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PERU LNG
Independent Environmental and Social Monitoring – IESM
July 10-11 / 2009 Monitoring Mission

LNG Plant and Marine Facilities - Final Report

August, 2009

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1.0
Introduction

This Report refers to the IESM Monitoring Mission, conducted at the LNG Plant and Marine Facilities, on July 10 and 11, 2009.

The scope of inspection included the LNG Plant and Marine Facilities at Melchorita, as well as the Quarry and access road, as detailed in Section 4.0 herein. As noted, inspection took place at construction fronts where the most intense activity was ongoing and on those that had been the object of previous IESM Team recommendations.

IFI representatives participating in the Mission included:

Elizabeth Brito – Environmental Specialist - IDB
Maria da Cunha – Social Specialist - IDB
Leyla Day –Social Specialist - IFC

JGP's monitoring team included:

Ana Maria Iversson	Main Environmental and Social Specialist
Gustavo Acaccio	Ecologist – Biodiversity Specialist
Humberto Vera	Local Environmental and Health and Safety Specialist
Guillermo Salas	Local Social Specialist

Prior to the IESM Mission, PERU LNG issued, in April 2009, its Environmental, Social and Health and Safety Report corresponding to Q1-2009.

Further to this report, several other documents were reviewed by the IESM Team, as delivered previously or after the mission upon IESM Team member's requests. **Annex 01** includes a complete list of documents reviewed in preparation of this Monitoring Report.

Furthermore, it is important to mention that whereas the cut-off date of PERU LNG's reporting prior to the mission is March 31, 2009, information reported herein, when referred to activities conducted during the mission, reflect the situation on July 10, 2009.

2.0
List of Monitoring Activities

Activities during the Mission included:

Friday – 10 July, 2009:

- Trip from Lima to LNG Plant.
- Presentation and discussion with PERU LNG on safety indicators and review of actions taken on April IESM Recommendations on Plant and Marine Facilities.
- E&S Inspection of construction fronts: Utilities area, Main Train area, LNG tanks, BOG area, sleeper-way between Plant and Marine Terminal, COSAPI Camp, effluent holding pools, and CB&I´s fuel storage and supply station.

Saturday – 11 July, 2009:

- Quarry inspection: Stabilization and water drainage works at surplus material deposit, as well as at current levels of quarry exploitation.
- Trestle inspection, including the RLOF breakwater.
- Closure meeting.

3.0
Construction Summary

3.1 LNG Plant

During inspections, intense activity was under way at the LNG plant's premises, including excavation of trenches for underground utilities, concrete foundations, piping and steel structure assembly, electrical installations, process equipment assembly and painting. Electrical circuit testing was also taking place. It was reported that pressure testing of process equipment and piping would begin shortly.

In the utilities area, electrical systems and instrumentation for the gas turbines and air compressors were being installed.

Installation of firefighting equipment and water spray systems were still under way.

In the Main Train and BOG areas, piping and instrumentation and electrical installations were the main activities.

One of the LNG tanks had already undergone hydrostatic tests with seawater and discharge was being completed during the mission. Hydrostatic tests for the second LNG tank were expected to take place soon. Intense activity was under way on both tank roofs, with the installation of external structures such as guard-rails and water spray systems.

Installation of piping and water spray systems was also ongoing at the propane tanks.

Piping installation between the Plant and the Marine Terminal are in progress. At the lower part of the sleeper-way, foundations works were under way.

The Reverse Osmosis (RO) treatment plant, which was in operation during Q1 2009, was not operational during the mission due to the fact that too much suspended sand was being drawn in by the seawater extraction system and modifications were in progress. While the improvements in the seawater extraction system are taking place, water extracted from Falcone well in Chincha is replacing the water to be produced by the Reverse Osmosis treatment plant.

Work was also in progress at the permanent community, as well as in other permanent warehouse and maintenance shop buildings.

3.2 Marine Facilities

During the mission, main breakwater construction was under way and the provisional trestle was in use. The "Le Guerrier" vessel was no longer in use for rock-loading operations and had already left the project.

Mooring dolphin installation was ongoing, with piling in progress. However, installation of the mooring structures had not yet begun.

Due to strong sea conditions coupled with the incomplete breakwater, partial sedimentation of the navigation channel has occurred and hence dredging is expected to continue until end of August.

3.3 Quarry and Access Road

Quarry exploitation is now at levels 990, 1.000 and 1.010, and activities are expected to conclude by the end of July 2009. During the mission, rock types A-1, A-2 and C were being produced.

PERU LNG also informed that quarry decommissioning activities have been initiated at the rock-screening decks and at the surplus material deposits. During the inspection of the surplus material deposits, earth movement and slope shaping were complete, and the rainwater drainage channels were nearing completion.

PERU LNG informed that the quarry blasting front has been stabilized and that control "prisms" were installed for future slope monitoring through topographic measuring.

In the future, when the quarry is decommissioned, the access roads to each of the quarry exploitation levels will be blocked with rocks, in order to avoid vehicle circulation, limiting access to pedestrians engaged in monitoring activities.

As soon as quarry exploitation is concluded, decommissioning and restoration of areas used for buildings and equipment will begin.

The access road to the quarry was found to be in good condition in spite of intense use by trucks transportation rocks to the breakwater.

4.0
Construction-Related Performance

Inspections in construction work fronts at the LNG Plant emphasized the following areas:

- Utility sector (electricity and compressed air);
- Main LNG Train and process area, where acid gases, water and metals shall be removed, and where gas shall be liquefied with propane and ethylene;
- BOG area and the LNG tanks;
- Sleeper-way down to the coast and the Marine Terminal.

Work on LNG and propane and ethylene tanks was inspected only externally.

Marine facilities were inspected throughout, including the K-2 area, the main trestle, the provisional trestle and the main breakwater.

During the July IESM Mission, the quarry and access road was inspected, including the blasting front and the surplus material deposits.

Regarding construction support areas, the COSAPI campsite was inspected, including maintenance shops, warehouses and fuel supply station. At CB&I's campsite, domestic and industrial effluent treatment facilities were inspected.

Inspection Protocols are presented in **Annex 02**.

4.1 Environmental Compliance

Contamination prevention and housekeeping measures implemented at inspected construction fronts were considered adequate, with only a few exceptions, which were immediately corrected during the inspection. Minor observations included:

- Mixture of different waste types, especially organic residues, was commonly found in waste bins dedicated to other types of waste.
- Two spill trays to collect lubricant and/or fuel spills from mobile equipment required maintenance, and one was missing.

Those minor observations are considered to be within the acceptable margin of tolerance on a Project with such a large number of workers.

4.2 Health and Safety Compliance

During inspections, an excellent level of compliance with safety procedures was observed. This included fencing around excavations or dangerous areas, signaling of required PPEs, uses of scaffolding, ladders, harnesses, etc. Inspection labels on all fire extinguishers in use was also compliant.

Exceptionally, the issues below were found to be non-compliant and shall be corrected as soon as possible:

- A first-aid kit without all required medications and instruments, and
- A fuel container without its cable and static current clamp.

5.0
Internal E&S Assurance

5.1 PERU LNG E&S Supervision and Audits

PERU LNG has reported that during Q1 2009, no internal audits were scheduled or held, due to a significant number of environmental and safety annual reports to be presented between January and March. Another reason was the frequency of external audits of the Plant, the Quarry and the Marine Facilities during the quarter.

It was reported that weekly environmental inspections conducted jointly by PERU LNG and the contractors took place, except for the weeks in which OSINERGMIN audited the facilities. Furthermore, every Friday, PERU LNG managers, together with the contractors, undertake environmental and health and safety inspections at selected construction fronts.

Based on results observed during the July IESM Mission, the compliance assurance system is being efficient.

5.2 Construction-Related Monitoring and Performance Assessment

In addition to the auditing and inspection activities described in Section 5.1, environmental assurance activities include many monitoring/management programs, relative to specific parameters. Results of these monitoring/management activities are hereby assessed on the basis of the information included in the Monthly Reports issued by PERU LNG to OSINERGMIN in January, February and March 2009.

Air Quality / Dust Control

PERU LNG's contractors conduct daily visual monitoring of dust levels at the LNG Plant and Marine Facilities, in order to determine the efficiency of dust-control measures, which include periodic watering of non-paved roads.

The monthly reports sent to OSINERGMIN also include the updated Emission Certificates of all vehicles in use in the Project.

The March 2009 Report furthermore includes results of semi-annual air quality monitoring at a location near the 10 inch gas pipeline that supplies gas for internal use. This monitoring point is located East of PERU LNG's fenced site.

The EIA monitoring program does not require monitoring of emissions of the three gas turbines that generate electricity for the construction phase of the Project. Notwithstanding, it is worth noting that the air quality monitoring point by the gas pipeline is distant from the dispersion plumes of the turbine emissions and hence should not be utilized to evaluate the effect of the turbine emissions on air quality.

During the July IESM Mission, no material problems due to dust generated by construction activities and vehicle traffic were observed.

Verification of Emission Certificates on a random sample of five vehicles was carried out with satisfactory results. Visual observation showed all units with clean escape gases and emissions were deemed compliant with D.S. Nº 047-2001-MTC standards.

Even though emissions of the gas turbines are not monitored, the visual inspection of the stack emissions during the July IESM Mission showed opacity levels below 20%, which is considered satisfactory.

Results for air quality obtained in the semi-annual monitoring are significantly below the maximum levels accepted by national regulations (D.S. 074-2001-PCM), as well as the values recommended by the World Bank.

Noise Monitoring

During Q1 2009, daytime and nighttime noise measurements were conducted monthly at five monitoring stations. The IESM Team's scope of review was limited to an analysis of reported results.

According to the applicable ESIP, noise should be monitored during the construction start-up process and whenever new sources become active. During Q1 2009, intense construction activities took place, and monthly monitoring was compliant with Project requirements.

Of the five noise monitoring points, two (NM1 and NM3) are within the fenced perimeter of the LNG plant, where industrial standards are applicable. The other points (NM2, NM4 and NM5), are external to the Plant's perimeter.

All measurements obtained at points NM1 and NM3 are compliant with national and World Bank standards for industrial areas.

Noise level obtained at NM2, located at the Plant gate adjacent to the Pan American Highway, fluctuated between 73.5 and 75.7 dB(A), which is much above values measured in the Plant premises. This is due to Plant inbound and outbound vehicle traffic, as well as to traffic on the Panamerican Highway. In the surrounding area, there are no sensitive residential, commercial or environmental receptors, so the situation is considered acceptable.

At points NM4 and NM5, all results obtained during daytime comply with national and World Bank standards. During nighttime, the results surpass the established values for residential areas. Both stations are located far away from the Project and noise is not Project-related (sea waves in NM5 and vehicle traffic in NM4).

Results obtained indicate that there are no compliance issues in relation to noise generation.

Water Quality – Cañete River

PERU LNG monitored Cañete River waters on a monthly basis during Q1 2009, according to the frequency established for the Project. Samples are taken downstream of the water intake. During the July IESM Mission, it was reported that the Compliance Monitoring ESIP has been revised in order to eliminate the requirement for monitoring waters upstream of the intake. This change in the ESIP is considered acceptable.

During the three months of monitoring, nitrate concentrations were above the standard of 0.1 mg/l, and, in February, the NMP/100ml of total coliforms was 11,000 against a standard of 5,000, while the result for fecal coliforms was 1,400 against a standard of 1,000. The Project has no influence in the results obtained.

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Water Quality - Campsites

During Q1 2009, PERU LNG monitored potable water monthly, as follows:

- In January: 1 sample at CB&I (block 10) and 2 samples at CDB (SODEXO mess-hall and SIPAN camp);
- In February: 2 samples at CB&I (block 5 and ex-MSM camp's showers) and 1 sample at CDB (washer at K2 platform);
- In March: 2 samples at CB&I (block 12 and ex MSM camp's bathroom) and 1 sample at CDB (main camp).

The monthly frequency of monitoring complies with the requirements of the Project.

During the Mission, the IESM Team was shown a letter from CB&I to DIGESA, with potable water monitoring results for 6 sampling stations for the months of March, April, and May. This level of sampling is considered representative of CB&I's potable water grid.

All results indicate that the potable water meets quality criteria. Total and fecal coliforms are absent, except for one result obtained in March (33 NMP/100ml). This was counterchecked and the verification sample indicated absence of coliforms.

In March, at CDB, chlorine results were 0.1mg/l, a value below the WHO requirement of 0.2 mg/l. This corresponded to a sample at the point of delivery (at the tap), distant from the potable water production Plant.

In the case of bottled water, the applicable monitoring requirement is of one sample per batch. However, it was established that this requirement applies to the bottling plants but not to the users. Random monthly sampling of each water type (e.g. San Luis, AquaVida) is undertaken and should provide sufficient verification that the quality assurance system of water bottlers is satisfactory.

Residual chlorine levels found in bottled water are generally very low or null. However, the absence of total and fecal coliforms is indicative of safe water consumption.

In summary, no material compliance issues were observed with regard to water produced and bottled for consumption during Q1 2009.

Treated Effluents

During Q1 2009, PERU LNG reported monitoring results for CB&I and CDB wastewater treatment plant effluents, for effluents utilized for spraying water for dust-control and for

effluents disposed at sea. Treatment plant results provide reference of plants' performance, while reutilized or discharged effluent results provide verification of compliance with applicable legal discharge standards.

CB&I has also monitored the quality of water used for hydrostatic testing. During January, these effluents were treated at the wastewater treatment plant before being re-utilized, and in February and March these effluents were disposed at sea after treatment at the wastewater plant.

Monitoring of effluents during Q1 2009 is compatible with the requirements of the Project and the results also show that the quality of effluents disposed or re-used are compliant with the applicable standards. Nonetheless, some observations affecting reporting and/or laboratory methods are listed below and should be corrected in future monitoring:

- ALS Laboratory test reports seem to indicate that the analysis methodology employed for Free Chlorine, Turbidity, Color, Ammonia, Sulphurs, and COD is not certified. PERU LNG should clarify this and, if necessary, ask the Laboratory to correct the reports.
- The parameter "helminth eggs" is not included in the monitoring of effluents re-utilized for spraying water for dust-control. This is a requirement quoted in the technical report attached to the DIGESA permit, that indicates the need to comply with the standards of the General Law of Water for Class III Waters (Ley General de Aguas - Clase III), and with the WHO "Health Guidelines for the Use of Wastewater in Agriculture and Aquaculture**",** as applicable to Class A. Given that in Peru the use of treated wastewater for spraying on roads is not regulated, DIGESA, considering the sanitary risk, granted CB&I a permit conditioned to the standards mentioned above.

Marine Water Quality

Marine water monitoring by CDB, performed quarterly at 10 controlled points and at different depths during 2008, will continue on a semi-annual basis in 2009, as established in the Project's Environmental Management Plan. Reduced frequency is due to the fact that in the two previous quarterly monitoring campaigns no significant project-induced variations were observed. No marine water monitoring took place during Q1 2009.

Marine Effluent Discharge Monitoring

CB&I discharged effluents at sea during the months of February and March. Monitoring of the marine water quality is undertaken at points 500 meters south and north of the domestic effluent discharge point, as per the DIGESA permit, and at 100 meters south and north of the discharge point of industrial effluents.

The results of domestic effluent discharge monitoring are within the applicable limits for Class VI of the General Law of Waters (Ley General de Aguas). The assessment of results for industrial effluent discharges will be assessed when the monitoring results are presented by PERU LNG.

Solid Wastes

Volume of wastes generated by type (hazardous, non-hazardous and recyclable, non-hazardous and non-recyclable; and hazardous liquids), are reported monthly by CB&I and CDB.

Daily registries are kept for waste generation, provisional waste storage at the Plant, transportation and final disposal of waste. During the July IESM Mission, field verification of these registries, as well as the inspection of provisional waste storage areas (waste accumulation areas), did not take place.

Notwithstanding, during inspections at CB&I and CDB facilities it was possible to verify that procedures of the applicable ESIPs (ESIP 157883-000-HS-PL-0003 and ESIP 157883-000-HS-PL-0003 – Revision D1) as they apply to waste handling at construction fronts, were generally being observed.

Minor problems related to waste segregation at point of origin and to inadequate waste segregation bins, were observed but were deemed to be "margin of error" issues in view of the dimensions of the Project.

Dredging Monitoring

Except for a few days each month, dredging activities were intense during Q1 2009. The effect of dredging of the navigation canal and of the disposition of dredged material at the corresponding disposal site was monitored daily during dredging days through systematic measurement of turbidity levels. Additionally, on a weekly basis, samples were obtained to determine TSS levels (Total Suspended Solids) and the Turbidity –TSS correlation was reviewed. Arsenic concentration was also monitored on a weekly basis. The monitoring took place at 14 sampling stations and at three different depths.

Frequency and location of sampling stations correspond to those established in CDB's Compliance Monitoring ESIP.

All TSS and Arsenic results were well below the applicable standards for the Project.

Air Quality Monitoring at the Quarry

CDB monitored PM_{10} concentration at stations A-2 and A-4 on a monthly basis, and at stations A-0 and A-1, on a quarterly basis. Likewise, CO, SO_2 and NO_x concentration was monitored quarterly at stations A-0, A-2 and A-3. Monitoring frequencies and stations are in compliance with the requirements established in CDB's Compliance Monitoring ESIP.

PM_{10} results exceeded the applicable World Bank standard (70 µg/m³), in A-4, in two of the three months; and, in A-2, in one of the three months. The results above the World Bank standard ranged between 71.83 and 98.8 µg/m³, significantly lower than the national standard of 150 µg/m³. It is worth noting that station A-4 is located adjacent to the vibratory screen and is therefore influenced by dust emissions arising from the equipment.

It is important to note that all monitoring points are within the quarry facilities and there are no inhabitants within a radius of several kilometers. Quarry workers are protected with respiratory Personal Protection Equipment and are regularly submitted to health exams.

Other monitored parameters (CO, NO_x y SO_2) were well below maximum values established in the applicable Project standards.

Noise Monitoring at the Quarry

PERU LNG reported on noise monitoring at station QM1 on a monthly basis, during 1 hour per day and 1 hour at night. Likewise, stations QM2, QM3 and QM4 were monitored on a quarterly basis. At station P2, noise was monitored on a monthly basis, while there was blasting taking place. The monitoring frequencies and station locations are in compliance with Project requirements.

Only station QM1, located adjacent to the Panamerican Highway, surpassed the applicable 70 dB(A) standard for daytime measurements during the quarter. This monitoring point is subject to influence of noise caused by vehicle traffic on the highway.

6.0
External E&S Assurance

6.1 OSINERGMIN Inspections and Observations

PERU LNG reported that during Q1 2009, OSINERGMIN performed 10 inspections/audits totaling 29 days. Nine were Environmental Audits and only one was a Social Audit. **Table 6.1** below summarizes audit data.

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Table 6.1
Summary of OSINERGMIN Audits during Q1 2009

Month	Tipe of Audit / Location	Observations
January	Environmental Audit / Plant & Marine	No observations raised
January	Environmental Audit / Plant & Marine	No observations raised
January	Environmental Audit /Quarry	No observations raised
January	Environmental Audit / Quarry	No observations raised
February	Environmental Audit / Plant & Marine	No observations raised
February	Environmental Audit / Marine	A verbal recommendation regarding placement of buoys at monitoring locations was reported to have been implemented.
February	Social Audit / Plant & Marine	No observations raised
March	Environmental Audit / Plant & Marine	No observations raised
March	Environmental Audit / Marine / Temporary Bridge	No observations raised
March	Environmental Audit / Noise Monitoring / Plant	No observations raised

Further to the information on Q1 2009 audits, PERU LNG reported on ten (10) previous OSINERGMIN observations that have been responded to and are pending official acceptance. Eight (08) of these observations were raised in Q4 2008, where it is pertinent to highlight that one of the observations refers to the temporary trestle extension and the other to provisional housing of workers (bus drivers) in the direct area of influence. Both of these issues were discussed in detail in the previous (Q4 2008) IESM Report.

6.2 Independent Environmental & Social Monitoring Missions

In its Q1 2009 Report, PERU LNG included description of its actions upon the Independent Environmental & Social Monitoring Team's December 2008 recommendations. Eight recommendations affecting Plant & Marine Facilities were issued by the IESM Team as a result of the December 2008 Mission, including requests for improved reporting, KPI adjustment suggestions, improvement of grievance tracking procedures, adjustment of treated effluent reuse procedures and some minor health and safety issues. PERU LNG's response and corrective actions, verified on the field as pertinent, are considered adequate in all cases.

The Independent Environmental & Social Monitoring Mission covering Q1 2009 took place during April 3 – April 4. This Mission generated 14 recommendations affecting the Plant & Marine Facilities, and PERU LNG has reported on action upon ten (10) of them after termination of the April IESM Mission. Action on the other four (04) recommendations had not been received at the time of issuance of this report and will be verified during the next IESM Mission.

Regarding PERU LNG responses to the ten (10) recommendations referred to above, all were considered satisfactory (see **Annex 03**). However, three of these refer to the need to begin planning the transition from construction to operation, including retrenchment of the construction labor force. PERU LNG has reported that it has reorganized its Community Relations and Social Investment department and that this new organizational design should be fully capable of dealing with the transition issues. However, no specific plans or actions are reported on. Hence, whereas this does not necessarily constitute a delay in view of the construction schedule and applicable contract requirements, these recommendations will remain open until proper action upon them takes place.

7.0
Environmental and Social Program Implementation and Performance

7.1 Marine Monitoring Program

Progress reported by Peru LNG

Marine monitoring was reported to have been undertaken from November 5 to 12, 2008, as part of the program's third year (spring-time monitoring event) and from April 22 through April 28 2009. The report on this latter campaign was not yet available for review.

Starting 2009, PERU LNG has reduced the marine environment monitoring frequency from four times per year to twice per year (fall and spring) in accordance with the EIA. This change is reasonable because data from the last three years indicates no significant variation either on the water quality, fish populations or the benthos.

Additionally, PERU LNG reports to have carried out a desktop review in order to obtain local and regional fish statistics from different government institutions, including the Production Ministry (Vice-Ministry of Fishing), IMARPE (Institute of Peruvian Sea) and others. This data should complement and support that obtained through the Marine Monitoring Program.

Scope of the IESM Team's Review

No specific field activity took place during the Mission. A meeting with PERU LNG staff to discuss the current status of the program and planned activities was held at the LNG Plant.

Compliance Assessment

Currently, the Marine Monitoring Program is in its third year. During the first two years, monitoring activities went beyond project commitments and surveys were performed on a quarterly basis, with sampling and measurements of water quality, currents, sediments, plankton, macrobenthos, and fishing.

With sufficient baseline data collected and evidence that project-related activities are not having a material impact on the marine environment, marine monitoring activities have been rescheduled to be undertaken on a semi-annual basis from now on. This is in line with the approved EIA.

Results Assessment

The program is successfully addressing the conditions of the marine environment. Results from year two were summarized in the Second Annual Report. A new monitoring campaign was conducted in the April 2009, but results were still being analyzed at the time of the July IESM Mission. Preliminary results point to no significant changes in the general patterns observed to date.

Results of the November 2008 monitoring campaign indicated showed phytoplankton density at the highest recorded level during entire program. This was dominated by small diatoms, indicating an early stage of algal succession. Overall diversity and abundance of macrobenthos remained constant with previous surveys. Palabritas and Muymuy, economically important species, were noted in similar abundances as well. A more detailed interpretation of macrobenthos data requires a multivariate statistical analysis which was not yet conducted. The total number of fish caught showed an increase from the previous survey, with total abundances higher in the work area than in the control area. No contamination of fish tissue was detected.

Suggestions and Recommendations

There are no recommendations or suggestions at this moment.

Program Evaluation.

Program is performing in accordance with commitments assumed.

7.2 Ecological Monitoring Program

7.2.1 Seabirds and Marine Mammals Monitoring Program

Progress Reported by Peru LNG

The Seabirds and Marine Mammals Monitoring Program is being reformulated. The drivers are both increasing scientific knowledge to the community and assessing any variation in these populations that could be related to the Project.

The design of the monitoring program (frequency, geographical extent, methodology) was currently being finalized by PERU LNG at the time of the July Mission and it was reported that a new bidding process to select a consultant to carry out the monitoring was under way.

Scope of the IESM Team's Review

The status and objectives of the Sea Birds and Marine Mammals Monitoring Program were addressed in a meeting with PERU LNG staff at the Plant site. Additional information was gathered during the inspection of the Marine Facilities.

Compliance Assessment

This program is not included in the EIA obligations, nor is an additional commitment assumed with the Lenders by PERU LNG. It is an extra effort intended to complement the Marine Monitoring Program, because the target organisms are important components of the marine ecosystem and also regarded as good environmental indicators. Hence, it is important that the program be carried out in accordance with its established objectives.

Results Assessment

The main focus of the Monitoring Program is to monitor the local population of sea birds and marine mammals and to assess the effects of any variation of these species' populations on fishermen activities in the Project's area of influence.

Population of sea birds and marine mammals is expected to increase as a result of trestle and breakwater construction. Evidence collected during site visits suggests the breakwaters represent more a favorable habitat and opportunity for increasing populations than a threat.

Since the monitoring program does not focus on negative construction-related biodiversity impacts, PERU LNG understands that the fact that it has not yet been re-started is not a critical issue. No harm is being done to sea birds and marine mammals, and the potential significant impacts on fishermen activities would anyhow be identified by fish monitoring activities under the Marine Monitoring Program.

The Sea Birds and Marine Mammals Monitoring Program was initiated with an extensive inventory survey along 42.5 km of seashore, with no practical support for impact monitoring at the Project area.

PERU LNG reported it is trying to incorporate the program into the Marine Monitoring Program, to be implemented by one sole contractor/consultant. Under the design being developed, monitoring will take place at restricted sampling areas and under strict objectives and protocols, as per a control/impact methodological approach focused on the scientific investigation of ecological colonization and succession at the breakwaters' surroundings. This is in accordance with discussions held during the previous IESM Mission.

By November 2009, PERU LNG plans to carry out another inventory survey with the new monitoring protocols (whose conclusion is still depending on contractor negotiations already in course) in order to establish a new monitoring baseline.

Suggestions and Recommendations

A new monitoring survey is clearly necessary. Due to the current status of the Sea Birds and Marine Mammals Monitoring Program and of the advanced stage of Marine Facility construction, this survey can serve as baseline of conditions at beginning of operation.

Whereas it is true that sea birds and marine mammals populations are likely to increase, impacts of Marine Facility operations on attracted species may pose some reputational risks. Sea birds and marine mammals are flag species, always in evidence in environmental conservation efforts. Fatal accidents, even in insignificant numbers, may attract attention of some stakeholders, and availability of thoroughly documented baseline data will be important in such contexts.

Once some species of seabirds are in an ongoing process to establish permanent (and even nesting) colonies on the breakwaters and dolphins and sea lions become more and more regular visitors of the area, monitoring will become increasingly important.

Program Evaluation

No progress evaluation is possible because monitoring has not begun. Nevertheless, successive postponement is becoming a concern.

7.2.2 *Tillandsia* Translocation Plan

Progress Reported by Peru LNG

In accordance with the EIA, *Tillandsia latifolia* located on the construction site were transplanted to a nursery within the site for later incorporation into the overall site landscaping plan. After being removed during initial construction activities, the individuals

were placed in large groups, trying to simulate their natural distribution pattern in a protected area in the southwestern corner of the LNG Plant site, distant from any construction activities.

While not required by Project commitments, the *Tillandsias* have been monitored on a monthly basis, comparing their health and survival rates to those at plots that had not been transplanted and that are located in natural growing areas. The monitoring methodology consists of counting live and dead species within a $1m^2$ area at four different locations in the nursery patch and at locations outside the plant in natural patches.

Early monitoring results showed a less healthy population in the nursery, most likely related to the nursery's location and to specific environmental conditions, especially micro-climates. In mid-2007, attempts were made to relocate some *Tillandsias* to higher areas where they would be more exposed to fog.

However, the stress of transplanting these individuals a second time resulted in poor survivorship. Further evaluation by different local specialists in late 2007 and early 2008 led to suggestions of a number of alternative measures. One measure, undertaken in 2008, included establishing 6 plots of *Tillandsias*, within which different techniques were tested with regards to watering, nutrient applications (nitrogen, phosphorus and potassium) and removal of dead individuals. The results to date indicate that these trials have not been overly successful, showing no material difference from previous results. PERU LNG is reviewing alternative measures on this issue based on Project commitments. Further information will likely be available for the Q2 2009 Report.

Scope of the IESM Team´s Review

The program was not evaluated during this visit. The survivorship rate of the plants is still very poor.

Compliance Assessment

The EIA is very vague on this issue and only states that the *Tillandsias* on site must be transplanted to another site. PERU LNG has complied with this commitment and its best efforts to improve results can be considered to exceed requirements established in the EIA.

Results Assessment

Nothing has changed since the last IESM Mission.

Suggestions and Recommendations

None at this time.

Program Evaluation

The transplant of *Tillandsias* has not been successful to date. The use of *Tillandsias* is being considered along some stretches of the pipeline's ROW. With this in mind, best efforts should continue with view to enhancing survival rates after transplant on the pipeline.

7.2.3 Fauna Monitoring at Quarry

Progress Reported by Peru LNG

According to the Quarry EIA, monitoring of the lizard species *Microlophus tigris* is required twice a year in the summer (February) and winter (August). The study area covers three distinct habitat zones including Cacti, *Tillandsias* and sand with no vegetation, located within the direct influence area or altered zone, (e.g. Quarry Haul Road), as well as the control undisturbed areas. In each area, five random sampling transects have been established and sampled. The monitoring objective is to identify the presence of the referred species in the Quarry influence area, although other species of lizards were also encountered. To date, there have been 3 surveys, with a total of 34 individuals encountered.

PERU LNG reported that a monitoring campaign was conducted on February 2009 and resulted in a total of eight lizards of three species being identified, with two individuals identified as *Microlophus tigris.*

It was also reported that the Contractor is continuously giving training to the Quarry personnel on the importance of this species and seeks to avoid any unnecessary disturbance during Quarry operations.

Scope of the IESM Team's Review

Additional information about the program was given during the Mission by CBD staff. The general area where monitoring is taking place was observed during the inspection of the Quarry site.

Compliance Assessment

The program is in accordance with the established commitments.

Results Assessment

In general, results show that the population of *Microlophus tigris* and other lizard species fluctuates and may depend on the location and randomness of the sampling transects.

Construction activities such as the passing of trucks on the Quarry access road may also influence the numbers somewhat, keeping the lizards away or hidden during the monitoring surveys.

No material interference of the Quarry and access road on the habitat of the lizards has been identified. It is worth noting that the impacted area represents only a small portion of the overall habitat of the various species.

It is also worth noting that the program is being successful in obtaining new information on ecological requirements of the investigated lizard species.

Suggestions and Recommendations

There are no specific recommendations at this time.

Program Evaluation

The program is meeting its objectives.

7.3 Coastline Monitoring

The objective of Coastline Monitoring Program is to evaluate the possible impacts that the Project's construction could cause on the coastline's morphology. The first measurements were carried out before construction began, followed by measurements in April, October and December 2008.

During 2009, an additional assessment was executed in April, but the results were not available at the time of the July IESM Mission.

PERU LNG has received the results of the October 2008 topographic measurements from the consulting company in charge of the monitoring program. Results obtained indicate that the erosion observed in previous measurements at the trestle location have already started to revert, with sand accretion being deposited in the erosion areas.

Results to date indicate that erosive processes seem to be a result of the natural morphologic dynamics of the area, which is very changeable, according to the season of the year.

Additional measurements are necessary to observe the effects of the main breakwater, which may affect wave dynamics and result, over time, in changes of the coastline's morphology.

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7.4 Luminosity Monitoring

Luminosity monitoring is an additionality program and not a requirement of the Project established in the EIA approval process. Furthermore, Peruvian national regulations do not include any luminosity requirements relative to marine environments.

PERU LNG reported that in spite of the above, a luminosity monitoring campaign was carried out on March 30 2009. The results reported indicate that natural luminosity levels are reached 575 meters south and 950 meters north of the trestle.

The increased luminosity area is related to vessels operating around the trestle and the dredged channel. Since operation of those vessels is to be discontinued shortly, PERU LNG anticipates that no additional monitoring beyond the March 30 campaign will be conducted.

7.5 Groundwater Monitoring

PERU LNG reported that groundwater monitoring took place at Topará in February and May. Additionally, a workshop for presentation of past results and future activities to the community of Topará took place late May.

Results of the February monitoring campaign were received on March and continue to show no impact to groundwater levels or quality.

During the July Mission, the IESM Team's scope of review with regards to this program was limited to the assessment of PERU LNG's report. More thorough verification will take place during the next mission.

7.6 Vibration Monitoring

This program has been discontinued due to the fact that the results obtained until July 2008 showed that vibrations occurring during blastings at the quarry were very low and do not affect the Topará aquifers. The EIA does not establish a mandatory vibration monitoring program, and this one was performed on a voluntary basis.

7.7 Cultural Heritage Management Plan

PERU LNG reported that an internal audit of the Cultural Heritage ESIP of the LNG Plant and Marine Facility contractors was carried out in December 2008 based on desk top review of records, reports and other documentation. No shortcomings were identified.

Closure and restoration of a rescue site by the Quarry access road was reported to be concluded. No chance finds were reported on for Q1 2009.

The IESM Team's scope of review on this program was limited to data reported by PERU LNG. A meeting with the archaeological team will be scheduled in the next Mission.

7.8 Local Hiring and Purchasing Plan

Progress Reported by Peru LNG

According to the Q1 2009 Report, during the reporting period the local workforce content comprised almost 38% of the total Peruvian workforce on the LNG Plant and Marine Facilities (including the Quarry).

Contractors fulfilled the project's commitment to hire equally from Cañete and Chincha, though the balance is still slightly in favor of Cañete. On average, 1,649 workers from the communities of Cañete and Chincha remained hired on the project during Q1 2009, as summarized in the table below.

Local hiring	January	February	March
Chincha	692	800	842
Cañete	791	870	953
Total	1,483	1,670	1,795

According to PERU LNG, during Q1 local procurement totaled US$ 239,591 in January, US$ 342,425 in February, and US$ 270,353 in March, adding up to US$ 852,369 for the quarter. Procurement from Chincha and Cañete was primarily by contractors. The following table classifies local procurement by types of goods and services:

Item	%
Construction materials and supplies	15
Food	9
Lodging	30
Services in general	34
Fuel	4
Others	6

During the Mission, PERU LNG's Social Relations team advanced the following labor force data for Q2 2009:

Local Hiring	April	May
Peruvian workforce	4,552	4,974
Number of workers from Chincha	864	964
Number of workers from Cañete	1,000	1,113

Local procurement amounted to US$ 292,424 in April and US$ 314,437.00 in May.

Scope of the IESM Team´s Review

During the July Mission, the IESM Team had conversations regarding local hiring and purchasing with PERU LNG's community relations staff.

Compliance Assessment

As noted, there is a slight difference in favor of Cañete in the number of local workers and this is a recurring pattern. This needs a minor adjustment. However, this does not alter the compliance status of the Local Hiring Program.

Results Assessment

The program has achieved good results and is benefiting a significant number of local workers and local businesses. The percentage of local workers in the total workforce has increased significantly in Q1 2009. In spite of this, visits to the Cañete and Chincha offices during Q2 showed a marked increase in the percentage of inquiries about job opportunities (see Stakeholder Engagement Program).

Suggestions and Recommendations

The need for a detailed transition plan between the construction and operation phases of the Project, including retrenchment planning, has been pointed before out by the IESM Team and will be essential in order to smoothen the social impacts of demobilization and decrease of local workforce and goods/services demand.

Program Evaluation

The Local Hiring and Purchasing Plan is effectively maximizing the benefits of the construction process for the local population of both Cañete and Chincha in a balanced way.

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7.9 Stakeholder Engagement Plan

Progress Reported by Peru LNG

According to the Q1 2009 Report, during the quarter the main focus of the Stakeholder Engagement Program was directed to diffusion and positioning of the PERU LNG Project in the provinces of Chincha and Cañete, coordination with key local stakeholders and information exchange with general stakeholders (contact with Social Projects and their beneficiaries, as well as contact with the main private and public institutions in Cañete and Chincha).

As part of this effort, the LNG Plant Community Relations group participated in the "Task Force for Strengthening Local Capabilities" organized by UNDP in Chincha.

Also as part of this effort, a directory of institutions, organization and media of the two provinces was structured and is being continuously updated. Also informative talks about the project have been carried out at educative institutions of both provinces.

During Q1 2009 there were 739 visitors registered at Cañete's office and 658 at Chincha (76 additional visits to the latter were inquiries on pipeline activities).

Visits to the offices were mostly related to inquiries about employment, fishermen compensation and requests for information on the Project, including updates on construction and benefits of the Project to the community. The table below classifies inquiries by subject.

Type of interactions to both offices – Q1 2009	**Number**	**%**
Employment Inquiries	668	45
Fishermen compensation	558	38
General Consultation	247	17
Grievances	6	0
Total	1,479	100

PERU LNG also reported that during Q1 2009, 164 comics, 189 leaflets and 334 newsletters about Plant and Quarry have been distributed through PERU LNG offices in Chincha and Cañete. In addition, 475 guides for the identification of seabirds and marine mammals were distributed to local schools, stakeholders, and the general public visiting the offices.

Six (06) grievances were received at the Cañete office. Three of them were related to local hiring, two were related to property damage and one of them was related to the Fishermen Compensation Plan. Only one grievance (related to property damage) remained open at the end of Q1, but was in the process of being closed.

During Q1 a full-time Grievance Coordinator was designated by PERU LNG. Among his first tasks was a review of the grievance procedures of both EPC contractors, with suggestions as necessary to bring them in line with the Project Grievance Procedure.

Regarding the Influx Management Plan, it was reported that during Q1 2009 there has been an expansion of informal settlements, in particular the settlement called "El Trébol del Pacífico", located on the north side of the Plant, outside the buffer zone.

Monitoring activities have led to continuous inspections at the buffer zone to verify no encroachment and that the perimeter fence is in good condition.

In addition, coordination with the Agricultural Ministry Attorney has taken place and this has led to two visits to the buffer zone by this government representative. The future exchange of information about the growth of illegal settlements, legal status, and possible courses of action by the Ministry have been discussed.

Furthermore, PERU LNG reported it has submitted letters to other governmental institutions such as the DGAAE and OSINERGMIN in order to make them aware of the situation.

Monitoring activities of the buffer zone and photographic register continued regularly during Q2 2009.

Scope of the IESM Team´s Review

During the July Mission the IESM Team held a meeting with PERU LNG's and the contractors' community relations teams. During this meeting, activities under the Stakeholder Engagement Plan during Q2 2009 were also reported on.

Visits to the Cañete and Chincha offices during Q2 showed a marked increase in the percentage of visits inquiring about job opportunities. This should be taken into account when developing the retrenchment planning.

Also worth highlighting is the fact that visits regarding the Fishermen Compensation Program decreased significantly in relation to Q1.

A more detailed breakdown of inquiries is provided in the following table:

Type of visits – Q2 09	Cañete Office	%	Chincha Office	%	Total	%
Employment inquiries	241	58	339	81	580	69
Fishermen compensation	101	24	25	6	126	15
Other	55	13	40	10	95	11
Local providers	15	4	1	0	16	2
Social support	5	1	11	3	16	2
Grievances					2	0
Total	417	100	416	100	839	100

During the Q2 2009, only 2 grievances were reported at the Cañete and Chincha offices. One was related to local hiring and currently is closed. The other is related to the alleged damage of fishing nets. The case is under investigation and remains open.

Compliance Assessment

During Q1 2009, gaps between CB&I and CDB grievance procedures and that established for the Project were assessed and adjustments implemented as necessary.

Results Assessment

The program is trying to position the Project and disclose information about the transition process to the operation phase. Interaction with stakeholders is being properly managed and registered.

Suggestions and Recommendations

None at this time.

Program Evaluation

The Stakeholder Engagement Plan is properly managing and documenting Project interaction with the local population. For Q1 2009, records show that employment opportunities have become the main issues of concern of the local population picked up at the Cañete and Chincha offices with regards to the Project.

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7.10 Fishermen's Compensation Management Plan

Progress Reported by Peru LNG

PERU LNG reported that during Q1 2009, eight (08) agreements were signed with artisanal fishermen associations and negotiations were ongoing with the remaining two. These remaining associations prefer to receive cash compensation as opposed to compensation in social/economic projects. They also expect to receive a large compensation amount and this is hindering the process.

Out of 284 agreements with independent fishermen identified as eligible in the Compensation Plan, 237 were signed.

PERU LNG reported that it is developing business ideas and feasibility studies with fishermen for the implementation of sustainable productive projects as part of the compensation to restore lost income due to the future implementation of the security zone around the marine trestle.

During Q1 2009 the advance of the compensation process can be summarized as follows:

- 2 transportation related projects were executed involving 24 fishermen.
- Project profiles completed and approved for projects involving 73 fishermen.
- Project profiles involving 91 fishermen have been completed and are ready for approval.

The majority of the projects that are being developed are related to secondary economic activities that fishermen were already carrying out; or to main economic activities being carried out by the fishermen's direct relatives.

Specific KPIs were developed to measure the impact of the Compensation Plan on the restoration of income. They include two types of indicators:

- Indicators of temporary impact: related to the individual non-monetary benefits
- Indicators of long term results: related to the results of the productive projects/small businesses.

Scope of the IESM Team´s Review

The IESM Team held a meeting with PERU LNG staff responsible for the Fishermen Compensation Plan. Information provided focused on recent developments (until June 2009), as summarized below:

- During the Mission, the IESM Team was informed that the Tambo de Mora association reached an agreement within the terms of the Fishermen Compensation Plan. Only one association is still negotiating (APARCHPC – 63 fishermen).
- 5 more independent fishermen reached an agreement. Hence, 242 out of 285 independent fishermen have signed agreements.
- 370 business ideas have been identified for 100% of fishermen who already signed agreements.
- 109 business profiles are in elaboration (70 for individual fishermen and 39 for associated ones).
- 140 business ideas are already approved.
- 57 businesses are already implemented.

The table below summarizes the situation in June 2009, providing further information on types of business activities.

Type of Business	Approved	Implemented
Transportation	101	42
Commerce	16	6
Services	10	4
Agriculture and livestock	7	4
Fishing	4	
Agribusiness	1	1
Manufacture	1	
Total	140	57

The IESM Team also held a meeting with the members of the Beatita Melchorita Association of Fishermen. 32 of 48 of its members have bought “mototaxis” in the frame of the Fishermen Compensation Plan. Only 8 members of this association have not yet implemented their project, however all of them are approved and implementation will be carried out soon. Members of this association were very explicit expressing their satisfaction with the compensation and how it was delivered.

Compliance Assessment

Negotiations with fishermen associations are extending for a longer period than planned. This timeframe is due to the unexpected difficulty in reaching agreements with some associations and cannot be considered a non-compliance.

Results Assessment

The negotiation process has thus far been successful. Only one association is still negotiating.

Businesses and projects are being implemented but it is still too soon to assess results in this regard.

Suggestions and Recommendations

None at this time.

Program Evaluation.

The program's negotiation phase is achieving very good results, taking into account that it has been facing complex negotiations with two associations. For Q3 it is critical to close an agreement with the remaining association.

The implementation of the businesses and projects is making good progress.

8.0
Additionality Programs

8.1 Contractors' Investment in Community Development

As briefly described below, both CB&I and CDB are carrying out a wide variety of social interventions in the communities of Cañete and Chincha. These include social, economic, cultural and environmental initiatives.

During the July Mission, the IESM Team attended presentations by CB&I and CDB community relations teams in which all social investment initiatives were reviewed in detail. All projects continue to be implemented.

Social Development

Health Campaigns (CB&I and CDB)

During Q1 2009, health campaigns consisting of expedite medical checks-ups and 20 campaigns were carried out with 2,276 people included in the campaigns, most from rural areas. The contribution of the CB&I and CDB was through support in logistics, transport and funding of informative material for the health centers in Chincha and Cañete.

Health/Hygiene Training in Community Kitchens (CB&I)

During Q1 2009, one (01) nutritional and environmental workshop was held for 80 women that are active members of Community Kitchens. These activities are carried out in coordination with local governments.

Economic Development

Strengthening Local Textiles Workshops (CB&I)

Two (02) Textiles Workshops (1in Chincha and 1 in Cañete) were sponsored during Q1 2009. Participants received administrative training. PERU LNG has also begun to support this initiative by purchasing uniforms, both for Plant and Pipeline activities, through the Supply Chain Management Project.

Silk-screen printing workshops (CDB)

During Q1 2009, 3 training courses were sponsored in a school in Chincha, teaching participants silk-screen printing techniques.

Cultural Development

Dance school (CDB)

This program promotes local music and dance among children from Chincha and Cañete. Around 100 children participate in the program. In Q1 2009, the dance school held 96 class-hours.

Football school (CDB)

The football school was initiated to develop skills of children from Chincha and Cañete. There were 90 children actively participating in this project during Q1 2009.

Supporting Volleyball, Fronton and Chess (CB&I)

In coordination with local governments and the Peruvian Institute of Sport, CB&I supports volleyball, “fronton” and chess teaching and training with children and teenagers from both Chincha and Cañete. During Q1 2009, there were 200 active participants in this project.

Environmental Protection

Healthy School Program (CB&I)

The goal of this program is to support and improve safety, health and protection of the environment in schools. In Q1 2009 it also included workshops for prevention of the AH1N1 flu. It is implemented in coordination with health centers, municipalities and National Police. Health brigades have been formed in 11 schools of the provinces of Chincha and Cañete.

Other Projects

Further to the projects listed above, the following complementary social initiatives were reported on during the mission:

- CB&I is promoting the elaboration of Concerted Development Plans, Municipal Institutional Development Plans and Participatory Budgets.
- CB&I is in the process of publishing studies of the project's area of influence which will help district municipalities in planning their development efforts.
- CB&I also has promoted a paint workshop in coordination with SENATI, training in livestock management in coordination with the Ministry of Agriculture and the publication of a small book on the Cañete – Chincha Inka Trail in coordination with the INC.
- CDB is promoting the governmental program *Plan Lector* that seeks promotion of reading among children.
- CDB is promoting workshops on prevention of family violence in coordination with MIMDES.

8.2 PERU LNG Social Projects

PERU LNG is undertaking investment in community development through targeted programs in agricultural promotion (*Agroprogreso*) and supply chain management (*Local Supplier Development Project*).

With regards to ***Agroprogreso***, the Q1 2009 Report informs that the new implementation partner is the Instituto Rural Valle Grande from Cañete. During the transition phase of the project, meetings with stakeholders were carried out in order to enhance the linkages with the beneficiaries. The vineyards rehabilitation program – an agreement with the beneficiaries during the project's first stage – continued under PERU LNG supervision (beneficiaries: 24 farmers / rehabilitation of 1,000 m^2 of vineyards for each plot).

The redesigned project is focused on grape production chain implementation and includes the following components:

- Technical assistance to agricultural plots according to specific crops needs.
- Access to financial credit to purchase agricultural supplies.

- Support in commercialization through agreements negotiated for the entire crop supply chain by the project operator.

During Q1 2009, field work for collecting agronomic baseline data began. The agreement with an agricultural supplier company was signed, and through it a credit line for pre-evaluated beneficiaries to purchase fertilizers and pesticides has been made available.

During the Mission, the IESM Team received the following complementary information:

- Technical assistance (306 beneficiaries) and training (106 beneficiaries) for grape and other agricultural products have been carried out and concluded.
- After an evaluation, 112 grape producers have been selected for receiving credits in agricultural supplies. The supplies will be delivered in August.
- 4 hectares of vineyards have been rehabilitated with a total of 23 beneficiaries. The latter contributed with their labor and part of the materials needed.

During the mission, the IESM Team visited two of the vineyards in the district of Sunampe (Chincha) where the rehabilitation had taken place. The IESM Team was able to appreciate the commitment and expectations that the owners of this plot have with the technical assistance and the possibility of participating in a productive chain that would ensure market for their produce.

With regards to the ***Local Supplier Development Project,*** the Q1 2009 Report informs that the implementing partner, SwissContact - Recursos SAC, has carried out the following activities:

- Register of Small and Medium Enterprises (SMEs) in Chincha and Cañete: 173 SMEs already registered, out of an initial target of 200.
- Development of SME diagnosis and Business Improvement Plans (BIP): 83 diagnostics and 80 Business Improvement Plans, versus a target of 100 diagnostics of SMEs and 100 BIPs.
- Baseline data elaboration: Field work for collecting data of 100 SMEs has been concluded. Analysis is ongoing.

During the Mission, the IESM Team received the following complementary information:

- 215 SME have been registered.
- 103 have been evaluated (27 from Cañete and 76 of Chincha).
- 103 have received an improved business plan (27 from Cañete and 76 of Chincha).

The table below provides additional data on the types of business activities that are being assisted.

Type of business	%
Manufacture	50
Wholesale and retail commerce	24
Construction	8
Other business activities	8
Other services	4
Hotels and restaurants	3
Transport, storage and communications	3

Products demand identification:

- 32 large businesses have been visited in Chincha, Caãete, Lima and Ica in order to identify possibilities of business articulation.
- PERU LNG has visited local mechanic workshops.

It was reported that since there is not a very clear articulation between regional market demand and the products and services offered by the SMEs in Chincha and Cañete, the area of investigation of market demand was extended to Lima and Ica.

In order to strengthen local organizational capabilities to support future SMEs' need for information and training, the program will sign an agreement with the Chamber of Comerce of Chincha. Discussions are ongoing.

9.0
Project KPI Analysis

9.1 Environmental Indicators

During Q1 2009, all indicators were within the applicable performance standard.

It is worth noting that KPI EPT10, relative to the number of water samples obtained with coliforms, scored 67% against a target standard of 95%. However, this is more the result of the small number of samples in the statistic calculation (only three samples). Furthermore, upon retesting, the sample with coliforms was compliant.

It is also worth noting that in the case of KPI EPL7 (treated effluent discharges), 20% of results (2 out of 10 samples) were non-compliant with applicable standards (either for

phosphorous or ammoniacal nitrogen). EPL7 requires a 20% reduction over the previous year's non-conformant situations. Since complete data on treated effluents for 2007 is not available, compliance cannot be effectively established in this case. However, in the previous quarter (Q4 2008), 4 out of 9 samples had shown some compliance problem, so the result for Q1 2009 indicates significant improvement.

9.2 Social Indicators

All performance targets established in the Project's Social KPI's were met during Q1 2009. The only comment worth registering in this context is that local hiring continues slightly unbalanced in favor of Cañete. An effort to reach a better balance the situation should be undertaken.

9.3 Health and Safety Indicators

During Q1 2009, only one lost time incident occurred, when a worker was hit by a pipe against a steel column, as the pipe was being placed on the pipeline sleeper way. Recommendations originating from the accident were implemented.

The frequency rate of accumulated lost time incidents during the year was of 0.05 against a target of ≤0.25 (for 200,000 hours worked). The frequency rate of recordable incidents was of 0.37 against a target of ≤1.25. Thus, in both cases the values are much below target.

10.0
Consolidated Suggestions and Recommendations

As established in previous IESM Missions, IESM recommendations are classified into six main types as follows:

1. Recommendations affecting PERU LNG's E&S assurance procedures relative to construction.
2. Recommendations requiring PERU LNG to request corrective action from contractors.
3. Recommendations relative to ongoing E&S Programs.
4. Suggestions relative to Additionality projects.
5. Requests for inclusion of complementary information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports.
6. Recommendations for future action in view of perceived environmental and social upcoming risks (i.e. recommendations for preventive action with regards to future works, rather than for corrective action on past or ongoing performance).

Only four (04) new recommendations result from the July Mission and are presented below. One is classified as a type 1 recommendation, and the other three are type 2, 4 and 5. These four (04) recommendations are presented below.

A **Recommendation Tracking Table** is presented in **ANNEX 03** and registers not only the status of these four new recommendations, but also that of PERU LNG's action upon previously issued IESM recommendations.

Type 1 - Recommendations Affecting PERU LNG's E&S Assurance Procedures Relative to Construction

- Include the verification of the correct use of static current clamps and static current connections to dissipate or equalize static current at all project fuel storage tanks and fuel supply and transportation facilities, in the inspection routines (checklists) carried out by PERU LNG as part of its construction E&S assurance procedures.

Type 2 - Recommendations Requiring PERU LNG to Request Corrective Action from Contractors

- Require additional and/or more frequent induction with regards to proper segregation of waste by workers at construction fronts and appropriate use of waste segregation bins. This should also include guidelines relative maintenance and cleaning of spill trays.

Type 4 – Suggestions Relative to Additionality Projects

- Start new survey of the Sea Birds and Marine Mammals Monitoring Program.

Type 5 - Requests for Inclusion of Complementary Information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports

- In future Quarterly E&S Reports, include the established performance targets in the Environmental KPI Summary Table.

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ANNEX 01 - List of Documents Reviewed

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Annex 01 – List of Documents Reviewed Peru LNG – PLANT AND MARINE FACILITIES

COLP Safety Inspection to CB&I
Kitchen Inspection Report April
Kitchen Inspection Report May
Food service Contractor Inspection Report – CDB
COLP Safety Inspection to CDB
Catering Services Inspection Report (Pipeline)
H&S Driving Incident Rate statistics
H&S KPIs for June 09
Plant Social Investment Programs Presentation
Fishermen Compensation Plan Presentation
Plant Social Management Presentation
PADPI - Pluspetrol
Water Quality Results (before and after treatment)
Standard Methods 9221 B, 9221 C, 9221 E, 9221 F
Emissions Certificates
Livelihood Program Technical Proposal
Biodiversity Monitoring Program Presentation
H&S and E&S Org Charts
Fishermen Compensation Examples
CEMP communications diagram
CBI Community Relations Presentation
CDB Community Relations Presentation
Marine Monitoring Program Workshop Presentation
Section V of the Marine Monitoring Program Report
Observation 36 of the Plant EIA
Monthly EHS Progress Report - Jan 2009
Monthly EHS Progress Report - Feb 2009
Monthly EHS Progress Report - March 2009
Monthly EHS Progress Report - Abr 2009
Monthly EHS Progress Report - May 2009
Monthly EHS Progress Report - Jun 2009
Monthly Report - OSINERGMIN - Jan 2009
Monthly Report - OSINERGMIN - Feb 2009
Monthly Report - OSINERGMIN - Mar 2009

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ANNEX 02 - Inspection Protocols

Inspection Check List		Inspected Facilities								
A. Housekeeping and Pollution Prevention		**Utility Sector**	**LNG Train**	**BOG Area**	**LNG Tanks**	**Sleeper Way**	**Internal roads**			
A.1	Control of fugitive dust	Na	Na	Na	Na	Na	√			
A.2	Control and/or containment of activity-related emissions (blasting, painting, others)	o	o	o	√	o	Na			
A.3	Control of vehicle and equipment emissions	√	√	√	√	√	√			
A.4	Control of vehicle and equipment noise emissions	▲	▲	▲	▲	▲	▲			
A.5	Location restrictions for installations or activities with high contamination risk	Na	Na	Na	Na	Na	Na			
A.6	Construction equipment spill prevention	√	X	√	√	√	√			
A.7	Control of concrete mixer washing	Na	Na	Na	Na	Na	Na			
A.8	Control of construction front liquid effluents	Na	Na	Na	Na	Na	Na			
A.9	Handling and storage of chemicals, fuel, oil, paints and other liquids at construction fronts	√	√	√	√	√	√			
A.10	Hydrotest water handling (sourcing, reuse, additives, pre-discharge treatment, other)	√	√	√	√	√	√			
A.11	Construction front sanitary installations	√	√	√	√	▲	▲			
A.12	Construction front canteen and worker resting areas	▲	▲	▲	▲	▲	▲			
A.13	Classification and provisional storage of solid waste in construction fronts	X	√	√	√	√	√			
A.14	Control of solid waste off-site transportation and disposal	▲	▲	▲	▲	▲	▲			
A.15	Destination of recyclable wastes	▲	▲	▲	▲	▲	▲			
A.16	Proper corrective action in case of spills	o	o	o	o	o	o			
A.17	Control of water use, including permits	Na	Na	Na	Na	Na	Na			
A.18	Transportation and handling of radioactive or other hazardous products, including permits	▲	▲	▲	▲	▲	▲			
A.19	Access and circulation restriction (barriers) around and within construction fronts	√	√	√	√	√	√			

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non-Compliant

Inspection Check List		Inspected Facilities								
B. Archaeological Chance Finds		**Utility Sector**	**LNG Train**	**BOG Area**	**LNG Tanks**	**Sleeper Way**	**Internal roads**			
B.1	Delimitation and protection of archaeological remains	Na	Na	Na	Na	√	Na			

Inspection Check List		Inspected Facilities								
C. Erosion and Run-off Control		**Utility Sector**	**LNG Train**	**BOG Area**	**LNG Tanks**	**Sleeper Way**	**Internal roads**			
C.1	Erosion control at borrow pits and surplus material deposits	Na	Na	Na	Na	Na	Na			
C.2	Stabilization of soil and aggregate piles within construction fronts	Na	Na	Na	Na	√	√			
C.3	Control of inclination of platforms, cut and fill sections and drainage components	Na	Na	Na	Na	√	√			
C.4	Stabilization / recovery of erosion	√	√	√	√	√	√			
C.5	Geological inspections	o	o	o	o	o	o			

Inspection Check List		Inspected Facilities								
D. Construction Front Signaling		**Utility Sector**	**LNG Train**	**BOG Area**	**LNG Tanks**	**Sleeper Way**	**Internal roads**			
D.1	Signaling – Access restriction	√	√	√	√	√	√			
D.2	Signaling – Vehicle and equipment circulation and maneuvers	√	√	√	Na	Na	√			
D.3	Signaling – Health & Safety warnings	√	√	√	√	▲	√			

Inspection Check List		Inspected Facilities								
E. Worker's Health and Safety		**Utility Sector**	**LNG Train**	**BOG Area**	**LNG Tanks**	**Sleeper Way**	**Internal roads**			
E.1	Use of Protection Equipment	√	√	√	√	√	√			
E.2	Worker's transportation	Na	Na	Na	Na	Na	√			
E.3	Vehicle and equipment conditions	▲	X	▲	▲	▲	▲			
E.4	Compliance w/ Safe Work Procedures (SWP) – Earth Movement	▲	▲	▲	▲	▲	▲			

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non-Compliant

Inspection Check List		**Inspected Facilities**								
E. Worker's Health and Safety		**Utility Sector**	**LNG Train**	**BOG Area**	**LNG Tanks**	**Sleeper Way**	**Internal roads**			
E.5	Compliance w/ SWP – Work in high places	√	√	√	√	√	Na			
E.6	Compliance w/ SWP – Welding	▲	▲	▲	▲	▲	▲			
E.7	Compliance w/ SWP – Sandblasting	▲	▲	▲	▲	▲	▲			
E.8	Compliance w/ SWP – Electric risk	▲	▲	▲	▲	▲	▲			
E.9	Compliance w/ SWP – Confined space	o	o	o	o	Na	Na			
E.10	Compliance w/ SWP – Pressure testing	▲	▲	▲	▲	▲	▲			
E.11	Compliance w/ SWP – Safe driving	√	√	√	√	√	√			
E.12	Compliance w/ SWP – Other	Na	Na	Na	Na	Na	Na			
E.13	Emergency equipment (including extinguishers and first aid)	√	√	√	√	√	√			

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non-Compliant

Inspection Check List		**Inspected Facilities**								
A. Housekeeping and Pollution Prevention		**Trestle**								
A.1	Control and/or containment of activity-related emissions (sandblasting, painting, others)	o								
A.2	Control of equipment air emissions	▲								
A.3	Control of equipment noise emissions	▲								
A.4	Construction equipment spill prevention	√								
A.5	Construction front sanitary installations, canteens and worker resting areas (on land)	√								
A.6	On board sanitary conditions (canteen, restrooms, etc.)	Na								
A.7	Handling of construction front liquid effluents (sanitary and other)	√								
A.8	Handling and storage of chemicals, fuels, oil, paints, and other liquids at construction fronts	√								
A.9	Handling and storage of chemicals, fuels, oil, paints, and other liquids on board	Na								
A.10	Classification and provisional storage of solid waste in construction fronts	▲								
A.11	Classification and provisional storage of solid waste on board	▲								
A.12	Control of solid waste off-site transportation and disposal, including recyclables	▲								
A.13	Control of ship waste disposal	▲								
A.14	Transportation and handling of radioactive or other hazardous products, including permits	▲								
A.15	Control of ship fuel supply operations	o								
A.16	Proper corrective action in case of spills at land	o								
A.17	Marine spill containment and withdrawal capabilities	▲								
A.18	Proper corrective action in case of spills at sea	o								
A.19	Seawater contamination surveillance / monitoring	√								
A.20	Beach contamination surveillance / monitoring	▲								
A.21	Beach access and circulation restriction around and within land construction fronts	▲								
A.22	Access restriction around marine construction fronts (exclusion zone enforcement)	√								

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non-Compliant

Inspection Check List		**Inspected Facilities**								
B. Marine Footprint Minimization		**Trestle**								
B.1	Control of beach erosion and debris deposition	√								
B.2	Dredging plan compliance assurance	Na								
B.3	Control of dredged material disposal at dump site	Na								
B.4	Control of breakwater footprint limits	Na								
B.5	Other sea bed disturbance reduction measures	▲								

Inspection Check List		**Inspected Facilities**								
C. Construction Front Signaling		**Trestle**								
C.1	Signaling – Access restriction	√								
C.2	Signaling – Vehicle and equipment circulation and maneuvers	√								
C.3	Signaling – Health & Safety warnings	√								
C.4	Marine signaling – navigation	Na								
C.5	Marine signaling – footprint limits	Na								

Inspection Check List		**Inspected Facilities**								
D. Worker's Health and Safety		**Trestle**								
D.1	Use of Protection Equipment	√								
D.2	Worker's transportation	Na								
D.3	Vehicle and equipment conditions	▲								
D.4	Compliance w/ Safe Work Procedures (SWP) – Navigation / work at sea	Na								
D.5	Compliance w/ SWP – Work in high places	o								
D.6	Compliance w/ SWP – Welding	o								
D.7	Compliance w/ SWP – Sandblasting / Garnet Blasting	o								
D.8	Compliance w/ SWP – Pressure testing	o								

Na	*Not Applicable*	o	*Not Active*	▲	*Not-Verified*	√	*Compliant*	X	*Non-Compliant*

Inspection Check List		**Inspected Facilities**								
D. Worker's Health and Safety		**Trestle**								
D.9	Compliance w/ SWP – Fuel supply	o								
D.10	Compliance w/ SWP – Other	Na								
D.11	Emergency equipment (including extinguishers and first aid)	√								

PERU LNG **IP.05**	INDEPENDENT ENVIRONMENTAL & SOCIAL MONITORING **INSPECTION PROTOCOL – OPERATION OF CAMP FACILITIES & PROVISIONAL INDUSTRIAL INSTALLATIONS**	JGP Rev. 01	16/07/2009

Inspection Check List		**Inspected Facilities**								
A. Housekeeping and Pollution Prevention		**Camp. COSAPI**	**Quarry**							
A.1	Control of fugitive dust	√	√							
A.2	Control of vehicle and equipment air emissions	▲	▲							
A.3	Control of vehicle and equipment noise emissions	▲	▲							
A.4	Particulate matter monitoring	▲	√							
A.5	Location restrictions for installations or activities with high contamination risk	√	Na							
A.6	Construction equipment spill prevention	X	▲							
A.7	Handling and storage of fuels, oil, lubricants and other hazardous liquids at construction front	√	▲							
A.8	Construction front sanitary installations, canteens and worker resting areas	√	√							
A.9	Control of construction front liquid effluents	√	√							
A.10	Classification and provisional storage of solid waste in construction front	√	√							
A.11	Control of solid waste off-site transportation and disposal, including recyclables	o	o							
A.12	Proper corrective action in case of spills	o	o							
A.13	Control of water use, including permits	Na	Na							
A.14	Access and circulation restriction (barriers) around and within construction front	√	√							
A.15	Control of third party use of access road	Na	Na							

Inspection Check List		**Inspected Facilities**								
B. Use of Explosives		**Camp. COSAPI**	**Quarry**							
B.1	Transportation and handling of explosives	Na	o							
B.2	Legal compliance affecting transport and use of explosives (permits, authorizations, other)	Na	▲							
B.3	Detonation control	Na	o							
B.4	Compliance with detonation schedule	Na	o							

Na	Not Applicable	o	Not Active	▲	Not-Verified	√	Compliant	X	Non-Compliant

Inspection Check List		**Inspected Facilities**								
B. Use of Explosives		**Camp. COSAPI**	**Quarry**							
B.5	Pre-explosion and post-explosion inspections and corrective measures	Na	o							
B.6	Procedures for evacuation and control of buffer zone during explosions	Na	o							
B.7	Control of disposal of useless explosives and other detonation materials	Na	o							

Inspection Check List		**Inspected Facilities**								
C. Archaeological Chance Finds		**Camp. COSAPI**	**Quarry**							
C.1	Delimitation and protection of archaeological remains	Na	√							

Inspection Check List		**Inspected Facilities**								
D. Control of Vegetation Clearing and other Site Preparation Activities		**Camp. COSAPI**	**Quarry**							
D.1	Footprint minimization measures at quarry and overburden dump site	Na	√							
D.2	Access road footprint minimization measures	Na	√							
D.3	Previous removal and storage of surface soil layer and vegetation	Na	√							

Inspection Check List		**Inspected Facilities**								
E. Erosion and Run-off Control		**Camp. COSAPI**	**Quarry**							
E.1	Erosion control at borrow pits and surplus material deposits	Na	√							
E.2	Control of inclination of platforms, cut and fill sections and drainage components	Na	√							
E.3	Stabilization / recovery of erosion	Na	√							
E.4	Preservation / non-obstruction of natural drainage	Na	√							
E.5	Run off retention devices	Na	√							

Na	*Not Applicable*	o	*Not Active*	▲	*Not-Verified*	√	*Compliant*	X	*Non-Compliant*

Inspection Check List		**Inspected Facilities**								
F. Construction Front Signaling		**Camp. COSAPI**	**Quarry**							
F.1	Signaling – Access restriction	√	√							
F.2	Signaling – Vehicle and equipment circulation and maneuvers within construction front	√	√							
F.3	Signaling – Traffic safety signaling on access road	√	√							
F.4	Signaling – Health & Safety warnings	√	√							
F.5	Signaling – Quarry buffer zone limits	Na	√							
F.6	Signaling – Environmental markings	Na	Na							

Inspection Check List		**Inspected Facilities**								
G. Worker's Health and Safety		**Camp. COSAPI**	**Quarry**							
G.1	Use of Protection Equipment	√	√							
G.2	Worker's transportation	▲	▲							
G.3	Vehicle and equipment conditions	▲	▲							
G.4	Compliance w/ Safe Work Procedures (SWP) – Use of explosives	Na	▲							
G.5	Compliance w/ SWP – Earth movement	▲	√							
G.6	Compliance w/ SWP – Safe driving	√	√							
G.7	Compliance w/ SWP – Other	▲	▲							
G.8	Emergency equipment (including extinguishers and first aid)	X	√							

Na	*Not Applicable*	o	*Not Active*	▲	*Not-Verified*	√	*Compliant*	X	*Non-Compliant*

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ANNEX 03 - Recommendation Tracking Table

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ANNEX 03
Recommendation Tracking Table

Type 1 - Recommendations Affecting PERU LNG's E&S Assurance Procedures Relative to Construction

Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
05.09	It is necessary to improve feedback of E&S program results to local communities. This was found to be particularly relevant with respect to the Marine Monitoring Program	E&S Program	Risk of image	Pending	
05.09	It is recommended that there be an exchange of information and experiences between the community members participating in participatory monitoring activities on the pipeline's coastal spread and on the Marine Monitoring Program. Among local community members, the Project is only one and the division of monitoring activities may seem unclear	Marine Monitoring Program and Pipeline´s costal spread	Loss of information Risk of image	Pending	
05.09	Continued technical assistance and monitoring of economic projects to be implemented by fishermen with the compensation delivered by PERU LNG under the Fishermen's Compensation Plan will be essential. Due to the large amount and diversity of projects, this will require a specialized team with fulltime dedication. Periodic review of technical assistance staffing needs is recommended	Fishermen´s Compensation Plan	Unsuccessful Compensation Plan Deterioration of relations with local communities Risk of image	Pending	
07.09	Include the verification of the correct use of static current clamps and static current connections to dissipate or equalize static current at all project fuel storage tanks and fuel supply and transportation facilities, in the inspection routines (checklist) carried out by PLNG as part of its construction E&S assurance procedures	Assurance procedures relative to construction	Risk of fire	Pending	

Type 2 - Recommendations Requiring PERU LNG to Request Corrective Action from Contractors

Date	Recommendations	Subject	Risks	Corrective Action Reported	Current Status
07.09	Require additional and/or more frequent induction with regards to proper segregation of waste by workers at construction fronts and appropriate use of waste segregation bins. This should also include guidelines relative maintenance and cleaning of spill trays	Waste segregation	Non-compliance with storage of solid waste in construction fronts	Pending	

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Type 4 - Suggestions Relative to Additionality Programs					
Date	**Suggestion**	**Subject**	**Risks**	**Corrective Action Reported**	**Current Status**
05.09	There is a good opportunity to develop synergies between the two additionality social projects (Agroprogreso and Local Suppliers) and the Fishermen Compensation Management Plan	Agroprogreso, Local Suppliers Programs and Fishermen´s Compensation Plan	Deterioration of relations with local communities. Risk of image	Pending	
07.09	Start new survey of seabirds and marine mammals Monitoring Program	Ecological Monitoring Plan	Risk of biotic integrity decrease	Pending	

Type 5 - Requests for Inclusion of Complementary Information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports					
Date	**Recommendations**	**Subject**	**Risks**	**Corrective Action Reported**	**Current Status**
07.09	In future Quarterly E&S Reports, include the established performance targets in the Environmental KPI Summary Table	Performance indicators	Loss of information	Pending	

Type 6 - Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks					
Date	**Recommendations**	**Subject**	**Risks**	**Corrective Action Reported**	**Current Status**
05.09	The need for rapid conclusion and implementation of a transition plan for the end of the construction process is highlighted. This plan should include both retrenchment issues and influx management strategies	Influx management Retrenchment	Loss of means of livelihood Worker unrest	Pending	
05.09	It is necessary to evaluate the future of CB&I and CDB social initiatives in the transition from the construction to the operation phase. They are not sustainable in themselves; hence it is necessary to start defining what will be the policy of PERU LNG in terms of continuity of these projects in the future	Community relations Social responsibility	Deterioration of relations with local communities	Pending	

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Type 6 - Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks					
Date	**Recommendations**	**Subject**	**Risks**	**Corrective Action Reported**	**Current Status**
05.09	PERU LNG should develop a strategic social responsibility plan in the near future. It will be important for PERU LNG to establish and disclose which kind of projects it wishes to support and develop. In this context, it is also recommended that the overall project strategy for the operation phase be integrated to the extent possible	Social responsibility	Deterioration of relations with local communities	Pending	

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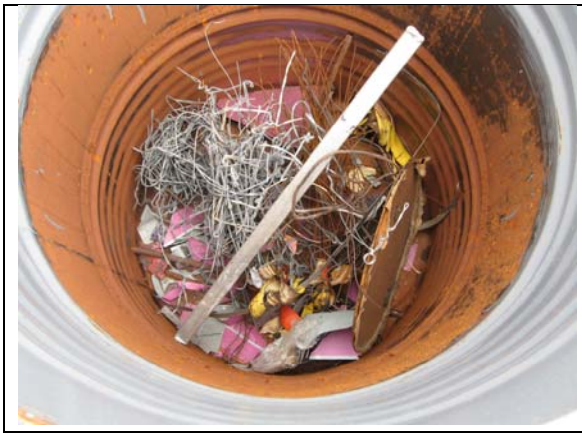
ANNEX 04 - Photographic Records of Mission Observations

	**Site:** Construction front in the LNG Plant Utilities Sector **Observations**: Scrap waste container with leftover food

	**Site**: Construction front in the LNG Plant Process Sector **Observations:** Fuel supply tank not provided with grounding metallic connections or conductors to neutralize potential static charges before the transfer of liquid hydrocarbons between containers or during the transfers, in order to prevent ignition of vapors due to electrical static discharge

	**Site**: LNG Plant Main Process Area **Observations**: Mobile generator without spill tray to collect possible fuel or lubricant seepages

	**Site:** LNG Plant construction front **Observations**: Spill tray requiring maintenance due to lack of impermeability
	**Site:** LNG Tank **Observations**: Workers with appropriate PPE for work at height
	**Site**: COSAPI Camp **Observations:** First Aid Kit without all required instruments and medicines

	**Site**: COSAPI Camp **Observations**: Perforated spill tray, belonging to lubricant supply truck, and which requires replacement or fixing

	**Site:** Marine Terminal **Observations**: Apropriate Traffic Signage