There was a continued focus on respiratory protection, especially regarding polices governing the use of respiratory protective equipment and high noise activities.

Industrial hygiene also recorded an improvement with a compliance score of 93 percent for this quarter compared to 86 percent in the first quarter 2012.

General illness events

Six cases of chickenpox and one case of mumps were confirmed at Project sites this quarter. These cases were isolated and managed immediately, preventing further transmission.

Medevacs and medical transfers

The Project recorded 30 medevacs; 27 were related to personal health issues and three were work related. There were also 148 medical referrals and transfers compared with 130 during the previous quarter, which aligns with the increasing workforce.

Approximately 90 percent of referrals originated from the LNG plant site, where the largest workforce resides. Most referrals were related to personal health conditions, with only three for work related health issues.

7.3.3 Other strategic initiatives

The Project recognized World Malaria Day on April 25, with awareness-raising activities conducted across all worksites. These activities included presentations and promotional materials being featured at worksites throughout the month of April, along with malaria education and awareness materials presented to community health clinics in areas surrounding Project sites.

Plate 7.4 a-b – Awareness and educational materials distributed in support of World Malaria Day

During this quarter, the Project's Infectious Disease Outbreak Management program was deployed to all sites, and the Health team delivered training to site managers and operational teams.

Clinical health performance metrics introduced in the first quarter 2012 to measure the performance of the Project's medical provider in the areas of diagnostics (malaria, tuberculosis and dengue), clinical operations, emergency response, supply logistics and equipment were used to identify improvements this quarter. The improvements recorded were in the areas of: diagnosis and case management of malaria, tuberculosis and dengue; and supply chain logistics efficiency.

Clinical standard performance metrics are also being used to identify potential areas for improvement so the medical contractor can continue meeting the Project's ongoing needs.

Meanwhile, the Project's medical provider obtained HIV testing and counseling accreditation for major clinic sites, and introduced a referral pathway for HIV testing and counseling for smaller Project clinics.

7.4 Safety management

The Project had the safest quarter to date, despite construction being at its peak, and achieving over one million work hours per week. This improving safety trend is attributed to ongoing improvements in core safety processes, including six consecutive months of improvement in the quality of Observation and Interactions performed across the Project.

As construction activities progress, the Project's focus has moved from managing non-traditional construction challenges, such as working in uncontrolled environments, dealing with remote locations, and managing the safety needs of a cross-cultural workforce; to managing safety hazards normally associated with the construction industry. For example, during this quarter the Project initiated regular Safety Best Practices meetings as part of the Leading Indicators for Higher Hazard Activities program established during the first quarter 2012.

Higher hazard activities inherently have a higher risk and require stringent controls to prevent serious or fatal outcomes. Examples of higher hazard activities include confined space entry, excavation and work at heights.

As such, Safety Best Practices meetings aim to provide a standardized, best practices approach to managing higher hazard activities across the Project. These Meetings also provide an opportunity for Project contractors to obtain clarification and guidance on safety expectations and requirements.

The first Safety Best Practices meeting was conducted in Port Moresby and attended by senior Project Safety Advisors and construction professionals. The Meeting coincided with a Work at Heights workshop, which was also held in Port Moresby during the quarter.

These Safety Best Practices meetings supplement the Leading Indicators for Higher Hazard Activities Toolkit that was distributed to Project worksites in the first quarter 2012. The focus on higher hazard activities supplements initiatives already in place, including the Project's Critical Life Saving Rules and the highly successful Safety Champions initiative.

To date, more than 400 Papua New Guinean Safety Champions have been trained through the Safety Champions initiative. Phase two of the Safety Champions initiative will expand training to non-nationals currently engaged on the Project as safety leaders.

Playing it safe on the pipeline

During this quarter, the Onshore Pipeline contractor engaged players from Papua New Guinea's national rugby league team, the Kumuls, to visit worksites and reinforce key safety messages. Widely regarded as national heroes in Papua New Guinea, the Kumuls visited more than 20 worksites over seven days and spent their time talking to small groups of workers in some of the Project's most remote areas. The Kumuls reinforced key messages of pride, teamwork, caring and respect for each other, and following the rules. They also signed specially made rugby jerseys in the Papua New Guinean colors, emblazoned with the phrase "Pipeline All Stars".

The Kumuls visiting Project worksites to reinforce safety messages

As well as participating in Project-led safety initiatives, contractors are implementing their own safety programs. For example, by the end of this quarter more than 7,500 workers completed the Incident and Injury Free training program at the LNG plant site. The training focuses on building an incident and injury free culture through open communication and engagement with all workers. It involves changing worker behavior to focus on safe practices, which can be applied at work, at home and in the community. The Incident and Injury Free training program also helps to reinforce the Project's key safety message of *Nobody Gets Hurt*.

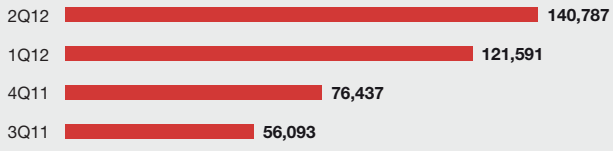
In preparation for the Project's start-up and commissioning activities, the Safety team has begun identifying and transitioning personnel into key roles responsible for managing and implementing the Project's long-term safety system.

7.4.1 Leading indicators

Through increased safety awareness and engaging workers in daily hazard management activities as part of core safety processes, such as Job Safety Analyses, and Observation and Interactions, the Project is continuing a positive safety trend as illustrated in Figures 7.5 and 7.6.

Figure 7.5 – Number of Job Safety Analyses conducted by quarter[4]

Figure 7.6 – Number of Observations and Interactions conducted by quarter[4]



7.4.2 Lagging indicators

The Project's Total Recordable Incident Rate and Lost Time Incident Rate continue to improve (as shown in Figure 7.7). The Project's work hours continue increasing (as shown in Figure 7.8) with the Project now recording over one million work hours per week.

Figure 7.7 – Project incident rates by quarter[4]

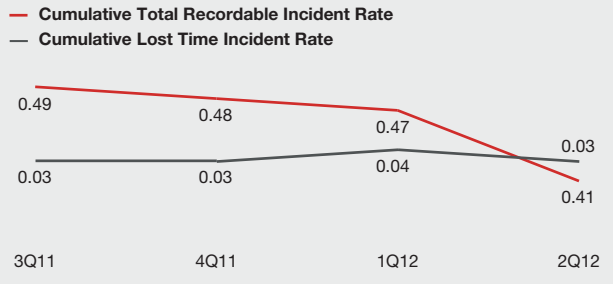
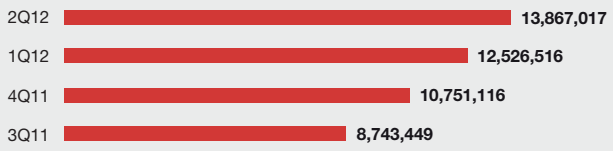


Figure 7.8 – Project work hours (Category 1) by quarter[4]



NOTE: Project-to-date work hours totalled 73,976,538.

4 Data adjustments may be reported by contractors after the Report is released, and as such safety data may be refined between one report and the next.

7.5 Worker welfare and conditions

Worker welfare remains a priority for the Project, and is achieved through the implementation of the Labour and Worker Conditions Management Plan and the Camp Management Plan. A high standard of working conditions and camp accommodation are crucial for the safety, health and motivation of Project workers.

7.5.1 Camps

Progress was made on the construction camp at the HGCP during this quarter. A new kitchen and one of two new dining halls were completed, along with almost half of the camp's accommodation. A number of recreational facilities were also completed for camp residents.

The Camp Facilities Management Committee established in Komo during the first quarter continues providing a forum for camp workers to raise issues and grievances. The Committee recently assisted with workloads to enable Papua New Guinean workers to return to their electorate, where relevant, to participate in the voting process for the 2012 National Election.

As onshore pipeline activities continue moving north, Gobe Camp 3 was demobilized and its former occupants moved to Tamadigi Camp 4. They will relocate to Moro Camp 5 once construction of this new camp is completed.

7.5.2 Labor and worker conditions

Monthly cultural awareness training sessions help workers better understand not only Papua New Guinea's culture, but also the cultures of other Project workers.

This quarter, non-national LNG plant site supervisors received specific cultural-awareness training to help them better understand some of the cultural traits of Papua New Guinea's Motu-Koita people. The supervisors stated that this training would enable them to better communicate with the Papua New Guinean workforce, and understand the local culture and influences.

The Project's drama group is also helping workers develop their own cultural awareness by delivering performances based on effective communication and understanding Motu-Koita behavior and cultural expectations. The drama group is planning to use performance to support wider workplace topics such as: respecting timekeepers – getting back to work after breaks in the day; and hand washing for food handlers.

As work is completed on the Project, the demand for a large workforce will reduce. This quarter, a Project-wide demobilization strategy for the Papua New Guinean workforce was approved and distributed to all relevant stakeholders.

The strategy aims to ensure a coordinated and consistent process for demobilizing the Papua New Guinean workforce. The Project's major construction contractors and large Lancos will also have their own demobilization strategies for their workers that align with the overall Project demobilization strategy.

It is anticipated that future employment opportunities will arise for the workers who have gained valuable skills through the extensive training provided by the Project and its contractors. Workers now have the skills relevant to opportunities in areas such as other mining or oil and gas projects, or government infrastructure projects. In addition, the Project's capacity building and livelihood development programs are supporting communities with local business development.

8 Conformance

The Project implements verification, monitoring, and assessment and audit measures to identify and manage areas for improvement, as well as to conform with the environmental commitments outlined in its ESMP.

8.1 Verification

The Project's Field Environmental team provides an ongoing verification and monitoring presence at contractor worksites. These team members conduct independent daily checks, joint inspections, meetings, awareness raising workshops, training sessions, and issue resolution with the contractors. Field Environmental Advisors provide formal weekly site reports, which include field observations and non-conformances, to the Project's Information Management System. These reports are reviewed with both Project and contractor personnel to help identify areas that require additional focus.

During this quarter, the Project developed a central database for water quality monitoring results (refer to *Section 11.1.2 Quality*), which will enable the Field Environmental team to review testing results across the Project and prioritize areas that need the most support.

First year intern candidates involved in verification and monitoring at the LNG plant site are nearing the end of their program. The candidates are part of an annual Environmental Internship Program conducted in partnership with the University of Papua New Guinea and the Pacific Adventist University. The program gives interns the opportunity to participate in on-site verification and monitoring activities. Eleven potential candidates will be interviewed in the third quarter 2012 for the 2012-13 Environmental Internship Program.

Plate 8.1 – Environmental interns at the LNG plant site

8.2 Monitoring

Consistent monitoring methods are communicated across the Project through the Environmental Verification and Monitoring Manual. The Manual provides detailed monitoring procedures and is updated regularly to address identified issues and share lessons learned.

Contractors also use individual environmental management systems to meet the monitoring requirements of the ESMP and the Environmental Monitoring Plan. Results of monitoring programs undertaken this quarter are outlined in the following sections.

8.3 Assessments and audits

Regular Project inspections are complemented by contractor-led inspections and verifications. For example, this quarter the LNG Plant and Marine Facilities contractor conducted its third environmental compliance audit of subcontractors. In addition, the Onshore Pipeline contractor arranged its own external audit against ISO14001:2004 Environmental Management Systems and conducted an assessment of the construction footprint along the ROW.

The Project and contractors also conduct joint inspections covering specific aspects of environmental performance. For example, a joint inspection of water management was undertaken at the Komo Airfield site this quarter.

Meanwhile, the IESC has released a report of its sixth site visit, conducted in March 2012, to monitor conformance with the Project's environmental and social commitments. The report is available on the Project website and outlines the IESC's findings from inspections of selected worksites and meetings with Project workers and involved communities.

Visit the Project website at
www.pnglng.com

8.4 Incidents, non-conformances and corrective action

8.4.1 Incident summary

There were no serious environmental incidents (greater than Severity Level 0), requiring notification to the IESC/ Lender Group or the Papua New Guinean Department of Environment and Conservation during the quarter. However, 111 environmental incidents less than Severity Level 0 were reported. They were all hydrocarbon or chemical spills with the exception of three wastewater spills.

All incidents were recorded and investigated to a level appropriate to their severity so that causal factors could be determined and corrected. Figure 8.1 illustrates incidents classified by severity, while Figure 8.2 groups incidents by their cause.

Figure 8.1 – Number of environmental incidents by severity level[5]

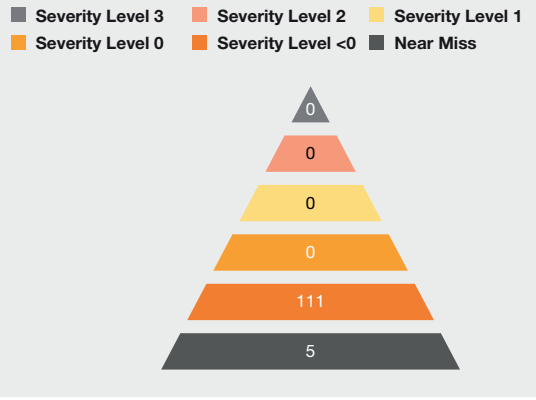
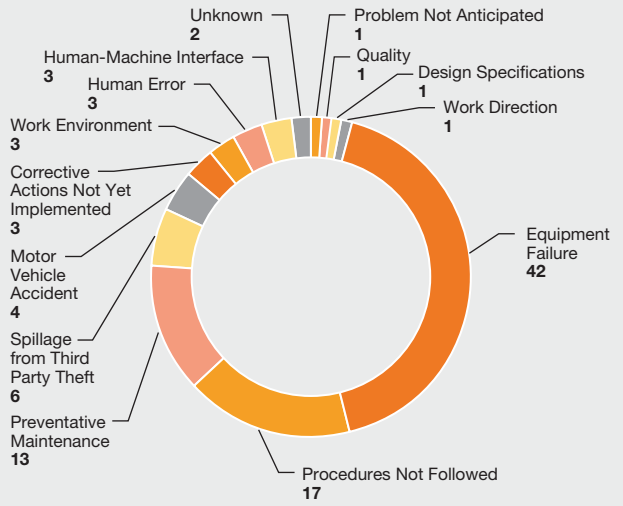


Figure 8.2 – Percentage of environmental incidents by causal factor[5]



8.4.2 Non-conformance and field observation performance

The Project records non-conformances and field observations as part of its ongoing environmental performance verification efforts. Field observations present a potential non-conformance situation where an observation, intervention and/or corrective action is required to prevent a non-conformance. A non-conformance is a situation that is not consistent with ESMP requirements.

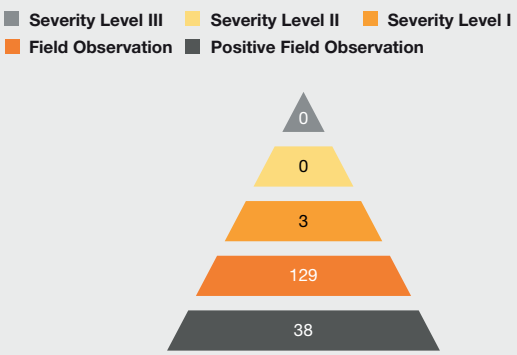
This quarter, the Project recorded 38 positive field observations, which was an increase compared to the first quarter 2012. This increase is attributed to the proactive and collaborative teamwork of the Field Environmental team and contractors. These positive observations related to reinstatement efforts, erosion and sediment control, spill prevention and waste management.

For example, the Komo Airfield contractor and Onshore Pipeline contractor were commended for their reinstatement efforts.

Also during this quarter, 129 field observations and three Level I non-conformances were raised. The majority of the field observations recorded were in relation to erosion and sediment control, water management, spill prevention and waste management. Working outside of approved boundary lines during site clearing, waste management, and erosion and sediment control activities accounted for the Level I non-conformances raised. No Level II or Level III non-conformances were recorded during the quarter.

A summary of all non-conformances and field observations is outlined in Figure 8.3.

Figure 8.3 – Number of environmental non-conformances and field observations by severity level[5]

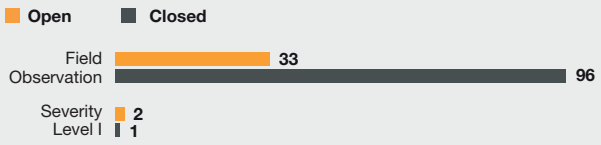


The Project's Field Environmental team is working closely with each major construction contractor to:

- Proactively address areas identified as potentially higher risk.
- Ensure contractors are focused on addressing field observations immediately.
- Proactively reduce the level of risk to prevent environmental incidents in the future.

The closure status for non-conformances and field observations is shown in Figure 8.4.

Figure 8.4 – Number of environmental non-conformances and field observations by closure status[5]



5 Data adjustments may be reported by contractors after the Report is released, and as such conformance data may be refined between one report and the next.

9 Pollution Prevention and Abatement

Across all activities, the Project aims to continuously improve environmental performance, including recycling, wherever possible.

9.1 Air emissions

Project-related activities can generate air emissions in the form of dust from earthworks and vehicle movements, exhaust emissions from waste incineration and combustion engines, and greenhouse gas emissions from the combustion of fuel.

Dust control measures were applied in the HGCP area this quarter and, in particular, water application was increased on haul roads to mitigate growing volumes of traffic movements from multiple contractors working in the area. To meet this increased need, a designated water pumping station was constructed along the Hides to Nogoli road to fill the water tank trucks. The pumping station extracts water from surface water sources. As work areas for drilling were installed, additional efforts to minimize dust included capping with compacted limestone and installing portable interlocking plastic matting over key work areas. Exposed earthworks and stockpiles were also managed to minimize dust generation through progressive reinstatement and revegetation where activity allowed (see *Section 10.5 Reinstatement*).

Plate 9.1 – Portable interlocking matting at drilling site minimizes dust

At the HGCP site, two incinerators are in use to handle perishable and non-regulated wastes generated by the Project. Routine emissions monitoring occurs during the course of these operations. Primary and secondary burn chamber temperatures are recorded for each waste batch incinerated, along with the color and quantity of smoke produced, waste material type burnt and weights of refuse burned and ash generated. A weekly summary of these observation records is kept by the contractor.

At the LNG plant site, a third construction waste incinerator was installed and commissioned during the quarter. This unit has an automated feed snout and rotary kiln allowing increased throughput and efficiency.

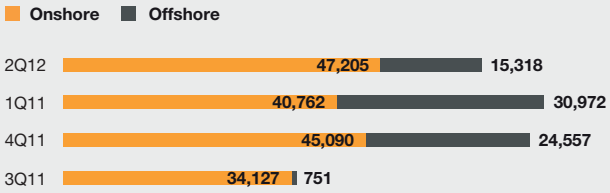
Efforts to minimize exhaust emissions from Project vehicles continue by limiting the amount of traffic, where possible, as well as through the use of buses to transport workers and load consolidation on vehicles.

As offshore marine works decreased, greenhouse gas emissions reduced during the quarter. Greenhouse gas emissions are calculated based on direct fuel use within the Project. Indirect sources, such as purchased electricity, are not included. Greenhouse gas measurements from the LNG plant site landfill will not commence until waste cells are capped, and it is not anticipated that the Hides Waste Management Facility will generate measurable greenhouse gas emissions as no disposal of organic or other green waste is planned.

During this quarter, the Project's onshore and aviation fuel use equated to a greenhouse gas emissions value of 47,205 tonnes of carbon dioxide equivalent, with marine operations contributing an additional 15,318 tonnes of carbon dioxide equivalent. Marine operations peaked during the first quarter 2012 and will continue declining over the remainder of the year, as will related emissions.

Figure 9.1 shows Project-related greenhouse gas emissions.

Figure 9.1 – Greenhouse gas emissions (tonnes of carbon dioxide equivalent) per quarter



NOTE: Emissions calculations are based on the Australian Government Department of Climate Change and Energy Efficiency, National Greenhouse Accounts Factors, July 2011.

Atmospheric air monitoring continued at the LNG plant site, with four designated areas monitored for sulfur dioxide and nitrogen dioxide in June. All sites were well below the air monitoring criteria levels adopted for the Project.

9.2 Noise and vibration

Noise criteria stipulated in the Project's Environment Permit are applicable to permanent Project facilities but not to temporary construction activities, such as drilling associated with well development. However, the Project continues to identify and manage potential impacts of construction noise.

The Project's Field Environmental team undertook verification monitoring at Komo Airfield this quarter, focusing on housing at the worksite boundary, which is considered a sensitive noise receptor. Supporting this effort, the Komo Airfield contractor conducted monthly noise monitoring at the worksite fenceline and within the Komo Pioneer Camp and Main Camp.

Readings confirmed that noise levels were generally within the Project's guidelines. Where instances that did not meet the guidelines were recorded, these were found to be non-Project related such as noise generated at a nearby marketplace. Other construction contractors also undertook noise monitoring as required.

With on-site drilling activities due to commence shortly, the Drilling team initiated an awareness program for Project community liaison personnel. Information provided included details of high noise activities or activities of extended duration likely to occur during drilling operations. This program will be extended to key community groups in the third quarter 2012.

Project-wide, there were no unresolved noise grievances at the end of the quarter.

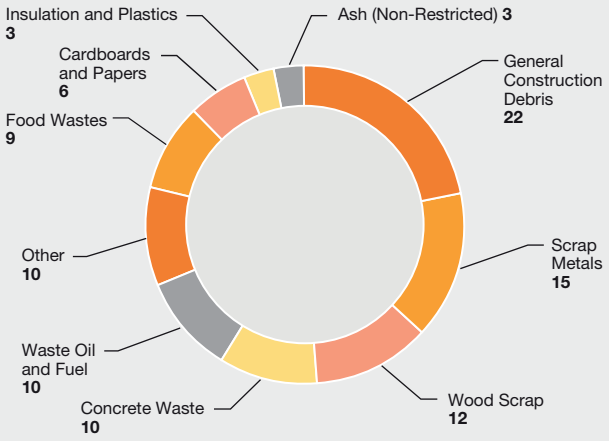
9.3 Waste management

Project-related waste materials generated this quarter by weight were predominantly general construction debris, scrap metals, wood scrap, concrete waste and waste oils and fuel as illustrated in Figure 9.2. Figure 9.3 illustrates disposal methods for solid waste during the quarter.

Construction of the first stage of the landfill at the Hides Waste Management Facility was completed and overall site stewardship handed over from the construction contractor to the Hides Gas Conditioning Plant and Hides Wellpads contractor. Construction of the processing facility, including the incinerator, continued with completion and commissioning scheduled for the fourth quarter 2012. The Project also completed the selection process for the provision of waste collection services and operation of the Hides Waste Management Facility. The appointed subcontractor will mobilize to Hides early in the third quarter 2012 and progressively provide the contracted services.

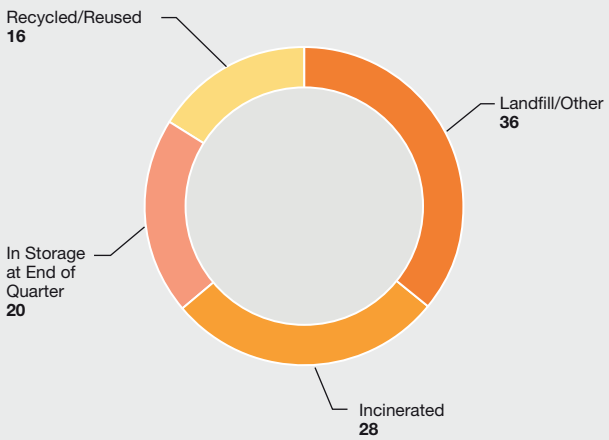
Plate 9.2 – Hides Waste Management Facility showing the processing area

Figure 9.2 – Percentage of solid waste by type



NOTE: Waste types with values of 2% and under have been combined in the category of 'Other'.

Figure 9.3 – Percentage of waste by disposal method



In addition, the Project completed an assessment and approval of waste oil disposal facilities in Lae and Port Moresby and waste oil processing commenced at both facilities.

Meanwhile, Project contractors are identifying opportunities to increase recycling. For example, the Onshore Pipeline contractor is re-using packaging cardboard to wrap and protect bales of tin cans and plastics during their transfer to third party processing facilities. In support of World Environment Day, the Upstream Infrastructure contractor ran a can recycling competition, which resulted in 59 kilograms of cans collected and donated to the Hides Women's Association for recycling.

Plate 9.3 – Delivering cans collected from the World Environment Day recycling competition

The Onshore Pipeline contractor is relocating waste management facilities according to the changing capacity requirements of pipeline construction activities. As activities around Kaiam Camp 2 near completion, the Camp's waste management facilities such as the processing equipment and the waste management area shelter are being relocated to Moro Camp 5.

Plate 9.4 – Kaiam Camp 2 waste management area shelter in preparation for transfer to Moro Camp 5

At the LNG plant site, the successful use of a biodigester for treating food waste has led to a second biodigester being installed and commissioned during the quarter. Approximately two tonnes of composted material was removed from the first biodigester and used as fertilizer on land surrounding Project activities. Dewatered sludge from the wastewater treatment plants has also been used as a fertilizer at the spoil stockpile site. Ongoing landfill leachate monitoring is conducted at these sites and surrounding areas (see *Section 11.1.2 Quality*).

Project contractors continue distributing good quality waste wood packaging from construction activities to local communities who use the wood for building purposes.

A world of activity for World Environment Day

Worksites across the Project took part in activities commemorating World Environment Day on June 5.

As part of Esso Highlands Limited's aim to *Protect Tomorrow Today*, in addition to everyday Project and contractor activities to protect the environment, workers also took part in initiatives including:

- World Environment Day stand-downs and toolbox talks.
- A reinstatement seed casting session.
- Volunteer work in refurbishing activities for the launch of the Port Moresby Nature Park.
- A morning of festivities at St. Paul's Primary School with tree planting, music, ballet dances and sketches.
- Rubbish collection (emu walks) at all worksites throughout the day.

LNG Plant and Marine Facilities contractor personnel with bags of rubbish collected during site-wide housekeeping stand-down

9.3.1 Wastewater

Following an in-depth review of wastewater operations conducted in the first quarter 2012, the Project implemented additional measures to support contractors with improving wastewater operations. For example, a new standard operating procedure for wastewater treatment plants was adopted across all worksites. An information poster emphasizing the importance of process monitoring and the timely implementation of corrective actions accompanied the procedure. These corrective actions included a review of treatment plant operating parameters and behavioral modifications such as only flushing appropriate materials into wastewater treatment systems.

The Project and contractors continue addressing wastewater treatment plant performance, particularly in the Upstream area. Higher frequency monitoring was conducted during the quarter to gauge the effectiveness of changes made to Upstream systems. The Project also bolstered wastewater treatment plant staff with additional experienced operators.

Wastewater treatment plant sludge management has temporarily become a handling and storage challenge in the Upstream area, but is expected to be alleviated in the third quarter 2012 when the Hides Waste Management Facility sludge processing system is commissioned.

As part of onshore pipeline camp relocation activities, the contractor conducted a review of the pre-existing facilities at Moro Camp 5 to assess flow requirements for different camp populations. Identified problems were corrected by installing four wastewater treatment plants. The contractor also focused on monitoring manholes in Tamadigi Camp 4 during heavy rainfall to ensure run-off was not entering the sewer system.

At the HGCP site, new wastewater treatment plants and the decommissioning of earlier facilities are expected to overcome issues of hydraulic overloading, which in turn affects overall plant performance.

9.4 Hazardous materials

The Project aims to avoid using hazardous materials, especially those that are subject to international bans or phase-outs. During this quarter, no materials subject to bans or phase-outs were reported to be on any Project site.

Hazardous materials training continues on Project worksites, with the Upstream Infrastructure contractor completing spill response training for camp operations personnel responsible for maintaining chemicals. In addition, proactive environmental inspections identified a damaged hazardous goods storage cabinet, which was replaced with a more secure unit. There was no damage to the contents of the cabinet and no environmental damage occurred.

9.5 Spill prevention and response

Following an exceptional spill prevention performance in the first quarter 2012, the comparative spill rate for this quarter showed an increase mainly due to broken hydraulic fluid hoses, accounting for 69 of the 108 spills recorded. The Project conducted numerous spill prevention campaigns, which included toolbox talks and issued a SSHE Alert to reinforce the importance of pre-shift inspections and identifying worn hoses. Focus was also placed on preventing fuel theft, which caused seven spills during the quarter.

The Upstream Infrastructure contractor conducted a review of bunding of all lighting plant on-site and drip trays were provided to all lighting plant that did not have sufficient secondary containment. In June, the contractor identified 18 minor spills from equipment hoses and has addressed this with the maintenance subcontractor.

During the quarter, the Drilling team undertook formal Project-led spill response training. Arrangements were also made with a third party vendor who will provide spill response support services specific to Tier II and Tier III spills – which are spills that exceed on-site capabilities – to ensure that appropriate spill response capacity is in place before drilling commences.

At the HGCP site, spill kit stocks were inspected and replenished. The status of spill kits is monitored on a monthly basis as a measure of preparedness for spill response.

A meeting of supervisors for the Onshore Pipeline contractor assessed spills to date and reviewed preventative measures to raise awareness with workers. Specialized spill response and pollution prevention training was conducted for the Tamadigi Camp 4 waste management crew and Moro Camp 5 refueling crew.

In addition, the Offshore Pipeline contractor continued daily onshore inspections of generators, heavy vehicle parking areas and refueling stations. Offshore vessel maintenance programs continued and spill kits were made available and ready – in particular, prior to bunkering of fuel.

Plate 9.5 – Supervisors spill review meeting at Tamadigi Camp 4

Spill response drills continued during the quarter, including one drill conducted by the Upstream Infrastructure contractor and another by the Offshore Pipeline contractor onboard an offshore installation vessel.

9.6 Dredging and offshore trenching

This quarter, a fiber optic cable was laid and buried to a one metre depth in a simultaneous operation from the Omati River landfall to beyond the mouth of the Omati River. To minimize disturbance of the seabed, a specialized vessel used a water jet injector system to create a small trench less than 0.3 metres wide for the cable. The cable was installed parallel to the pipeline with an offset of 20 metres, further minimizing Project impacts.

10 Biodiversity

The Project's performance is measured against a Biodiversity Monitoring Plan, which involves implementing measures that minimize the impact of construction activities on Papua New Guinea's valuable biodiversity resources. For example, the Project's Biodiversity Strategy includes a Biodiversity Offset Delivery Plan to maintain ecological intactness, conserve priority ecosystems and protect focal habitats while accounting for residual impacts.

10.1 Ecological management

With the start of drilling preparation works, training and awareness sessions were conducted with the Drilling contractor covering topics such as faunal protection and weed identification this quarter. Posters promoting awareness of fauna in general as well as specific endangered species from the Hides area, such as Bulmers' Fruit Bat *Aproteles bulmerae* and the Tree Kangaroo *Dendrolagus* sp., were also posted on workshop walls.

Meanwhile, preliminary construction and brush clearing activities continued in the Lake Kutubu Wildlife Management Area for the onshore pipeline. Training on the significance of the Lake Kutubu Wildlife Management Area and construction requirements for working in such an area was provided to raise awareness with onshore pipeline management, supervisors and foremen. Construction constraints associated with works in this area were also explained and reinforced to crews during daily toolbox talks. Topics covered in these talks included: the importance of working within defined construction limits; the no hunting, no fishing, and no collection of flora or fauna policy; and the preservation of buffer zones along watercourses to protect water quality and ecologically dependent species. In particular, Tree Kangaroo fact sheets were given to tree felling supervisors and Echidna *Zaglossus* or *Tachyglossus* sp. management protocols were discussed with front-end crews.

In an ongoing effort to minimize the construction footprint, the Onshore Pipeline contractor monitors the actual ROW width. Despite the presence of extra workspaces at several locations, works remain well within the agreed Project footprint. This is being achieved through continuous monitoring of clearing crews, coupled with toolbox talks and other training. On one occasion, brush clearing was undertaken for a length of 200 metres on an originally agreed alignment that was the subject of a re-route. The activity was stopped and workers directed to the re-route. During their audit, the IESC commended the Onshore Pipeline contractor on footprint management, in particular the narrow ROW at a location known as Heartbreak Hill.

All Project contractors are encouraged to report observations of fauna in Project areas. The Onshore Pipeline contractor observed a Cassowary *Casuarius* sp. on the ROW at Kilometre Point 132 and a snake was observed during topsoil stripping activities at Pinnacle Quarry, Kilometre Point 118. Freshwater Crocodiles *Crocodylus novaeguineae* were also spotted in the vicinity of the pipeline ROW at Kilometre Point 187, while an unidentified species of the Bird-of-Paradise was spotted near tree felling activity in the Lake Kutubu Wildlife Management Area. Meanwhile, a bird was rescued at Gobe Camp 3 and released into the forest.

Marine mammal observations this quarter included three Bottlenose Dolphins *Tursiops truncatus* sighted by the Offshore Pipeline contractor near the jetty trestle.

Contractor takes action to stop hunting and fishing

During this quarter, the LNG Plant and Marine Facilities contractor conducted an awareness campaign reminding workers about the prohibition on hunting and fishing, as well as the collection of flora and fauna, in the LNG plant site.

The bulletin was issued after an illegal crab trap was found in the main sedimentation pond at the site. Mudcrabs and fish were released from the trap and an investigation conducted into the incident.

In addition to the workforce bulletin, the LNG Plant and Marine Facilities contractor has erected a sign at the sedimentation pond and installed awareness posters around the worksite to deter workers from capturing wildlife.

Serah Pyawa, environmental intern, retrieves the illegal trap from the main LNG plant site sedimentation pond

Plate 10.1 – Verifying the ROW width after cutting and grading activities

Plate 10.2 – A snake found at Pinnacle Quarry

Plate 10.3 – The Freshwater Crocodile sighted near Kilometre Point 187

Plate 10.4 – The rescued bird at Gobe Camp 3 prior to release

During an assessment of two pinnacles as potential sources of aggregate near Kilometre Point 118, the presence of bats in one meant that pinnacle was rejected as an option. The other pinnacle was clear of bats and, because of its location on the ROW, will be used to help minimize the Project footprint. Another pre-construction survey of potential extra workspace in the vicinity of the ROW at Kilometre Point 110 identified a cave housing three bats. While the cave is located outside the limits of the ROW, it has the potential to extend below ground towards the ROW, so mitigation measures will be implemented where necessary.

The Project's no hunting, no fishing, and no collection of flora or fauna policy was reiterated on a number of occasions during the quarter. For example, during inductions given to workers prior to the start of work, the Upstream Infrastructure contractor emphasized that native animals such as tree kangaroos and echidnas required protection and were not to be hunted. The LNG Plant and Marine Facilities contractor also conducted an awareness campaign after an illegal crab trap was found in the sedimentation pond. The pond and other wetlands inside the worksite are providing a new habitat for breeding water birds, which were noted on the site during this breeding season.

The LNG Plant and Marine Facilities contractor also raised worker awareness about appropriate behavior related to snake findings at the LNG plant site. In particular, snake sightings are reported so that a snake handler can take identified snakes to the Papua New Guinean public hospital for milking, with the aim of developing anti-venom serums for snakebites.

10.2 Quarantine management

The Project's newly developed quarantine index for non-conformances, near misses and incidents was issued to construction contractors this quarter to assist them with identifying the emergence of any trends. The new index will be added to the Project's Quarantine Management Plan and Quarantine Procedure with definitions for the three levels of non-conformance and for field observations made with regard to documentation deficiencies.

While the volume of inspections continues to be high, there were no significant delays during shipment inspections by Papua New Guinean National Agriculture Quarantine and Inspection Authority (NAQIA) officers this quarter.

10.3 Weed, plant pathogen and pest management

The Project's first annual weed review was completed during this quarter. For further information, refer to *Case Study Four – First weed review finds Project and contractors working well*.

Training for quarantine cadets

The Project is providing specialized training to two NAQIA cadets to enable them to identify and analyze Cinnamon Fungus *Phytophthora cinnamomi*, a soil-borne pathogen that has the potential to attack the roots of plants and trees.

The pathogen can be transported in soil, for example from one garden to another. The Project already conducts soil analysis on worksites to determine if the pathogen is present prior to construction so that it is not inadvertently spread during construction activities.

The NAQIA cadets will undertake their specialized plant pathology, entomology and botany training at the Project's pathology laboratory in Moro in July 2012.

The NAQIA cadets at the Project's pathology laboratory in Moro

Pre-construction surveys in the Omati to Aiio area, encompassing three weed management areas identified by the Onshore Pipeline contractor, noted the presence of six Priority 1 weed species within sites proposed for access roads to the ROW. These weed species are Bamboo Piper *Piper aduncum*, Variable Flatsedge *Cyperus difformis*, Kudzu *Pueraria phasealoides*, Paddle Grass *Ischaemum polystachyum*, Singapore Daisy *Sphagneticola trilobata* and *Hedyotis auricularia*. Management measures defined in the pre-construction survey reports for these species will be implemented.

Foot patrols at Onshore Pipeline contractor worksites also identified a number of priority weed species including Bamboo Piper, Kudzu, Bitter Vine *Mikania micrantha*, Para Grass *Urochloa mutica*, Feathery Pennisetum/Mission Grass *Pennisetum purpureum*, *Iresine* sp. and Silver-Leaved Desmodium *Desmodium uncinatum*. These species were mostly treated through hand pulling and grubbing, while a few were treated with herbicide. Removed weeds were disposed of either by incineration or sun drying on-site. A few individual Priority 1 weeds, previously managed along the Mubi to Kantobo Road, were observed and control measures applied. All sites where weeds were removed will be subject to ongoing inspections, and haul roads within the Lake Kutubu Wildlife Management Area are being monitored for the presence of new priority weed species.

Plate 10.5 – The Priority 1 weed *Iresine* sp. at Kilometre Point 134

A review of the reinstated ROW to assess the level of re-vegetation/natural regeneration between the Kikori River crossing (Kilometre Point 226) and Gobe main line valve (Kilometre Point 192) indicated the predominance of two Priority 2 weeds. Blue-top *Ageratum conizoides* (found at Kilometre Point 221 to 226) and Primrose *Ludwigia* sp. (located between Kilometre Point 200 and 221) constitute 70 percent of the ground cover. These species are annual/ruderal plants and are already dying out at some locations.

Weed management continues at other worksites, including the control of Feathery Pennisettum/Mission Grass and Silver-Leaved Desmodium in the Hides area, Bamboo Piper at the Upstream Infrastructure contractor camp, Guinea Grass *Panicum maximum* at the LNG plant site and various weeds at the Komo Airfield batch plant and the Timalia Quarry.

Additional worker training was also conducted this quarter. For example, the Onshore Pipeline contractor provided training on the management of weeds collected from the ROW and worksites to ensure weed control activities do not help propagate weed species. Toolbox talks on the Project's weeds management philosophy were also given to crews working around the Gobe area, and the Drilling contractor provided weed identification and awareness training for workers prior to beginning site activities.

Following the opening of the permanent Hides Vehicle Washdown Area for the Wellpad Access Road in the first quarter 2012, a second washdown facility was commissioned and in use by the end of the quarter. More than 5,500 washdown certificates have already been issued. At Komo, while construction vehicles usually stay within the worksite, there are some instances where travel between Project sites is necessary. When this is required, the Project's vehicle washdown protocol is followed. This quarter, 12 certificates were issued at the Komo Airfield washdown facility, each covering several vehicles or plant that traveled outside of the worksite.

10.4 Induced access

Induced access continues to be a consideration in the planning and execution of Project activities. Wherever possible, existing access to Project worksites is used.

During this quarter, the Onshore Pipeline contractor opened eight short access roads in the Manu area. These roads reduce traffic through swampy sections of the ROW and provide safe passage for vehicles through particularly steep sections of the ROW.

Each new access road was assessed from an induced access perspective prior to proceeding. Other roads were assessed but rejected due to potential secondary impacts and induced access risk, among other considerations.

Security checkpoints were maintained at main junctions linking onshore pipeline access roads to existing community roads. Monitoring of Project roads to date has shown they are used exclusively by Project-related traffic.

Access control measures in the Homa-Benaria area will include guarded boom gates being installed at Benaria and the proposed Homa Ridge Access Road. The gates will also serve as checkpoints to ensure all vehicles that traverse the Homa-Benaria area have been cleared by the temporary vehicle washdown facilities to be installed at Homa and at Benaria.

At the Wellpad Access Road, the Upstream Infrastructure contractor continues controlling access through the use of worker inductions and identification cards.

10.5 Reinstatement

As part of reinstatement activities, the Upstream Infrastructure contractor is using harvested native seeds for re-vegetation. Casting of locally sourced seed occurred at several locations this quarter, including the Hides Waste Management Facility and Spoil Stockpile Site 1. Seeds of Japanese Millet *Echinochloa* sp. and Carpet Grass *Axonopus compressus* arrived at the Port at Lae for casting on the HGCP batters. This followed a permit from the NAQIA to import seeds of these two species from Australia for use in reinstatement activities. Training on the storage, handling and transport of Japanese Millet was provided to 16 Papua New Guinean workers and four expatriate workers.

Harvesting native seeds for re-vegetation

To improve the success of reinstatement works, the Upstream Infrastructure contractor is harvesting seeds from native plants within their worksite boundaries for use in reinstatement activities.

Suitable native plants are selected based on local knowledge and each seed type harvested is given a number and name to enable effective tracking and monitoring. The seeds are collected by hand and sun dried. Wet seeds, particularly those collected after rain, are dried in an incubator at the contractor's on-site laboratory. The dried seeds are then stored until required for reinstatement works. Identification cards of priority weeds are also used to ensure no priority weeds are harvested.

The collection of local seed is a slow, labor-intensive process and harvested local seed alone cannot feasibly be used to vegetate large surface areas, such as the batters within the HGCP site. Therefore, local seeds are mixed with approved fast growing imported seeds (Japanese Millet and Carpet Grass). The rationale for this approach is that the imported seeds will establish first and, as they die off, the local seeds will establish themselves in the area over the longer term.

Nicola Goldsmith, Environmental Manager, Upstream Infrastructure contractor, casting seed at quarry QA-2

The Upstream Infrastructure contractor also trained 25 Papua New Guinean workers in installing jute matting to help stabilize soils and provide a suitable micro-climate for vegetation growth during reinstatement. Reinstatement monitoring indicates that vegetation regeneration is evident at a number of worksites.

The Onshore Pipeline contractor continues taking care when stripping, storing and segregating topsoil and subsoil as a precursor to successful reinstatement. Topsoil management was found to be challenging at a few locations. For example, along the valley floor between Kilometre Point 118 and 119 where the soil has a heavy clay content and steep slopes occur on both sides of the ROW. The pinnacle terrain between Kilometre Point 115 to 116 is proving challenging as well.

Extra workspace was identified for material storage and felled timber will be placed along the sides of the ROW to reduce the spill of material over the edge of the working corridor.

Meanwhile, the Onshore Pipeline contractor continued reinstatement activities along the ROW. Kaiam Camp 2 and Gobe Camp 3 were also prepared for final reinstatement. Monitoring is focused on final reinstatement and natural regeneration of the ROW.

At Komo Airfield, nearly 10.5 hectares of permanent work areas were reinstated during the quarter. In addition, reinstatement works were conducted on the slopes of Zone E below the stores area and the batter of the Ariako River diversion. Reinstatement was completed at the Southern Diversion Road with considerable progress made on topsoiling, seeding and planting wildlings/seedlings, as well as drainage stabilization activities on the batter slopes and along the road.

As part of the reinstatement works, the Komo Airfield contractor provided additional training on general reinstatement techniques for the 20 staff working on the Southern Diversion Road.

At the Timalia and Komo Main Camp nurseries, the collection of wildlings, soil packing and weeding continued. Training on seed and fertilizer application was also provided to the Timalia nursery team.

10.6 Biodiversity Strategy

The Project continues engaging with key stakeholders about the Offset Program, including the Papua New Guinean Department of Environment and Conservation. Separately, a detailed proposal was received during the quarter to develop a Conservation Capacity Program, which will ensure that professionals engaged in the Biodiversity Offset Delivery Plan are appropriately qualified and experienced.

Discussions also continued with Oil Search Limited regarding further collaboration on the Lake Kutubu Conservation Program.

Plate 10.6 – Reinstated ROW at Kilometre Point 222

Plate 10.7 – Onshore pipeline ROW eight weeks after final reinstatement between Kilometre Point 193 and 226

Plate 10.8 – Natural regeneration on the reinstated ROW in the vicinity of Kilometre Point 190

CASE STUDY FOUR

First weed review finds Project and contractors working well

As part of the Project's Weed Management Strategy, the Project and its contractors aim to avoid introducing new weed species and spreading existing weed during construction activities.

This quarter, the Project's first independent weed review was undertaken by Biotropica Australia Proprietary Limited, a consultancy specializing in tropical ecosystem management. The review evaluated the implementation and effectiveness of the Project's Weed, Plant Pathogen and Pest Management Plan as well as the implementation of contractors' weed management programs.

This involved a review of worksites and activities undertaken by contractors between Omati and Hides (HGCP and associated roads and quarries) and along the Hides Ridge, plus a physical survey of weed distribution and density in relation to baseline information taken during pre-construction surveys.

Review findings

The reviewers found that Project and contractor facilities generally showed compliance with the Project's Weed, Plant Pathogen and Pest Management Plan. High levels of weed hygiene were noted at worksites and there was a strong focus by contractors on achieving on-the-ground outcomes. Most weed control has been done manually and, where herbicides were used, there were no residual impacts.

The review determined that there was a decrease in the abundance of weed species in Project areas overall and a decrease in species diversity in the Hides and Komo areas. This was especially noticeable around the HGCP site where many species are no longer present. While this is partly attributable to some areas being cleared, early intervention by the Upstream Infrastructure contractor to manage Bamboo Piper *Piper aduncum* at the HGCP site was considered significant.

The Hides Vehicle Washdown Area is also proving successful in minimizing weed transmission from vehicles, given that only two weeds were identified north of the washdown area.

However, one new weed species for Papua New Guinea was identified in the Project area during the review – Anglestem Willow Primrose *Ludwigia leptocarpa*. This species had previously been misidentified and it is believed that it was introduced by loggers prior to the start of Project activities. Therefore, the Project was considered to be compliant with International Finance Corporation Performance Standard 6 relating to the introduction of new alien species.

Meanwhile, extensions to the range of weed species were found to be minimal. Biophysical boundaries, such as changes in drainage, elevation and the nature of the forest cover between areas of major disturbance, have restricted weed movement and acted as ecological breaks.

The priority one species, Singapore Daisy *Sphagneticola trilobata*, showed a small range extension to the lowlands, and Siam Weed *Chromolaena odorata* extended from known locations in Gobe to access roads between Kaiam and Omati. Control of these species was conducted and monitoring will continue.

Two weed species of note, previously unrecorded in the Upstream area (although present in Papua New Guinea), were found during the review: Giant Sensitive Plant *Mimosa diplotricha var. diplotricha* and Fountain Grass *Cenchrus macrostachys*. The thorn-covered Giant Sensitive Plant was recorded by the review team in two locations in Gobe Camp 3 and near the ROW and adjacent to the Kaiam to Gobe Road. It is possible that the plant was introduced by the Project or it was pre-existing and was misidentified or unidentified in the baseline pre-construction surveys. Regardless, the Onshore Pipeline contractor has taken measures to control the Giant Sensitive Plant at the two locations it was found.

The priority two species, Fountain Grass, was noted in the Gobe/Samberigi area in 2005. It was not noted during the pre-construction survey (although it may have been misidentified or unidentified) and it is now established at limited locations between the Mubi/Tamadigi area and Omati area. This species is almost certain to have originated from local cultivation and spread onto Project worksites, via construction machinery or human traffic. This plant will continue to be monitored.

Project weed classification

Each weed species is assigned a priority status for management. Priority one species require diligent control and monitoring, Priority two species require monitoring to ensure they do not become problematic, and Priority three species are relatively benign and do not require any intervention or monitoring. The review noted that the Project and its contractors are successfully recognizing and prioritizing species.

CASE STUDY FOUR

First weed review finds Project and contractors working well

A number of locations outside the surveyed Project footprint were identified as point sources for weeds; for example, former or active logging areas and their associated campsites and log dumps, and indigenous gardens and village access roads and tracks. A challenge is ensuring that construction plant and equipment stays within surveyed areas and away from sites with unknown weed risks.

The review identified a need to improve the consistency of species identification – especially where there are multiple species in one genus – recording, monitoring and control approaches across the Project and to increase awareness and expertise in weed management by Project staff and contractors. This is being addressed through the greater use of identification resources already in place and increased skills training for workers.

The review concluded that the Project's weed management emphasis should remain on containing weeds within their current extent and monitoring sites to identify and control new outbreaks.

It made 15 recommendations centered on controlling weeds noted in the review, re-surveying selected species at particular sites, controlling movements of construction machinery, improving documentation, raising awareness for priority one weeds and revising the Weed, Plant Pathogen and Pest Management Plan. The Project is now implementing these recommendations.

Bamboo Piper *Piper aduncum*

Siam Weed *Chromolaena odorata*

Mimosa sp.

11 Resource Management

The Project recognizes the social, economic and cultural value of natural resources to the people of Papua New Guinea and aims to use all resources such as water, timber, quarry materials and soils sustainably.

11.1 Water management

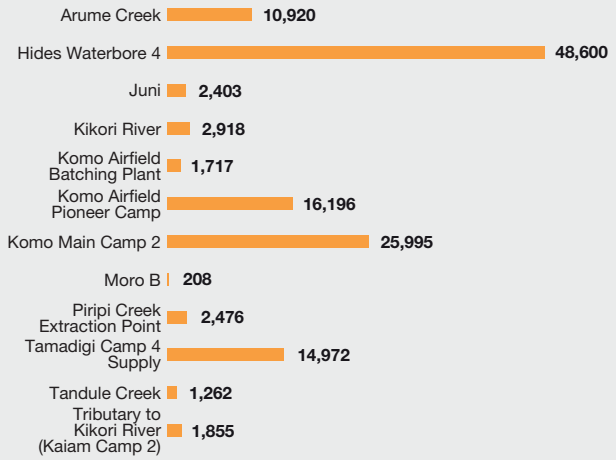
11.1.1 Usage

A total volume of 142,194 kilolitres of freshwater and 460,811 kilolitres of seawater were extracted for drinking, domestic camp needs, dust suppression and construction-related activities across the Project during this quarter. At Wellpad B, an additional Project-dedicated groundwater source was installed as a way of decreasing the Project's reliance on surface waters and minimizing impact on other water users.

As a result of growing construction activity in the Hides area in particular, total water use increased as expected across the Project, however, all water extraction volumes remained within the annual limit set in the Project Environment Permit and no additional water extraction permits were obtained.

The volume of water used by each extraction source is shown in Figure 11.1 and a breakdown of water used by water type is shown in Figure 11.2.

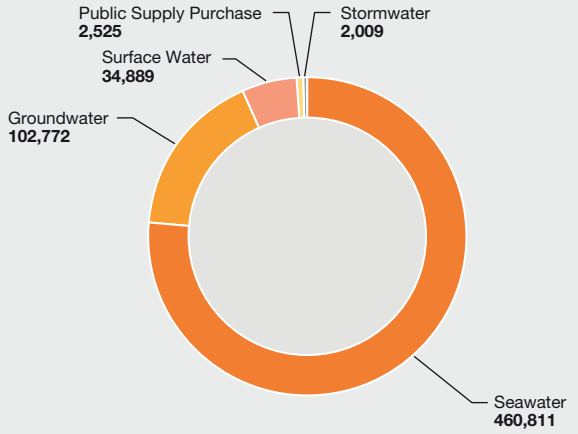
Figure 11.1 – Volume (in kilolitres) of water used during the second quarter by extraction source[6]



NOTE: Seawater, stormwater and purchased water are not included in this Figure.

Water usage adjustments may be reported by contractors after the Report has been released, and as such volumes may be refined between one Report and the next.

Figure 11.2 – Volume (in kilolitres) of water used during the second quarter by water type



11.1.2 Quality

The quality of water in water bodies surrounding the Project is monitored to detect any changes that may be attributable to Project activities or that may impact the surrounding environment. Sampling of surface waters, groundwater and seawater across the Project timeline, including pre-construction baselines and ongoing construction measurements, will extend into post-construction monitoring.

During this quarter, the Project started developing a central database for water quality monitoring results. When completed, the database will consist of three modules: baseline water quality data for surface water and groundwater; monthly wastewater quality monitoring data; and periodic surface water quality monitoring. The database will allow the comparison of results to baseline readings so mitigation measures can be taken if needed.

This quarter, the Field Environmental team received new water quality equipment including incubators and coliform plates. These allow the Field Environmental Advisors to quickly and accurately quantify the number of total and fecal coliform in water sources without sending to a laboratory. The team can now also quantify chemical oxygen demand.

Surface water sampling continued throughout Project worksites during the quarter, including at the LNG plant site where elevated levels of turbidity and alkalinity were found in stormwater collection ponds.

The higher turbidity levels were caused by high rainfall events just prior to monitoring activities. Slightly alkaline readings were the result of coral shells being used in the walls of the stormwater ponds. Ongoing monitoring will track these levels.

Leachate monitoring also took place at the LNG plant site's construction landfill this quarter. Water samples taken for laboratory analysis of fecal coliform (*Escherichia coli*) and phenol contents, showed elevated levels of both. An investigation is underway to establish the potential cause of the slight increase in levels, which could be the result of feces from birds (crows, falcons and eagles) that scavenge in the open landfill cells. Additional monitoring is underway, including a parallel water analysis planned for after heavy rainfall.

6 Water use for the LNG plant site is not shown in this Figure as the site's water usage is from desalinated seawater.

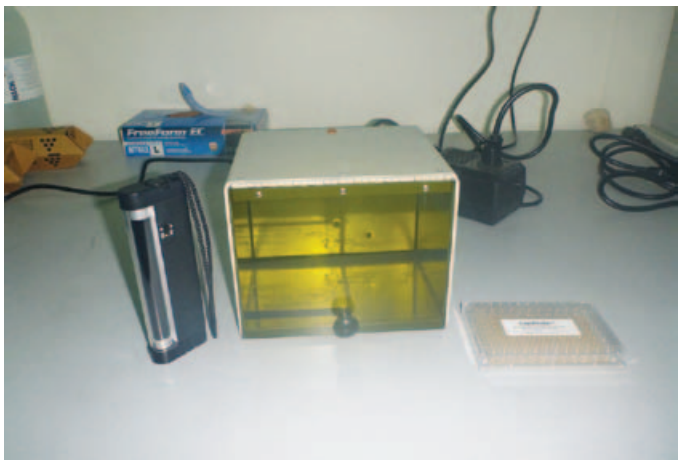


Plate 11.1 – New incubator equipment used in testing for *Escherichia coli* on-site

In addition, an external consultant conducted annual groundwater sampling from six monitoring wells surrounding the LNG plant's construction landfill. Comparisons with baseline data showed slight fluctuations in values thought to be attributable to the differences in sampling in wet and dry seasons. A repeat sampling event is planned to obtain further data to clarify the results.

In preparation for drilling activities, the Drilling contractor conducted a baseline surface water sampling program in the Hides Ridge area this quarter to allow for future water quality comparisons.

This quarter, most of the Onshore Pipeline contractor's water sampling program occurred between Mubi and Tamadigi where fewer streams are traversed by the pipeline than previous sections. Baseline water sampling was conducted of Hegero Creek given the proximity of quarry Kilometre Point 76 and the Hegero Camp to the watercourse used by the community. Routine monitoring and inspections of pH and turbidity of streams traversing the ROW took place between Tamadigi and Aiio. An increase in turbidity levels was observed in many streams traversing this section of the pipeline due to continued flash flooding and soil erosion caused by heavy rain.

Planning for future hydrotest programs progressed, with a Hydrotest Disposal Plan for the LNG tanks and other miscellaneous tanks prepared and ready for submission to the Papua New Guinean Department of Environment and Conservation. At the HGCP site, some minor pressure testing occurred for the camp water supply and the main wastewater treatment plant which are both under construction. Discharge water complied with testing procedure discharge requirements.

Meanwhile, the water taskforce continues collaborating with communities in the Project impact area to address water-related grievances and potential construction impacts to watercourses. As part of this work, Project representatives, Village Liaison Officers and Clan leaders are investigating water-related grievances together. Investigations typically include water quality analysis and comparison with historic data, as well as community enquiries to determine what the water source is used for, such as drinking, bathing, cooking or gardening. Education is also provided to local communities on minimizing waste disposal in watercourses to improve the water quality in streams. Findings and recommendations from these investigations are provided to the water taskforce coordinator so reported grievances may be closed.

11.2 Raw materials

The Project aims to avoid opening new quarries wherever possible, preferring to reopen previously used quarries or crush rock pinnacles found within the ROW. In accordance with this approach, no new quarries were opened during the quarter.

At the HGCP site, aggregate material was primarily used in the base of the firewater tank and for building work pads at the industrial warehouse area. All aggregate materials were sourced from Project-approved facilities.

Table 11.1 shows the volume of quarry material extracted by the end of the quarter.

Table 11.1 – Quarries in use and extracted volumes during the second quarter

Area/quarry name	Volumes extracted (cubic metres)
LNG plant site (2 suppliers)	159,848
Hides (4 quarries)	296,004
Komo (1 quarry)	55,741
Onshore Pipeline (7 quarries/sources)	199,560

Only small volumes of timber were required for Project construction activities, with 51 cubic metres purchased during this quarter. Raw timber is sourced from timber cleared from the Project area or procured through Project-approved sustainable sources. For example, the Onshore Pipeline contractor continues to reuse logs cleared from the ROW for timber requirements. Excess ROW timber is made available for local community use.

11.3 Erosion and sediment control

Installing and maintaining erosion and sediment controls continues across Project worksites. At the HGCP site, ensuring the site erosion and sediment control register and relevant site control plans are up-to-date is a priority. Temporary erosion and sediment control measures within the Hides Gas Conditioning Plant and Hides Wellpads contactor's areas were inspected and desilted where required during the quarter.

A review of the reinstated ROW between the Kikori River crossing (Kilometre Point 226) and Gobe main line valve (Kilometre Point 192) indicated that erosion control measures were working effectively, although some further improvements were identified and implemented.

In particular, a series of barriers (silt fences, check dams, rock sausages filters) were installed along a channel where a bentonite (fine clay) break-out occurred during horizontal directional drilling operations at the Wah River. The leak was contained, pumped back into the mud pit and reused in drilling operations. Residual bentonite and cuttings from the drilling operations were worked into the limestone platform at the drill rig site.

Plate 11.2 – Permanent erosion control structures are tailored to individual site requirements

The Upstream Infrastructure contractor received several positive field observations around the HGCP site. The observations noted the contractor had responded well to community water quality grievances by controlling erosion and sediment run-off and improving reinstatement efforts. Erosion and sediment training was also conducted for 110 Papua New Guinean workers, 25 of whom completed specialized jute matting installation training as well.

Plate 11.3 – Upstream Infrastructure erosion and sediment control training

At the Komo Airfield, a team of Papua New Guinean workers is achieving success having constructed multiple erosion and sediment control devices from locally sourced, natural materials rather than the typical manufactured cloth and star pickets. An additional benefit is that these structures are not targeted for theft.

Plate 11.4 – Erosion control measures showing rock check, jute matting and sediment retention dam

Plate 11.5 – Silt fence made from site-sourced vegetation at the Komo Airfield

During the quarter, the Drilling contractor directed all discharges from Wellpad B to the sinkhole adjacent to the Wellpad, including waters from the drilling of the water supply bore. Temporary containment reduces turbidity and sedimentation because it gives the water time to settle before flowing out through underground seepage.

A review of land stabilization efforts at Wellpad B, Hides Quarry 1 and Hides Quarry 3 was also undertaken involving the Hides Gas Conditioning Plant and Hides Wellpads contractor, Upstream Infrastructure contractor and Drilling contractor. By working together, these contractor teams aim to identify ways to improve measures to ensure soil stability. The review found that adequate site drainage controls and structures were installed to manage site stormwater and reduce the potential effects of erosion and sedimentation.

11.4 Acid sulfate soils

Deep excavation works were undertaken at the LNG plant site on the west side of the LNG tank area this quarter for firewater line installation. There were no significant pH changes measured during the dewatering process. On assessing previous monitoring results for the Omati River landfall and the unlikelihood of acid sulfate soils developing, no further testing is planned.

12 Cultural Heritage

Respect for Papua New Guinea's cultural heritage and the history of communities located in the Project impact area underlies all Project activities. Pre-construction surveys ensure known sites are either subject to salvage activities or protected from disturbance by construction activities and chance finds are managed in accordance with a protocol agreed with the Papua New Guinean Government and in close communication with local communities.

During this quarter, the Project's archaeologist trained the Onshore Pipeline contractor's archaeologist on the Project's Chance Finds Protocol. Topics included:

- Identifying, assessing and documenting chance finds.
- Labeling, packaging and preserving archaeological artifacts.
- The process for transferring chance finds.
- The importance of preserving and documenting all cultural sites in accordance with any mitigation measures identified during pre-construction surveys.

In addition, the Onshore Pipeline contractor provided cultural heritage training to tree felling crews and ROW clearing and grading crews as part of daily toolbox talks. The training covered the Chance Finds Protocol, archaeological artifacts identification, levels of significance and the Project's artifacts handling procedure.

Improvements were also made to the Project's central cultural heritage tracking register during the quarter. The Project archaeologist uses this register when visiting worksites to verify that mitigation measures are being implemented at cultural heritage sites.

12.1 Pre-construction surveys

Prior to construction, surveys identify cultural heritage sites requiring preservation, or mitigation measures developed in partnership with local landowners. Archaeologists mark out sites to be avoided before any site construction starts.

During this quarter, a cultural heritage survey was conducted along a planned re-alignment of the onshore pipeline ROW between Kilometre Point 96.6 and Kilometre Point 97.6. Monitoring and inspection of demarcated cultural heritage sites in close proximity to the onshore pipeline ROW also continued between Kilometre Point 104 and Kilometre Point 153.

The sites demarcated and monitored for disturbance are listed in Table 12.1.

Table 12.1 – Cultural heritage sites monitored during the second quarter

Location	Site description
Kilometre Point 129	'*Putape Aina 2'* ossuary.
Kilometre Point 130	Ossuary.
Kilometre Point 142	Sleeping cave.
Kilometre Point 143	'*Nigira*' spirit pool/lake; and '*Kekenoparti cave*'.
Kilometre Point 149	Stone flakes.
Kilometre Point 144	Rockshelter with human remains.
Kilometre Point 150	'*Karisinana*' ancestral village.
Kilometre Point 153	'*Baiwara'araumarisa*'/'*baiwara'araumahaii*' healing pool oral tradition site; and '*Mafeka 2*' water filled doline oral tradition site.
Kilometre Point 154	'*Mafeka 1*' and '*Mafeka 3*' water filled doline oral tradition sites.
Kilometre Point 155	'*Awa*' cave inhabited by the spirit '*Daso*'; '*Bono*' oral tradition site (three palms belonging to the spirit '*Daso*'); and '*Mapiya*' ephemeral stream associated with the spirit '*Daso*'.
Kilometre Point 158.4	'*Marupe hai*' spirit water.
Kilometre Point 24	Former '*malihama*' (traditional ritual dance ground).

12.2 Salvage excavations

No salvage excavations were undertaken during this quarter.

12.3 Incidents of disturbance to known cultural heritage sites

No incidents of Project-related disturbance to known cultural heritage sites occurred during this quarter.

12.4 Chance finds

Cultural heritage inspections for chance finds continued at all worksites and remained a key activity along the onshore pipeline ROW due to ground-breaking activity.

Chance finds recorded this quarter are shown in Table 12.2.

Table 12.2 – Chance finds during the second quarter

Location of find	Type of find
Komo Airfield	Chert flake
	Spirit stone ('*Liru-kui*')
	Tanged blade
Onshore Pipeline ROW	Former ossuary
	Sleeping cave
	Labor cave
	Sacred water well/lake (known locally as '*Ipa Angipu*')
	Ritual site
	Waisted stone axe
HGCP	Waisted stone blade
	Temporary settlement area for hunting purposes

Plate 12.1 – Awareness signs to prevent disturbance at a newly recorded sleeping cave

Plate 12.2 – Waisted stone blade found at Hides

Plate 12.3 – Ritual site found at Kilometre Point 24

A spirit stone, '*Liru-kui*', which literally translates as 'bones of the spirit', was found on a soil stockpile at the Komo Airfield site. While the spherical stone showed indications of polishing during its use, the stone was considered to be long discarded and it was determined that the sacred spirit would have left the stone, therefore it was no longer deemed to be of spiritual significance.

Plate 12.4 – Spirit stone '*Liru-kui*' found at Komo Airfield

A pre-construction survey of an area of potential extra workspace for temporary spoil storage revealed the presence of two caves. One was a sleeping cave, which was once used during hunting expeditions or travel around the area, but is no longer in use. The other cave was once used as a labor room for women in the area. Both sites were demarcated to avoid disturbance and an alternative spoil storage area found.

A waisted stone blade found at Kilometre Point 102 on the onshore pipeline ROW was considered to be of medium significance. It dates from the late Pleistocene period and reflects the nomadic lifestyle of this region.

Plate 12.5 – View of the labor cave near Kilometre Point 110

Plate 12.6 – Waisted stone axe found on the onshore pipeline ROW

In the Hides area, the presence of three chert flakes indicated a temporary hunting camp. According to local knowledge, such flakes are rarely found within the Hides Ridge area, a known hunting area, and are more common in the area of the HGCP where the population is concentrated. This site was classified as being of medium cultural heritage significance.

In accordance with Project protocols, all artifacts discovered by contractors this quarter will be handed to the Project to pass on to the Papua New Guinea National Museum and Arts Gallery.

13 Stakeholder Engagement

The Project and its contractors are committed to engaging with Papua New Guinean communities to develop lasting positive relationships based on trust, mutual understanding and collaboration.

13.1 Government

The Project liaises regularly with all levels of government and with Papua New Guinean communities to keep the Government and stakeholders informed of Project activities as construction progresses.

13.1.1 People processes

Papua New Guinea's Department of Labour and Industrial Relations and Immigration Services continue approving work permits and visas within the agreed turnaround time of approximately ten working days. The Department of Labour and Industrial Relations has also granted more than 1,700 red/orange job exemptions to enable the rapid deployment of workers to all Project sites.

13.1.2 Materials and tax

The Project is meeting regularly with the Papua New Guinean Customs Services on contractor performance and new procedures for efficient cargo clearance. In addition, the Project is providing support to the NAQIA to improve quarantine procedures for logistics coordinators.

13.1.3 Infrastructure and Government support

This quarter, Esso Highlands Limited started funding a Papua New Guinean Road Safety Awareness campaign intended to improve road safety along the Highlands Highway as detailed in *Case Study Five – Project boost to Highlands road safety awareness*.

Upgrade and repair works are continuing along the Highlands Highway, with the Project providing ongoing support to the Papua New Guinean Department of Works so that road conditions can be improved for the benefit of the general public as well as Project contractors.

The Project has also provided funding for the Department of Works to replace the Alua River Bridge located near Tari in the Hela Province. The Project assisted with engineering design for the bridge installation and arranged on-site installation training for Department of Works personnel. To date, the Project has provided 16 bridges to the Department of Works for the Highlands Highway between Mendi in the Southern Highlands and Hides in the Hela Province.

13.1.4 Advocacy

In collaboration with the Papua New Guinean Department of Foreign Affairs, the Project provided a construction update and LNG plant site tour this quarter to 15 representatives from foreign missions in Papua New Guinea, including ten Heads of Mission. The group included: ambassadors from the United States of America, Indonesia, France and the Republic of Korea; the High Commissioners of India, Malaysia and Fiji; the deputies of Japan, Solomon Islands and China; as well as the Resident Coordinator of the United Nations Development Programme.

In addition, six advocacy workshops were conducted with provincial government representatives along the Northern Logistics Route from Lae to Tari in the Highlands. Workshops were also held with provincial governments in Project impact areas in the National Capital District, Central Province and Gulf Province.

Plate 13.1 – Project personnel and representatives from foreign missions touring the LNG plant site

13.1.5 Benefits assurance delivery

The Papua New Guinean Government has paid Infrastructure Development Grant funds into the Hela Transitional Authority trust account. This Authority is responsible for administrating the funds in the Hela Province.

During this quarter, the Papua New Guinean Department of Petroleum and Energy sent field officers on follow-up visits to the Upstream South (Gobe and Kantobo) and Upstream North areas to manage issues and grievances requiring Government action. The Project continues meeting regularly with the Papua New Guinean Department of Petroleum and Energy, helping address Project-related issues as they arise.

13.2 Communities

During this quarter the Project focused on providing timely information and responding to community concerns in the Project impact area to help strengthen the Project's relationship with communities.

13.2.1 Engagement activities

The Socioeconomic team conducted 53 formal engagements with over 336 participants, representing 15 different communities during this quarter. Another 49 informal engagements were held with 29 Project communities. To date, the Project has conducted more than 650 formal engagements reaching almost 28,000 participants, along with over 1,170 informal engagements.

With construction activities progressing in the Upstream area and at the LNG plant site, meetings cover topics such as: Project updates, drilling activities, education on fiber optics, the Juni Construction Training Facility trainee selection process, pedestrian safety, and safety along the pipeline ROW. Formal and informal community engagements are complemented by newsletters and drama performances reinforcing important messages.

In preparation for drilling activities, this quarter technical specialists provided training about the drilling program to Project teams involved in community liaison activities. The interactive sessions involved demonstrations of drilling foam to be used in drilling activities, along with information about the harmless properties of the foam and how it would be managed in the event of a spill. These awareness sessions will be delivered to the broader community during the third quarter 2012.

Plate 13.2 – Project community liaison teams learn about the drilling program

Hides and Komo

Community engagement activity increased in the Hides and Komo areas this quarter coinciding with mobilization of the Drilling team, continuing construction of the HGCP and Komo Airfield and ongoing training at the Juni Construction Training Facility.

With drilling activities scheduled to commence in the third quarter 2012, and vehicle use increasing, community safety and road and pedestrian safety awareness were key communication topics. For example, refresher sessions of the Safety Awareness Program were delivered to schools emphasizing key pedestrian safety messages, with one of the schools voluntarily appointing Safety Champions. Informal traffic and road awareness and pedestrian safety engagements were also conducted with community members in the Hides and Komo areas.

Meanwhile, distribution of the Toea series of books and activity packs is allowing the Socioeconomic team to reinforce key hygiene and safety messages with school children.

Plate 13.3 – Students from Mbelopa Elementary School reading the Toea books

Pipeline (north and south)

The Socioeconomic team continues engaging with communities located in areas where the Project is preparing for onshore pipeline work. Information provided covers safe behavior, particularly around the ROW, the nature and expected duration of the work, the grievance process, general Project updates, and details about the Project's recruitment processes.

Highlands Highway team gets things moving

A new Highlands Highway Area team is playing an important role in helping improve access and traffic flow along the Highlands Highway.

The Highway is a critical transport route for both the Project and local communities but it is often closed. For example, due to landslips, civil unrest, damage to the road and illegal toll collecting.

The Project's Highlands Highway Area team, formed in November 2011, is improving Highway access for Project convoys and local communities by identifying, reporting and monitoring issues as they arise. The multi-disciplinary team includes external community and business stakeholders, such as community leaders who have been recruited as Village Liaison Officers and provide information and recommendations to Highlands Highway Area team Community Affairs Officers.

Senior Project Manager, Mark Hackney, said the Highlands Highway Area team's aim is to keep the Highway open and safe for communities, while allowing the Project to safely transport 10,000 truckloads of materials from Lae to Hides.

"The Highlands Highway Area team consists of individuals with many years of experience working together with communities to identify and effectively manage problems that impact the communities," Mr. Hackney said.

"The team is building relationships with Papua New Guinean community leaders, District and Provincial administrators, law enforcement bodies and individuals to document and capture legacy issues along the Highlands Highway. These activities are critical to keeping the highway open to the benefit of all," he said.

Plate 13.4 – Community engagement at Benaria with the women of Lau Village

In the Omati area, engagements this quarter included updates about the Offshore Pipeline contractor's activities, as well as awareness raising about fiber optic cable installation. Drama was used to communicate safety and cultural awareness messaging to both the Project workforce and the communities, and messaging about the Project's grievance process was also reinforced with the communities.

LNG plant site

Safe access for communities around the LNG plant site remains the focus of community engagements in this area, particularly during the Offshore Pipeline contractor's pre-commissioning activities. The Socioeconomic team is using formal and informal engagements, supported by newsletters, brochures and drama performances to communicate and reinforce safety messages. Thirty-seven formal engagements involving more than 3,700 participants were conducted with the LNG plant site communities this quarter.

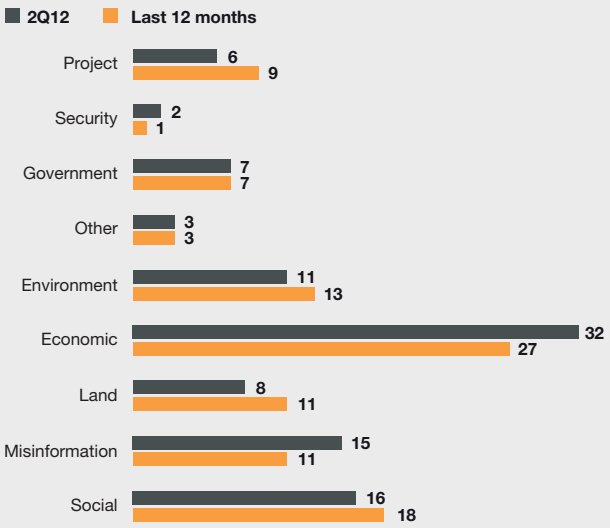
Issues identification

For the past year, economic concerns have accounted for most of the Project-related issues raised. As shown in Figure 13.1, 32 percent of all issues raised during this quarter related to economic concerns, which is consistent with results recorded during the past year.

13.2.2 Media

During this quarter, the Project launched a monthly newspaper column from Esso Highlands Limited Managing Director, Peter Graham. The column, entitled '*Yumi Stori long PNG LNG*' (Let's have a chat about PNG LNG), provides regular updates about the Project's construction progress and community programs. The first column was published in the two daily newspapers, *The National* and the *Post Courier*, and was also translated into Tok Pisin for the *Wantok Nius*.

Figure 13.1 – Percentage of issues received by issue category



The Project also re-launched its monthly programs on the FM100 radio station, with Esso Highlands Limited Project Executive, Decie Autin speaking with popular talkback show presenter Roger Hau'ofa about the status of Project construction.

A seven-day visit by Papua New Guinea's national rugby league team, the Kumuls, to onshore pipeline worksites attracted extensive media coverage this quarter, with national newspapers covering the tour of the pipeline.

Meanwhile, following on from the success of a workshop in March 2012, a second media workshop was held with local journalists. These workshops provide background information on the Project, helping journalists learn more about the oil and gas industry and the latest Project developments.

In addition, the Project's ninth PNG LNG Quarterly Environmental and Social Report covering activity during January to March 2012 was published on the Project website and in hard copy for distribution to a wide network of stakeholders.

Read the Quarterly Environmental and Social Report series at
www.pnglng.com

The Executive Summary of the Report was distributed in Tok Pisin and English through a suite of national papers including the *Post Courier, The National, Pacific Business Review, Wantok Nius,* and the *Sunday Chronicle*.

CASE STUDY FIVE

Project boost to Highlands road safety awareness

A new Papua New Guinean Road Safety Awareness campaign is helping to boost road safety along the Highlands Highway.

In cooperation with the Government and managed by the National Road Safety Council (NRSC), Esso Highlands Limited is funding the campaign, which will educate communities on road safety issues such as speeding, driving under the influence of alcohol, unsafe pedestrian behavior, and overloading vehicles with passengers.

Acting Executive Director for the NRSC, Nelson Terema, said the campaign was the first Papua New Guinean road safety initiative for the Highlands.

"Typically, the police report that between 200 and 300 people each year die as a result of a road traffic accident in Papua New Guinea. In addition, thousands more get injured, potentially leading to disability and/or severe pain and suffering. Twenty percent of all the road deaths involved children aged 15 years or younger. This percentage increases to 37 percent when dealing with pedestrian fatalities only, with the majority falling in a range between 6 and 15 years of age," Mr. Terema said.

"This campaign is making a difference by making people, and particularly children, more aware of the potential dangers whilst using the road and appropriate safer ways to avoid accidents," he said.

The Road Safety Awareness campaign involves NRSC representatives visiting schools and villages between Chimbu and Hides to conduct seminars and engage with local communities on the importance of road safety.

During this quarter, the campaign covered more than 48 locations along the Highlands Highway, visiting 13 schools, 27 villages and eight main markets within a two-week period.

In that time, NRSC representatives distributed 8,400 educational posters in both English and Tok Pisin and reached an estimated 15,000 people.

Mark Hackney, Senior Project Manager, Esso Highlands Limited is joined by Nelson Terema, Acting Executive Director, NRSC

14 Acronyms

CLTS	Community-Led Total Sanitation
ESMP	Environmental and Social Management Plan
GWIM	Global Women in Management
HGCP	Hides Gas Conditioning Plant
HIV	Human Immunodeficiency Virus
IESC	Lender Group's Independent Environmental and Social Consultant
IMR	Papua New Guinea Institute of Medical Research
Lanco(s)	Landowner Company (Companies)
LNG	Liquefied Natural Gas
NAQIA	Papua New Guinean National Agriculture Quarantine and Inspection Authority
NRSC	National Road Safety Council
PNG	Papua New Guinea
PSI	Population Services International
ROW	Right of Way
SSHE	Safety, Security, Health and Environment
WASH	Water, Sanitation and Hygiene

APPENDIX 1 – Project Contractors and Work Scopes

Table A1.1 – Summary of contractors and work scopes

Contract	Description of work scope
Upstream Infrastructure Clough Curtain Brothers Joint Venture	• Infrastructure upgrades supporting main construction activities in the Gulf Province and Southern Highlands Province. • Camps for Esso Highlands Limited and to support construction activities. • Construction of a landfill site at Hides. • Bulk earthworks for the HGCP and wellpads.
LNG Plant Early Works Curtain Brothers Papua New Guinea Limited	• Upgrade of existing road from Motukea Island to LNG plant site. • New Bypass Road (re-routing of existing public road, which transects with the LNG plant site).
Telecommunications TransTel Engineering	• Installation of a telecommunications system to support construction and operations.
Offshore Pipeline Saipem	• Construction and installation of the offshore pipeline from Omati River landfall to LNG Plant landfall site. • Pipeline tie-in at Omati River landfall and shore crossing at the LNG Plant landfall site. • Installation of near-shore fiber optic cable in the Omati area.
Offshore Fiber Optic Cable Alcatel	• Installation of the offshore fiber optic cable from the Omati delta to the LNG Plant landfall.
LNG Plant and Marine Facilities Chiyoda and JGC	• LNG facility engineering and construction, including LNG process trains, condensate storage tanks, LNG storage tanks, utilities, permanent accommodations, heliport, and telecommunications. • Marine facilities including the jetty and LNG/condensate export berths.
Hides Gas Conditioning Plant and Hides Wellpads CBI Clough Joint Venture	• Engineering and construction of the HGCP processing facilities and associated wellpads, including permanent accommodations and maintenance facilities.
Onshore Pipeline SpieCapag	• Installation of the onshore gas and condensate pipelines, and associated valve and metering stations. • Installation of the pipelines for the Hides gathering system including flowlines, spineline, utility lines, and associated power and telecommunications cables.
Komo Airfield McConnell Dowell and Consolidated Contractor Group	• Airfield and supporting infrastructure.
Associated Gas Development Various	• Upgrades and modifications to Kutubu Central Processing Facility and Gobe Production Facility including gas dehydration, metering, and condensate handling.
Nabors Drilling International Limited	• Drill and complete 12 new wells and execute two workovers.
Permanent Office and Housing Company (to be determined)	• Construction of office accommodation and housing to support the operation of the facilities.

Esso Highlands Limited acknowledges the aforementioned contractors for their respective contributions to developing this PNG LNG Quarterly Environmental and Social Report.

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