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## **PERU LNG**

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### **Independent Environmental and Social Monitoring – IESM March 01 to 03 /2010 Monitoring Mission**

### **Pipeline Final Report**

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March 2010



**JGP**

**Consultoria e  
Participações Ltda.**

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**Pipeline Final Report**

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## 1.0

### Introduction

This is the IESM quarterly monitoring report on the PERU LNG Pipeline referring to Q4 2009. It summarizes IESM supervision and monitoring activities performed during the March 01 to March 03 2010 IESM Mission at the Pipeline. During this Mission, several Central and Western reaches of the RoW were inspected, and decommissioned campsite areas were also visited. Main ongoing activities were biorestoration of the RoW, though some reinstatement of access roads was also ongoing. Further to construction activities, ongoing environmental and social programs and internal and external E&S assurance procedures were also verified.

Simultaneously, several meetings focused on presentation of activities developed by PERU LNG were held, both at Project sites and at nearby communities.

All activities were accompanied by the environmental, social and health and safety staff of both PERU LNG and TECHINT, the Pipeline contractor, as pertinent during each Mission activity.

IFI representatives participating in the March IESM Mission included:

|                |                                 |
|----------------|---------------------------------|
| Leyla Day      | Social Specialist – IFC         |
| Rosa Orellana  | Environmental Specialist - IFC  |
| Maria da Cunha | Social Specialist - IADB        |
| Ximena Herbas  | Environmental Specialist – IADB |

JGP's monitoring team included:

|                  |                                                      |
|------------------|------------------------------------------------------|
| Juan Piazza      | Main Environmental and Social Specialist             |
| Alejandro Dorado | Ecologist – Biodiversity Specialist                  |
| Humberto Vera    | Local Environmental and Health and Safety Specialist |
| Guillermo Salas  | Local Social Specialist                              |

## 2.0

### List of Monitoring Activities

March 2010 IESM Mission planning was conducted during the preceding weeks, with the objective of defining inspections to be performed, meetings to be held and other activities to be included, based on information obtained from previous Missions. This Mission concentrated on analysis of PERU LNG's Q4 2009 Report and on construction progress verified on the field visits, as well as on the preliminary information forwarded by PERU LNG on the transition between construction and operation phases.

It is important to note, as mentioned in previous reports, that the IESM Missions are necessarily selective, as it is not possible to visit all work fronts and/or review all environmental and social programs and documents in each Mission. Therefore, Mission planning is a key success factor, and cooperation and logistic support from both PERU LNG and TECHINT is essential. The IESM Team wishes to register that it received full support from PERU LNG and TECHINT during the March Mission, as necessary to effectively execute all planned activities. In spite of this, in some cases, time planned and effectively available for some activities limited the scope of review that was possible. Long distance trips were necessary to visit different regions and campsites and to meet with local players. Reference to time limitations included in this report are meant only to justify limits to the IESM Team's scope of review and should not be interpreted as an indication of lack of cooperation by PERU LNG or TECHINT.

Activities during the Mission included:

Monday - March 01, 2010 (Ayacucho region):

Environmental and H&S Group:

*Morning*

- Biorestored RoW reaches presented by PERU LNG in the field (Kp 60 to 93).
- Ichu transplant (Kp 93).
- Erosion control (Kp 73).
- Visit to Chaquicocha camp area (Kp 93).

*Afternoon*

- Visit to Yucay and Accocro area. Reinstated river crossing (Kp 67 to 68).

Social Group:

*Morning*

- Meeting with ProNaturaleza at PMSAP office in Huamanga with presentation of PMSAP activities and progress to date.
- Presentation of the Monitoring Data Management System (SIRM) at PERU LNG office in Huamanga.
- Desk review of Pipeline Compensation Status.

*Afternoon*

- Meeting with presidents and representatives of two communities of the Huamanga Province, Ayacucho.
- Meeting with PERU LNG Community Relations Team.

Tuesday - March 02, 2010:

Environmental and H&S Group:

*Morning*

- Visit to Campana camp area (Kp 21 to 36). Reinstated and biorestored RoW and reinstatement of access roads and shoeflies.

*Afternoon*

- Visit to geotechnical and reinstated works and permanent erosion control.
- Visit to Valve 1.
- Meeting and presentation of PERU LNG's reinstatement works, at PERU LNG offices, in Ayacucho.
- Review of action on previous IESM recommendations and other activities developed since last IESM Team Monitoring visit in December 2009.

Social Group:

*Morning*

- Meeting with PERU LNG's team for status review of social programs and travel to visit communities of the Huamanga Province. Presentation of Rural Microfinance Program (RMF).
- Meeting with social program implementing partners (FINCA PERU).
- Participation in an ongoing social program activity with community representatives.

*Afternoon*

- Travel to a community within the Huamanga Province, Ayacucho. Meeting with social program implementing partner, Atinchik.
- Participation in an ongoing social program activity with community representatives.



Wednesday - March 03, 2010:

Environmental and H&S Group:

*Morning*

- Trip between Ayacucho and Pisco (Paracas) with RoW inspection of the Pipeline's Western Spread.
- Inspection of reinstatement works (Kp 80).
- Inspection of River Palmitos crossing (Kp 178).

*Afternoon*

- Inspection of Valve 7 near Rumichaca campsite (Kp 188).
- Inspection of reinstatement works on River Pampas crossing (Kp 190).
- Inspection of access road to Kp 200.
- Inspection of reinstatement works on River Pisco crossing (Kp 341).

Social Group:

*Morning*

- Trip to Huamanga region. Irrigation Infrastructure Program. Meeting with social program implementing partner (TADEPA) and participation in an ongoing activity with community representatives.

*Afternoon*

- Travel to Huaytara area. Visit to PMSAP ongoing monitoring activities and interview with local E&S monitors.

### **3.0**

#### **Construction Summary**

##### 3.1 General

Pipeline construction work, as reported by PERU LNG, was completed by the end of December 2009 and mechanical assembly completion was completed in January 2010. Anchiuay, Chaquicocha, Suyubamba and Campana campsites were closed. It was reported that Chiquintirca camp will be closed by early March, Patibamba camp in mid March and Rumichaca camp by end March. TECHINT considers that all works will be finished and associated camps and all other facilities will be closed by the end of March.

PERU LNG informed that the rainy season has not significantly interrupted progress since the last Lender Mission (December 2009) and there were no major environmental issues or incidents in the period.

Although PERU LNG informed in its 4Q 2009 ESHS Quarterly report that bio restoration works would be finished in January, on the occasion of the March 2009 IESM Mission, there were several ongoing works that were not finished due to community issues such as:

- Access road reinstatement works between Kp 18 and Kp 26, where two active construction fronts were inspected (Kp 19 and Kp 24);
- Nine kilometers of reinstatement and bio restoration were pending, including the reach between Kp 18 and 21, and six km in the Vinchos community that is impeding construction work while negotiations for complementary compensation are ongoing;
- Minor corrective measures are ongoing throughout the alignment, as requested by PERU LNG during its decommissioning inspections (Punch List procedure);
- Decommissioning of the three remaining operational camps (as mentioned above) is also still pending.

Level of progress on bio restoration was reported at 92%.

PERU LNG has established a decommissioning Punch List and is conducting detailed inspections of the RoW with TECHINT. All of the RoW but the nine km mentioned above has been accepted.

Whereas works on the RoW are very near completion, works on shoeflies and access roads built for the project are not as advanced in all cases.

It was reported that reinstatement of the access road between Kp 18 and Kp 26 was delayed because the community asked for it to remain. In the end, this request was not accepted because 4 of the 8 km alignment are within or very near the RoW and DGAEE understands that a permanent access road cannot remain operative on top of the RoW.

Similarly, a 4.7 km access leading to Kp 200 will be closed, in spite of community requests, in this case due to environmental reasons, since an ecologically sensitive area (Andean lake) is reached by the access.

On the other hand, it was reported that the community of Anchiuay presented a request to DGAAE for a 4.8 km access that passes by Oscoccocha, a community within Chiquintirca, to remain. All of the alignment of this access is within Chiquintirca community land. DGAAE requested letters from the Municipality of Anco which need to take charge of the roads maintenance, and of the Community itself demonstrating overall acceptance of the population that they want this road to remain open. PERU LNG is working on the EMP to modify the ESIA which calls for this road to be reinstated.

Finally, it was reported that the access to Ccochas will be the last to be closed, currently programmed for the end of April.

Further to the accesses mentioned above, several small reaches of shoeflies and accesses were reported to be undergoing reinstatement and/or bio restoration. Additionally, some public roads that were significantly improved by the Project for construction logistics were reported to have been returned to the communities.

Commissioning of the pipeline was also in progress during the March IESM Mission. This includes filling the pipeline with gas and purging and venting each valve station, as well as testing (synchronizing) equipment. This activity was nearing completion and preparations for purging and venting Valve 14 near the LNG Plant were observed. Rigorous safety was in place. Furthermore, equipment for noise monitoring during venting (that lasts about 30 minutes) was in place, with monitoring stations at 200 m and 400 m.

TECHINT had about 630 workers on the Project during the Mission, most of which (about 500) on the Central Spread. Main activities besides bio restoration and execution of corrective actions requested through the decommissioning Punch List procedure, include decommissioning of camp facilities and demobilization of equipment.

Along the Western spread, geotechnical / reinstatement works was reported to be ongoing, though demobilization is the activity engaging the largest amount of workers.

Further to TECHINT's workforce, PERU LNG, through a contractor, is monitoring bio restored areas (38 "vigilantes" from local communities) to ensure that cattle and other animals do not graze on the RoW. This will be important for another two to three months, when the roots of the naturalized pastures used for bio restoration are expected to be fully developed.

Further to the RoW decommissioning Punch List, PERU LNG reported it has specific decommissioning Punch Lists for camps, extra space and shoeflies and accesses. These were reviewed after the Mission and found to be generally adequate.

It is important to note in this regard, that in the case of bio restoration works, TECHINT is only supplying labor and PERU LNG is directly responsible for determining what type of bio restoration will be implemented and where.

PERU LNG informed that most of its environmental team remains on the Project. This environmental team will continue executing the Pipeline monitoring. TECHINT will keep one environmental officer until the end of March.

## 4.0

### Construction-Related Performance

#### Scope of the IESM Team's Review

During the Mission, the IESM Team held inspections in several segments of the right-of-way, both in Western and Central Spreads.

Main segments inspected along the Pipeline right-of-way were:

- Kp 93 (ichu translocation)
- Chaquicocha campsite (decommissioning)
- Kp 82 (biorestoration)
- Kp 77 (erosion control)
- Valve # 3
- Accocro campsite (decommissioning)
- River Yucay crossing support area and access roads (Kp 64)
- Kp 35 (biorestoration)
- Valve # 1 (Kp 30)
- Kp 23 (bofedales reinstatement)
- Kp 23+500 (biorestoration)
- Kp 24 geotechnical works
- Kp 26+150 (biorestoration)
- Kp 108+300 (biorestoration)
- Kp 109+800 (biorestoration)
- Kp 109 Libertadores road crossing
- Crossing of River Palmito (Kp 178)
- Valve # 7 (Kp 190)
- Crossing of River Pampas (Kp 190)
- Kp 200 (access road restoration)
- Crossing of River Pisco (Kp 341)

#### 4.1 Environmental Compliance

During field inspections, the IESM Team verified the adequate application of all construction procedures, according to PERU LNG's registered commitments and the applicable TECHINT ESIP's. The most relevant positive aspects and shortcomings, verified during the Q1 2010 IESM Mission, are summarized as follows:

##### *Construction Fronts - Housekeeping - Waste Management - Pollution Prevention*

Active construction fronts (other than biorestore) during the Mission were observed only at Kp 19 and Kp 24 and works focused on reinstatement of an access road and along the RoW. No shortcomings relative to housekeeping and pollution prevention were observed.

##### *Construction Fronts - Control of RoW Clearing - Footprint Management*

These aspects are no longer pertinent given the construction process is nearing conclusion.

##### *Construction Fronts - Erosion and Runoff Control - Wetland Crossings*

Whereas no erosion problems were observed along the RoW, some concerns relative to erosion control procedures must be registered.

At some points where the RoW is intercepted by roads, runoff from the road surface is flowing over the RoW and is affecting areas that have been biorestore. In some cases it is flowing along the RoW's slope breakers and sediment deposition is leading to overflowing. Though problems observed were minor, the risk for more significant impacts exists and in all cases observed the applicable corrective measures are simple.

On the steep slope going down to the Yucay River crossing, the access road that zig-zags down besides the alignment had been recovered. Though this is a public road, it had its alignment slightly modified during construction and was upgraded. No adequate drainage was in place and erosion has occurred where rainfall is allowed to flow away from the road's surface in the direction of the slope's natural drainage channels. Similarly, part of the road's surface is drained towards slope breakers in the pipeline's RoW, and this flow of rainfall could cause some erosion problems (or at least risks) on the downstream end of the breakers.

It is the opinion of the IESM Team that a road without drainage is not complete and hence cannot be considered to have been adequately "returned" to the community. Furthermore, the standard of environmental care should be uniform throughout the Project, and hence the quality of drainage and erosion control in access roads that have been significantly altered by the Project should be equivalent to that along the pipeline's RoW.

Along another road (Ayacucho to Patibamba), significant improvements (widening of segments, containment and erosion control structures, among other) were implemented by the Project. These were generally in good condition, but near the Torobamba River crossing a large gabion structure had collapsed and part of the road platform had been compromised, creating a safety issue. Though PERU LNG indicated it has “returned” the road and has no responsibility for maintenance, there has been no documented “transfer of responsibility” procedure. It is important that all improvements executed by the Project be inspected (through the Punch List procedure) and that any problems such as the one by the Torobamba River mentioned above be corrected. A photographic cadastre of the final condition should be produced in all cases, and PERU LNG should ensure that this cadastre is received by third parties (or at least is deposited with a Notary Public) to serve as evidence of its proper conclusion/recovery of all implemented improvements, should future problems resulting from poor future maintenance arise.

Another concern with erosion risks is related to the 6 km reach within the Vinchos community, that is a sector highly vulnerable to erosion that has not been fully reinstated and bio-restored because the community is not allowing construction to proceed while its claims for complementary compensation are not resolved. Though this risk is not strictly a PERU LNG responsibility, when construction resumes it will be important to verify any damage to third party property (i.e. adjacent farmlands) and to engage with community and affected parties in order to assist with corrective actions as possible.

Even greater risks are likely to result from the decision by DGAAE to allow the 4.8 km access built by the Project near the Oscoccochas village to remain, that was not inspected during the Mission. This village is part of Chiquintirca community, though the access’ alignment is entirely within Chiquintirca community land. It was reported that sub-soil and topsoil piles are currently aligned by the road and contained by provisional wooden fences. Since these soils will no longer be used in reinstatement, an alternative decommissioning strategy needs to be designed and implemented. This should include removal of all provisional fences, spreading of soil piles to avoid future erosion without impacting adjacent areas, bio restoration and conclusion of road drainage. It is the IESM Team’s understanding that only after such measures are implemented can the access be considered to be complete and “transfer” to the community (that has limited maintenance capabilities) can take place. The IESM Team also understands that PERU LNG will continue to be responsible for the access road until the “transfer” effectively (and formally) takes place.

With regards to wetland crossings, reinstatement and bio restoration of a bofedal area at Kp 23 was inspected. Results were found to be outstanding and demonstrate that the procedures to protect the bofedal during construction were highly effective.

### *Construction Fronts - Reinstatement/Biorestoration*

In most of the RoW where reinstatement works has already been completed, permanent geotechnical works and bio restoration were well able to endure the rainfall season.

In general, the ongoing reinstatement and bio restoration works observed during the March Mission were considered excellent. Bio restoration works were inspected mainly in the Central Spread, in the River Yuca region, River Pampas region, River Palmitos region (geotechnical works) and in areas close to the Chaquicocha campsite (*ichu* translocation) and Campana campsite (*bofedales*).

Special reinstatement/biorestoration was implemented in the vicinity of the Accocro camp. Here, extensive rock management was executed, and excess rocks were used to build property fences and/or geotechnical stabilization works. As a result, areas that were previously unused because of rocks have now been planted by the local farmers and the limits of the RoW are hardly perceivable.

At the Pisco River crossing (Kp 341) was visited, agricultural activities (e.g. tomatoes) and shrimp traps in the river were observed. No erosion processes or unstable conditions were identified.

### *Campsites - Housekeeping - Waste Management - Pollution Prevention*

During the Mission no inspections were undertaken at the remaining campsites.

### *Campsites - Erosion Control - Footprint Management - Decommissioning*

No erosion control problems were observed at the decommissioned campsite areas that were inspected (Accocro, Campana, Chaquicocha). Decommissioning procedures were considered complete and included reinstatement of the sites to their original topography and bio restoration, as well as implementation of slope breakers or other geotechnical erosion control measures as applicable. Soil investigations to confirm absence of contamination in key areas was reported to be complete, with no negative results (i.e. no evidence of contamination). In the specific case of Accocro, much of the camp's area was being farmed.

## 4.2 Health and Safety Compliance

No observations were raised in relation to construction health and safety during the March 2010 IESM Mission.

#### 4.3 Social and Community Relations Compliance

A recommendation to document background noise before Pipeline operation commences in the Ccollpas Nuevo region was being executed during the Mission.

In the vicinity of Valve N° 1 (Kp 30), noise from the thermo-ventilators may be reaching a group of nearby houses but was not considered a material issue as noise is temporary in nature.

Continued engagement with local communities during construction was observed, and a significant amount of local labor was involved with biorestoration activities. Working with community “vigilantes” was also a positive aspect.

### **5.0**

#### **Internal E&S Assurance**

##### 5.1 PERU LNG’s E&S Supervision and Audits

In December 2009, PERU LNG contracted RSK UK Ltd to conduct a second independent audit on PERU LNG’s ESHS Management System. This audit focused on PERU LNG’s construction phase Environmental Assurance Plan and on the ESHS Non-Conformance and Corrective Action Procedure. The IESM Team had a chance to review the Scope of Work to verify if all key aspects were included (see Recommendation Tracking Table in **Annex 02**).

The audit was performed in December and included a desktop review and analysis of pertinent documents, field inspections and site visits to different open work fronts along the Pipeline RoW (both spreads). The audit was conducted in compliance with ISO 19011:2002 requirements. At the time of the March IESM Mission, the final version of the Audit Report had not yet been submitted. Preliminarily, PERU LNG has reported that no major non-conformities were identified, although some opportunities for improvements were observed.

The results and recommendations of the RSK-UK audit will be summarized in the next Quarterly Environmental and Social Compliance Report.

Also during the March Mission, the IESM Team discussed decommissioning procedures with PERU LNG’s E&S Internal Assurance Staff. A RoW decommissioning Punch List is being used in order to ensure that all key aspects are verified during final RoW inspections. This is a two-stage procedure where corrective actions requested in an initial inspection are closed in complementary inspections once TECHINT informs it has concluded their implementation. Only after this process is complete does PERU LNG “accepts” receiving the RoW as complete. As pointed out earlier in this report, this acceptance does not include

biorestitution activities that are being managed directly by PERU LNG with TECHINT's responsibility limited to supplying the required workforce.

The RoW decommissioning Punch List was verified by the IESM Team and found adequate. Other Punch Lists are in use to verify extra-space, shoefly and access road and camp decommissioning. At the time of the March Mission, all but 9 km of the RoW had been "accepted" by PERU LNG (6 of which within Vinchos community).

It was informed that environmental inspectors have continued to monitor construction works on a routine basis (2 to 3 full-time inspectors for each 'work front'). Both PERU LNG and TECHINT reported that they have continued with daily, weekly, and periodic monitoring activities. This monitoring during 4Q 2009 included monthly joint camp and RoW inspections.

TECHINT has established internal inspection targets. During 4Q 2009, the target was 154 environmental audits and inspections. The Pipeline Contractor executed 166, thus achieving 108% in relation to the established target.

Several other environmental surveys and analysis were carried out in 4Q 2009, as part of the internal assurance implementation process. These included monitoring of water levels in lagoons (Yanacocha, Morococha and Panacocha). Results showed a normal seasonal behavior with minor variations recorded over time. Water level monitoring will be discontinued as soon as all construction activities in the area have been adequately completed.

Soil analysis at the demobilized camps (Huaytara I, Huaytara II, Anchiuay, Accocro, Las Nubes 2 and Huaychao) indicated that there is no land contamination in these locations.

## 5.2 Construction Related Monitoring and Performance Assessment

Monitoring results obtained during October, November and December 2009 were duly presented to OSINERGMIN in the respective Monthly Monitoring Reports and are summarized below.

### Water Supply Monitoring

The results for water supply source monitoring at active camps during Q4 2009 is shown in **Table 5.2-1**. As shown, only a few selected parameters were monitored at each source.

**Table 5.2-1**  
**Water Supply Source Monitoring Results**

| Camp                                                                                                  | BOD<br>(mg/L) |    |    | Faecal Coliforms<br>(NMP/100 ml) |        |     | Total Coliforms<br>(NMP/100 ml) |        |       | Sulphates<br>(mg/L) |     |   |
|-------------------------------------------------------------------------------------------------------|---------------|----|----|----------------------------------|--------|-----|---------------------------------|--------|-------|---------------------|-----|---|
|                                                                                                       | STD: N.A.     |    |    | STD: N.A.                        |        |     | STD: N.A.                       |        |       | STD: N.A.           |     |   |
|                                                                                                       | O             | N  | D  | O                                | N      | D   | O                               | N      | D     | O                   | N   | D |
| Santa Beatriz<br>(Western Spread)<br><br>Water Supply Source:<br>Puquial Rosa 2                       | -             | -  | -  | -                                | -      | -   | -                               | -      | -     | -                   | 366 | - |
| La Bolívar<br>(Western Spread)<br><br>Water Supply Source:<br>Pozo de Agua,<br>Fundo San Isidro       | -             | <2 | -  | -                                | <1.8   | -   | -                               | 23     | -     | -                   | -   | - |
| Huancaccasa<br>(Western Spread)<br><br>Water Supply Source:<br>Puquial and River Ica                  | <2            | -  | -  | 46+                              | -      | -   | 110                             | -      | -     | -                   | -   | - |
| Rumichaca<br>(Western Spread)<br><br>Water Supply Source:<br>Quebrada Huillcani                       | -             | -  | 2  | -                                | -      | 7.8 | -                               | -      | 2,300 | -                   | -   | - |
| La Espera<br>(Western Spread)<br><br>Water Supply Source:<br>Quebrada Jolpahuayco and<br>Río Apacheta | -             | -  | <2 | -                                | 16,000 | 130 | -                               | 16,000 | 4,900 | -                   | -   | - |
| Chiquintirca<br>(Central Spread)<br><br>Water Supply Source:<br>Quebrada Jollpa                       | -             | -  | <2 | -                                | -      | 33  | -                               | -      | 84    | -                   | -   | - |
| Suyubamba<br>(Central Spread)<br><br>Water Supply Source:<br>Quebrada Suyubamba                       | -             | -  | <2 | -                                | -      | 14  | -                               | -      | 46    | -                   | -   | - |
| Anchihuay<br>(Central Spread)<br><br>Water Supply Source:<br>Quebrada Sachapampa                      | -             | 2  | -  | -                                | 490    | -   | -                               | 1,100  | -     | -                   | -   | - |
| Patibamba<br>(Central Spread)<br><br>Water Supply Source:<br>Manantial de Masumachay                  | -             | 2  | -  | -                                | 2      | -   | -                               | 490    | -     | -                   | -   | - |

O: October; N: November; D: December.

N.A.: Not applicable.

It is important to mention that in November 2009, Sulphates were monitored at the Puquial Rosa 2 source at Santa Beatriz camp (366 mg/L as shown in Table 5.2-1), due to high Sulphates concentration found in previous monthly monitoring results for treated water (the result obtained in October is shown in the next section – Table 5.2-2). Final conclusion is that the original amount of Sulphates was already high in the supply source sample, proving that the concentrations found in the potable water treatment plant samples were not due to a shortcoming of the treatment system.

Apacheta River monitoring (La Espera camp) was repeated in December 2009 due to doubts raised by the November results that were not complete.

#### Potable Water Treatment Monitoring

Monthly monitoring of the Potable Water Treatment Plants from active camps during Q4 2009 included the following parameters: Sulphates, Total and Faecal Coliforms, Color, Total Hardness, Total Iron, Total Chlorine, Turbidity and Total Dissolved Solids (TDS). Daily monitoring was carried out for pH and Residual Chlorine. Parameters which surpassed the applicable standards are shown in **Table 5.2-2**.

**Table 5.2-2**

#### **Potable Water Treatment Plants Monitoring - Partial Results**

| Camp                              | Total Coliforms<br>(NMP/100 ml)<br>STD: 0 |            |            | TDS<br>(mg/L)<br>STD: 1,000 mg/L |              |     | Turbidity<br>(NTU)<br>STD: 5 NTU |             |     | Sulphates<br>(mg/L)<br>STD: 250 mg/L |            |            |
|-----------------------------------|-------------------------------------------|------------|------------|----------------------------------|--------------|-----|----------------------------------|-------------|-----|--------------------------------------|------------|------------|
|                                   | O                                         | N          | D          | O                                | N            | D   | O                                | N           | D   | O                                    | N          | D          |
| Santa Beatriz<br>(Western Spread) | -                                         | <1.1       | -          | -                                | <b>1,008</b> | 977 | -                                | 1.4         | -   | <b>347</b>                           | <b>375</b> | <b>392</b> |
| La Bolívar<br>(Western Spread)    | -                                         | -          | <1.1       | -                                | -            | 375 | -                                | -           | 0.6 | -                                    | -          | 104        |
| Huancaccasa<br>(Western Spread)   | -                                         | <1.1       | -          | -                                | 196          | -   | -                                | 1.3         | -   | -                                    | 35         | -          |
| Rumichaca<br>(Western Spread)     | -                                         | -          | <b>2.2</b> | -                                | -            | 99  | -                                | -           | 6   | -                                    | -          | 7          |
| La Espera<br>(Western Spread)     | -                                         | <1.1       | -          | -                                | 47           | -   | -                                | <b>12.3</b> | 3.7 | -                                    | 6          | -          |
| Chaquicocha<br>(Western Spread)   | -                                         | <1.1       | -          | -                                | 41           | -   | -                                | 1.7         | -   | -                                    | 1          | -          |
| Chiquintirca<br>(Central Spread)  | -                                         | -          | <1.1       | -                                | -            | 94  | -                                | -           | 8.3 | -                                    | -          | 3          |
| Suyubamba<br>(Central Spread)     | 3.6                                       | <b>2.2</b> | -          | 85                               | -            | -   | 0.5                              | -           | -   | 5                                    | -          | -          |
| Anchihuay<br>(Central Spread)     | -                                         | <1.1       | -          | -                                | 123          | -   | -                                | 0.5         | -   | -                                    | 9          | -          |
| Campana<br>(Central Spread)       | -                                         | <1.1       | -          | -                                | 105          | -   | -                                | 0.8         | -   | -                                    | 4          | -          |
| Patibamba<br>(Central Spread)     | -                                         | -          | <1.1       | -                                | -            | 280 | -                                | -           | 0.4 | -                                    | -          | 5          |

O: October; N: November; D: December.

STD: Standard Limit. In this case, as recommended by the Compliance Monitoring 3087-D-PR-100014, Table 2.

The **highlighted values** are those which surpass the standard limit.

Potable water monitoring conducted in Q4 2009 showed that pH and residual chlorine measurements during daily sampling were compliant with applicable standards.

As mentioned in the previous section, in October Sulphates monitored at Santa Beatriz camp's potable water treatment system was carried out, since high concentrations of these compounds had been found in previous monthly analyses. Results continued to be higher than the applicable standard. In November, sample analysis of the Puquial Rosa 2 supply source proved that high Sulphates concentration was already present. December 2009 results for the potable water treatment system also showed high concentration of Sulphates.

In October 2009, the result obtained for Total Coliforms at the Suyubamba camp potable water treatment plant was above the applicable standard value. This parameter was re-sampled in November, and still presenting high values. This might be due to the presence of livestock in the area where sampling takes place, thus contributing for water contamination. While this situation is not under control, drinking this water and using it to prepare meals was avoided, as a precaution.

In November 2009, at Huancaccasa camp, the concentration of Total Dissolved Solids (TDS) was slightly higher than the applicable standard.

In the case of La Espera camp, Turbidity was above allowed limits during November and December 2009.

In December 2009, at the Rumichaca camp, Total Coliforms and Turbidity exceeded standard values. Regarding Turbidity, the same occurred at La Espera camp during November and December and at Chiquintirca camp in December 2009. Due to intensification of rain precipitation, which increased river flow and runoff, Turbidity increased. As a corrective action to diminish Turbidity, TECHINT informed that frequency of filter washouts would be intensified and the Aluminum Sulphate concentration would be reconsidered. Water for human consumption at this camp was interrupted during Q4.

### Effluent Monitoring

During Q4 2009, the monthly domestic effluents monitoring included black and greywater treatment systems.

Parameters considered for both black and greywater treatment systems were: Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Faecal Coliforms, Phenols, Phosphorous and Oil and Grease. Daily monitoring was carried out for the blackwater treatment system only, and included pH and Residual Chlorine analyses.

Monitoring results of black and greywater treatment systems located in the Western Spread camps of Santa Beatriz, La Bolívar, Huancaccasa, Rumichaca and La Espera, are shown in **Table 5.2-3**. Only results which exceed applicable standards are shown.

**Table 5.2-3**  
**Monthly Monitoring - Western Spread Camps**  
**(Blackwater and Greywater Treatment Systems) – Partial Results**

| Camp          | Parameters                    |                               |                                     |                                   |                                 |                                   |                             |
|---------------|-------------------------------|-------------------------------|-------------------------------------|-----------------------------------|---------------------------------|-----------------------------------|-----------------------------|
|               | TSS<br>(mg/L)                 | BOD<br>(mg/L)                 | Faecal<br>Coliforms<br>(NMP/100 ml) | Ammonium<br>Nitrogen<br>(mg/L)    | COD<br>(mg/L)                   | Total P<br>(mg/L)                 | Oil and<br>Grease<br>(mg/L) |
|               | STD: 50                       | STD: 50                       | STD: 400                            | STD: 10                           | STD: 250                        | STD: 2                            | STD: 10                     |
| Santa Beatriz | 55 (D)                        | -                             | -                                   | 22.3 (O)<br>26.8 (N)<br>100.0 (D) | -                               | 2.46 (O)<br>4.26 (N)<br>6.99 (D)  | -                           |
| La Bolívar    | 107 (O)<br>56 (N)             | -                             | -                                   | 18.5 (D)                          | -                               | 6.73 (O)<br>6.70 (N)<br>7.82 (D)  | -                           |
| Huancaccasa   | 216 (O)<br>160 (N)<br>180 (D) | 54 (O)<br>285 (N)<br>84 (D)   | 790,000 (N)                         | 35.6 (O)<br>71.6 (N)<br>66 (D)    | 466 (O)<br>545 (N)<br>682 (D)   | 5.66 (O)<br>7.74 (N)<br>9.25 (D)  | -                           |
| Rumichaca     | 150 (O)<br>142 (N)<br>326 (D) | 56 (O)<br>368 (N)<br>84 (D)   | -                                   | 63.2 (N)<br>27.6 (D)              | 466 (O)<br>640 (N)<br>476 (D)   | 4.95 (O)<br>5.98 (N)<br>4.02 (D)  | 11.2 (O)<br>12.8 (D)        |
| La Espera     | 278 (O)<br>96 (N)<br>214 (D)  | 477 (O)<br>433 (N)<br>326 (D) | -                                   | 59.2 (N)<br>63 (D)                | 1,196 (O)<br>664 (N)<br>672 (D) | 5.60 (O)<br>6.20 (N)<br>10.97 (D) | 10.2 (D)                    |

(O): October; (N): November; (D): December.

STD: Standard Limit. In this case, as recommended by the Compliance Monitoring Procedure 3087-D-PR-100014, Table 2. For BOD, it was required to change the value from 15 to 50 mg/L. For Faecal Coliforms it was required to change the value from 100 to 400 NMP/100ml.

Treatment system monitoring in the Central Spread camps of Patibamba, Campana, Chiquintirca, Suyubamba, Anchiuay and Chaquicocha was conducted separately for each effluent stream (blackwater and greywater) to have a better evaluation of the real situation of treatment performance, as recommended in the Water Treatment Systems Adjustment Program.

Results are shown in **Table 5.2-4** (blackwater) and **Table 5.2-5** (greywater). Only results which exceeded applicable standards are shown.

**Table 5.2-4**  
**Monthly Monitoring - Central Spread Camps**  
**(Blackwater Treatment Systems) - Partial Results**

| Camp         | Parameters                    |                               |                                   |                                   |                                    |                          |
|--------------|-------------------------------|-------------------------------|-----------------------------------|-----------------------------------|------------------------------------|--------------------------|
|              | TSS<br>(mg/L)                 | BOD<br>(mg/L)                 | Ammonium<br>Nitrogen<br>(mg/L)    | COD<br>(mg/L)                     | Total P<br>(mg/L)                  | Oil and Grease<br>(mg/L) |
|              | STD: 50                       | STD: 50                       | STD: 10                           | STD: 250                          | STD: 2                             | STD: 10                  |
| Patibamba    | 52 (O)<br>53 (N)              | 56 (N)                        | 23.9 (O)<br>156.4 (N)<br>19.0 (D) | -                                 | 7.02 (O)<br>4.04 (N)<br>10.33 (D)  | -                        |
| Campana      | 190 (O)<br>193 (N)<br>133 (D) | 497 (O)<br>358 (N)<br>344 (D) | 50.8 (N)<br>24.8 (D)              | 1,202 (O)<br>1,726 (N)<br>805 (D) | 7.87 (O)<br>8.57 (N)<br>7.78 (D)   | 17.9 (O)                 |
| Camp         | Parameters                    |                               |                                   |                                   |                                    |                          |
|              | TSS<br>(mg/L)                 | BOD<br>(mg/L)                 | Ammonium<br>Nitrogen<br>(mg/L)    | COD<br>(mg/L)                     | Total P<br>(mg/L)                  | Oil and Grease<br>(mg/L) |
|              | STD: 50                       | STD: 50                       | STD: 10                           | STD: 250                          | STD: 2                             | STD: 10                  |
| Chiquintirca | 59 (O)<br>118 (N)<br>148 (D)  | 232 (O)<br>118 (N)<br>149 (D) | 16 (O)<br>80.6 (N)<br>37.9 (D)    | 451 (O)<br>563 (N)<br>545 (D)     | 7.23 (O)<br>11.49 (N)<br>11.44 (D) | 17.1 (N)                 |
| Suyubamba    | 140 (O)<br>114 (N)<br>156 (D) | 380 (O)<br>122 (N)<br>220 (D) | 43.2 (N)<br>31.8 (D)              | 925 (O)<br>393 (N)<br>470 (D)     | 3.68 (O)<br>8.37 (N)<br>3.47 (D)   | 20.8 (O)<br>14.1 (N)     |
| Anchihuay    | 88 (O)<br>57 (N)              | 227 (N)                       | 145.5 (O)<br>50.5 (N)             | 277 (O)<br>632 (N)                | 10 (O)<br>4.88 (N)                 | -                        |
| Chaquicocha  | 122 (O)<br>142 (N)<br>313 (D) | 210 (O)<br>197 (N)<br>110 (D) | 36.7 (N)<br>18.1 (D)              | 522 (O)<br>550 (N)<br>523 (D)     | 7.61 (N)<br>9.24 (D)               | -                        |

(O): October; (N): November; (D): December.

STD: Standard Limit. In this case, as recommended by the Compliance Monitoring Procedure 3087-D-PR-100014, Table 2. For BOD, it was required to change the value from 15 to 50 mg/L. For Faecal Coliforms it was required to change the value from 100 to 400 NMP/100ml.

**Table 5.2-5**  
**Monthly Monitoring - Central Spread Camps**  
**(Greywater Treatment Systems) - Partial Results**

| Camp         | Parameters                    |                               |                                |                                   |                                    |                          |
|--------------|-------------------------------|-------------------------------|--------------------------------|-----------------------------------|------------------------------------|--------------------------|
|              | TSS<br>(mg/L)                 | BOD<br>(mg/L)                 | Ammonium<br>Nitrogen<br>(mg/L) | COD<br>(mg/L)                     | Total P<br>(mg/L)                  | Oil and Grease<br>(mg/L) |
|              | STD: 50                       | STD: 50                       | STD: 10                        | STD: 250                          | STD: 2                             | STD: 10                  |
| Patibamba    | 128 (O)<br>153 (N)<br>94 (D)  | 259 (O)<br>284 (N)<br>309 (D) | -                              | 593 (O)<br>1,402 (N)<br>629 (D)   | 2.04 (O)<br>3.06 (N)<br>3.45 (D)   | 16.1 (N)                 |
| Campana      | 190 (O)<br>193 (N)<br>133 (D) | 497 (O)<br>358 (N)<br>344 (D) | 50.8 (N)<br>24.8 (D)           | 1,202 (O)<br>1,726 (N)<br>805 (D) | 7.87 (O)<br>8.57 (N)<br>7.78 (D)   | -                        |
| Chiquintirca | 59 (O)<br>118 (N)<br>148 (D)  | 232 (O)<br>118 (N)<br>149 (D) | 16 (O)<br>80.6 (N)<br>37.9 (D) | 451 (O)<br>563 (N)<br>545 (D)     | 7.23 (O)<br>11.49 (N)<br>11.44 (D) | 17.1 (N)                 |
| Suyubamba    | 140 (O)<br>114 (N)<br>156 (D) | 380 (O)<br>122 (N)<br>220 (D) | 43.2 (N)<br>31.8 (D)           | 925 (O)<br>393 (N)<br>470 (D)     | 3.68 (O)<br>8.37 (N)<br>3.47 (D)   | 20.8 (O)<br>14.1 (N)     |
| Anchihuay    | 88 (O)<br>57 (N)              | 227(N)                        | 145.5 (O)<br>50.5 (N)          | 277 (O)<br>632 (N)                | 10 (O)<br>4.88 (N)                 | -                        |
| Chaquicocha  | 122 (O)<br>142 (N)<br>313 (D) | 210 (O)<br>197 (N)<br>110 (D) | 36.7 (N)<br>18.1 (D)           | 522 (O)<br>550 (N)<br>523 (D)     | 7.61 (N)<br>9.24 (D)               | -                        |

(O): October; (N): November; (D): December.

STD: Standard Limit. In this case, as recommended by the Compliance Monitoring 3087-D-PR-100014, Table 2. For BOD, it was required to change the value from 15 to 50 mg/L. For Faecal Coliforms it was required to change the value from 100 to 400 NMP/100ml.

The microbiological parameter concerning Helminth Eggs was monitored in all camps and results were in compliance with the applicable standard.

It is important to note that in spite of corrective action to date, not all applicable standards are being met. However, improvement measures continued to be applied during 4Q 2009 in order to improve the characteristics of the wastewater treatment plant effluents, as long as pertinent prior to each camp's decommissioning. This has been carried out according to the Treatment Systems Adjustment Program, which defined actions to be taken to adjust treatment plants to the applicable standards.

The implemented measures have included:

- Residual Chlorine and pH confirmation analysis;
- Daily inspection of grease traps in the greywater system;
- Enlargement of equalization tank capacity;
- Revision of the Aquafill systems management and operation;
- Grease trap management and weekly maintenance program;
- Review of grease generation processes in kitchens;

- Installation of greywater chlorination systems and increase in Sulphate concentrations;
- Installation of chlorine contact chambers immediately after dosing in blackwater systems;
- Assessment of chlorine concentrations;
- Training of treatment system operating personnel;
- Training of kitchen and laundry personnel;
- Production of educational material for usage at showers and toilets.

It is important to highlight that the reference standard adopted during construction is the one applicable to effluent discharges on water bodies. Nevertheless, none of the wastewater treatment plants is discharging in water bodies and all effluents are either infiltrated or used for dust control. There is no legal effluent standard for these forms of discharge and, hence, the efficacy of treatment should be understood as a good practice issue rather than a legal compliance issue.

#### Monitoring of Hydrostatic Test Discharges and Water Bodies Crossings

In October 2009, in the Western Spread, there were no discharges from the hydrostatic tests into receiving water bodies. In the Central Spread, results obtained for discharged water and for the correspondent receiving water bodies were in compliance with applicable standards. In November and December 2009, results of the monitoring in both spreads were also in compliance with the applicable standard.

In October and November 2009, discharge water monitoring of sediment pit was conducted in both spreads, while in December, only in the Central Spread. Results obtained were compliant with applicable standards.

In October 2009, monitoring at water body crossings was carried out in Rivers Vinchos (Western Spread), and Alfarpampa and Sachapampa (Central Spread) for Total Suspended Solids (TSS). Results showed that the amount of sediments found in the Rivers Vinchos and Alfarpampa were similar downstream and upstream, indicating there was no material Turbidity impact associated to construction. In the case of Sachapampa River, TSS values obtained were higher downstream than upstream, due to a certain level of temporary Turbidity, mainly caused by vehicle passages.

#### Soil Monitoring

During Q4 2009, results obtained from soil samples were compliant with the applicable Project standard (3087-D-PR-100014). Hence, soil contamination potential in the selected areas was discarded.

Soil monitoring will proceed in the next quarter in fuel storage areas, in order to detect presence of hydrocarbons (TPH) in the demobilized camps.

#### Air Quality Monitoring and Dust Control

During Q4 2009, air quality monitoring at stations located at all camps was conducted in October. Data was acquired windward and leeward and comprised the following parameters: SO<sub>2</sub>, NO<sub>2</sub> and CO, particles smaller than 10 microns (PM<sub>10</sub>), Lead, Total Hydrocarbons and Ozone.

Results showed that, except for PM<sub>10</sub> samples windward of Patibamba camp, all parameters were within compliance intervals.

PM<sub>10</sub> monitoring along roads used for construction logistics was also conducted. In October 2009, this monitoring was carried out in the Western Spread and results were compliant with the applicable standards. In subsequent months this monitoring was interrupted, as in November there was limited logistic activity, and in December, due to the rainy season, the access ways were naturally watered.

Regarding both vehicles and point source emissions in both spreads, sources apparently emitting above the applicable standards were subject to engine calibration, pump repair and maintenance to improve performance. It was reported that monitoring will continue in order to control emissions and verify whether they exceed the applicable standard or not, and that corrective actions will continue to be implemented.

#### Noise Monitoring

Noise monitoring was conducted in two areas: populated areas and sensitive areas. This included noise monitoring at each camp, according to a pre-determined schedule.

Results showed that, in October 2009, in the Western Spread camps of Santa Beatriz, La Bolívar and Rumichaca and in the Central Spread camps of Suyubamba and Anchihuay, noise levels were compliant with applicable Project standards. On the other hand, at Chiquintirca camp, in station 3 (E3), noise levels at 8:45a.m. were slightly above (58 d(B)A) the applicable standard (55 d(B)A). This might be due to the influence of other noise sources, such as machines and equipment working at the monitoring station and the Ccollpas access, as well as wind and river flow sounds nearby. At present, the camp generator is installed within a sound isolation box.

Results of noise monitoring carried out in November 2009 at La Espera, Obrador Ayacucho and Patibamba camps, and in December 2009, at Huancaccasa, Chaquicocha and Campana camps, showed that noise levels were compliant with the applicable standard.

Noise monitoring was also carried out in three sensitive areas of the Western Spread during October 2009. These areas were chosen due to the proximity with bird habitats. Results in the three areas were in conformity with the applicable standards.

#### Solid Wastes

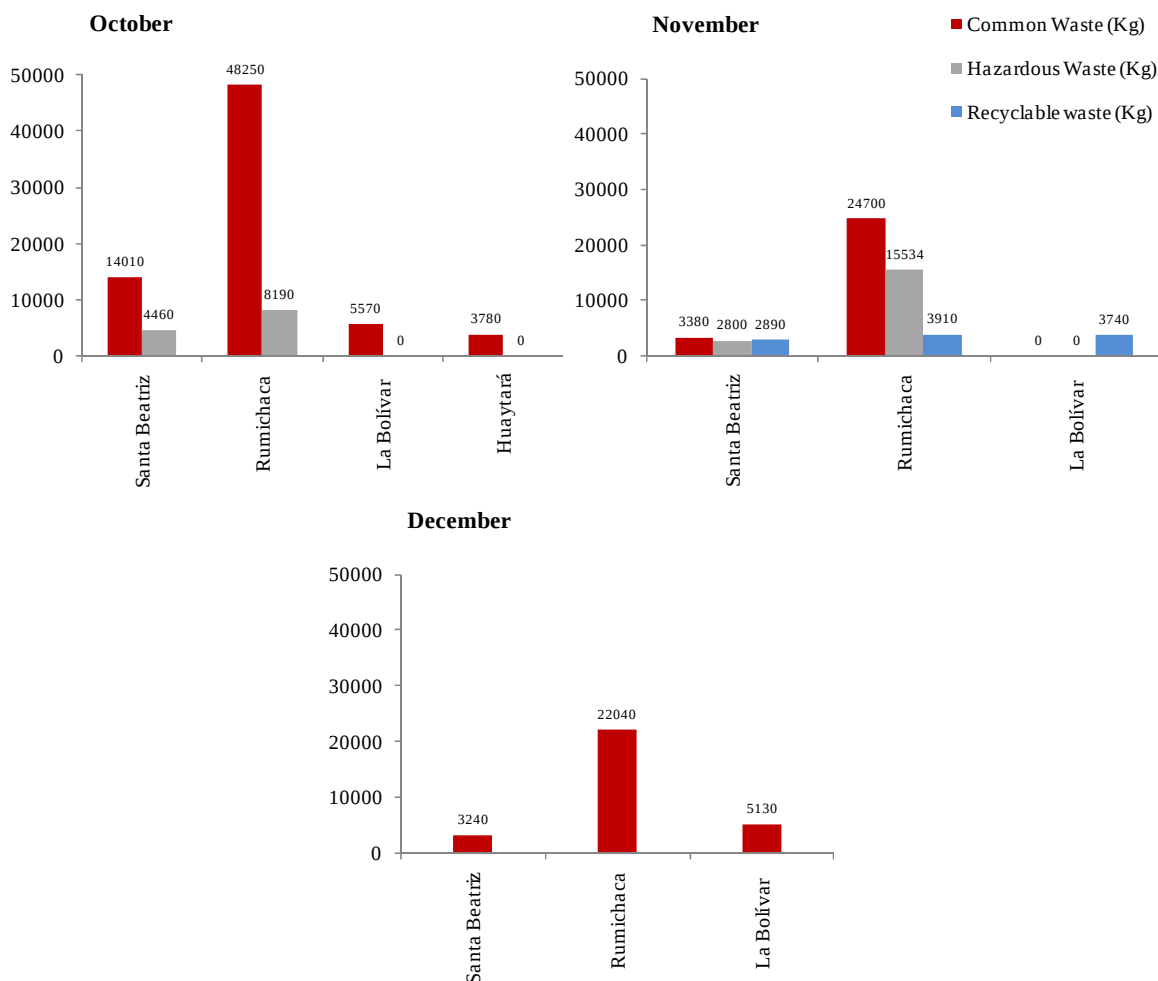
During Q4 2009, recording and control of wastes generated in the camps was conducted in accordance with the pre-established procedures.

Solid waste recollection and transportation from Western Spread camps to final destinations was carried out by Green Care del Perú S.A., certified by DIGESA. The companies contracted for final disposal located in Lima are:

- Non-Hazardous Wastes: Relima, Vega Upaca S.A;
- Hazardous Wastes: Befesa;
- Recyclable Wastes: Green Care Del Perú S.A.;
- Healthcare Wastes: Relima, Vega Upaca S.A.;
- Oil Wastes: Green Care Del Perú S.A.

The amounts of solid waste generated in the Western Spread camps and sent to final disposal during Q4 2009 are shown in **Figure 5.2-1**.

**Figure 5.2-1**  
**Wastes Generated in the Western Spread Camps and Sent to Final Destination.**

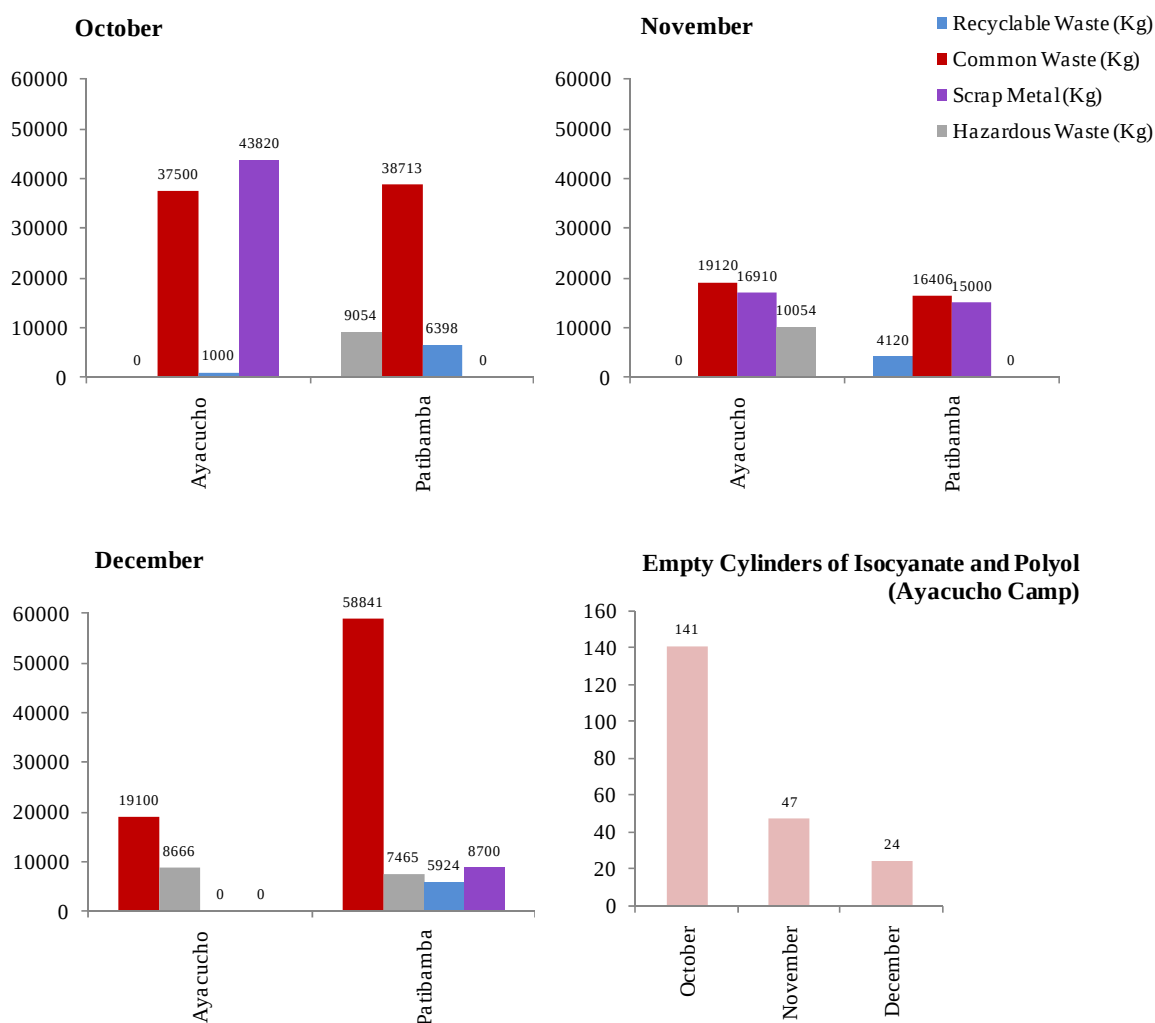


Solid waste recollection and transportation from Central Spread camps to final destination was carried out by Green Care del Perú S.A., Ecocentury S.A.C. and TECHINT, certified by DIGESA. Final destinations of waste are:

- Non-Hazardous Wastes: Relima, Vega Upaca S.A;
- Hazardous Wastes: Befesa;
- Recyclable Wastes: Green Care Del Perú S.A.;
- Healthcare Wastes: Relima, Vega Upaca S.A;
- Oil Wastes: Green Care Del Perú S.A;
- Scrap Metal: Corporación Aceros Arequipa;
- Empty Cylinders of Isocyanate and Polyol: Campamento Santa Beatriz-Pisco. Final disposal pending.

The amount of solid waste generated in the Central Spread camps and sent to final disposal during Q4 2009 are shown in **Figure 5.2-2**.

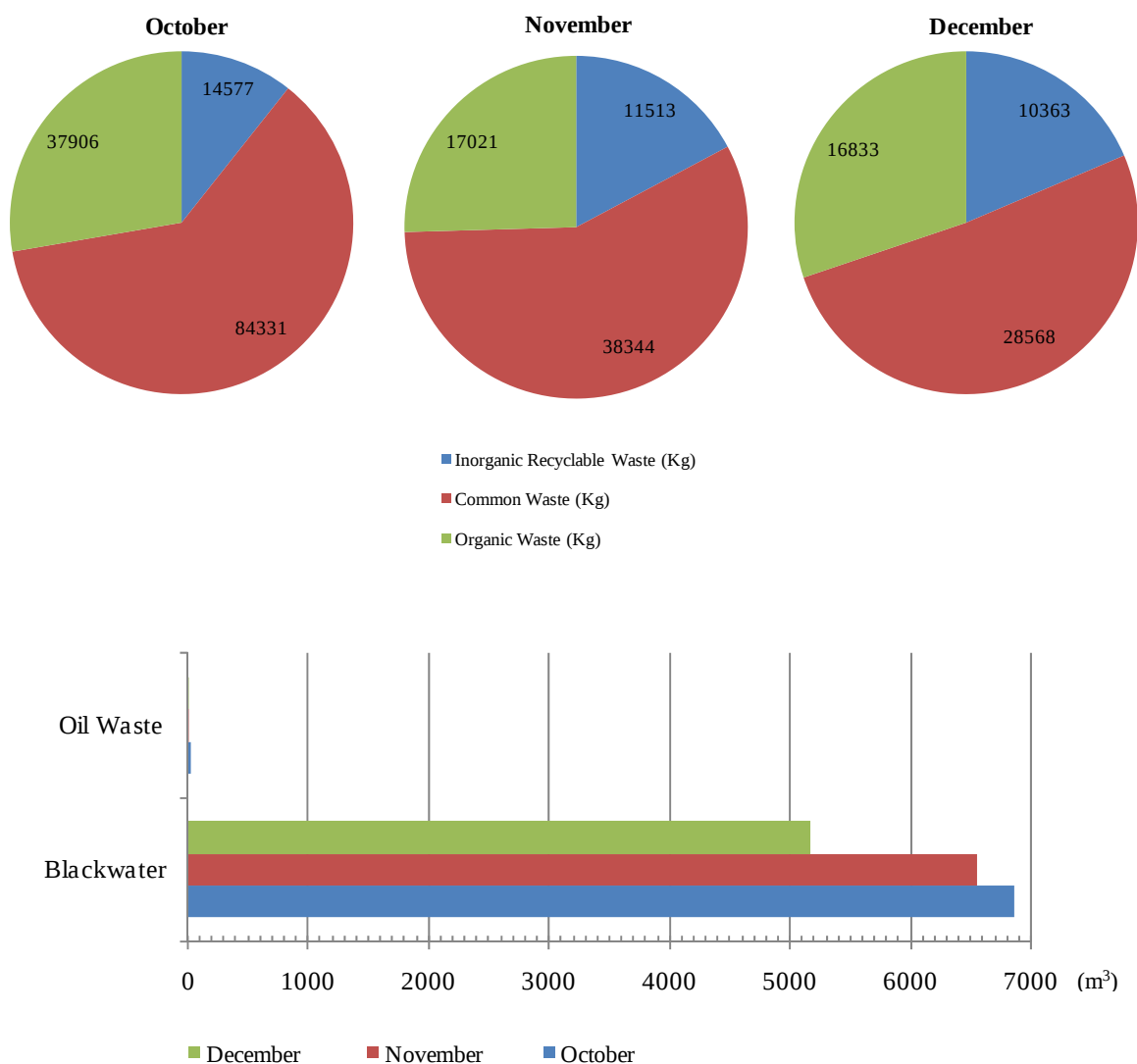
**Figure 5.2-2**  
**Wastes Generated in the Central Spread Camps and Sent to Final Destination.**



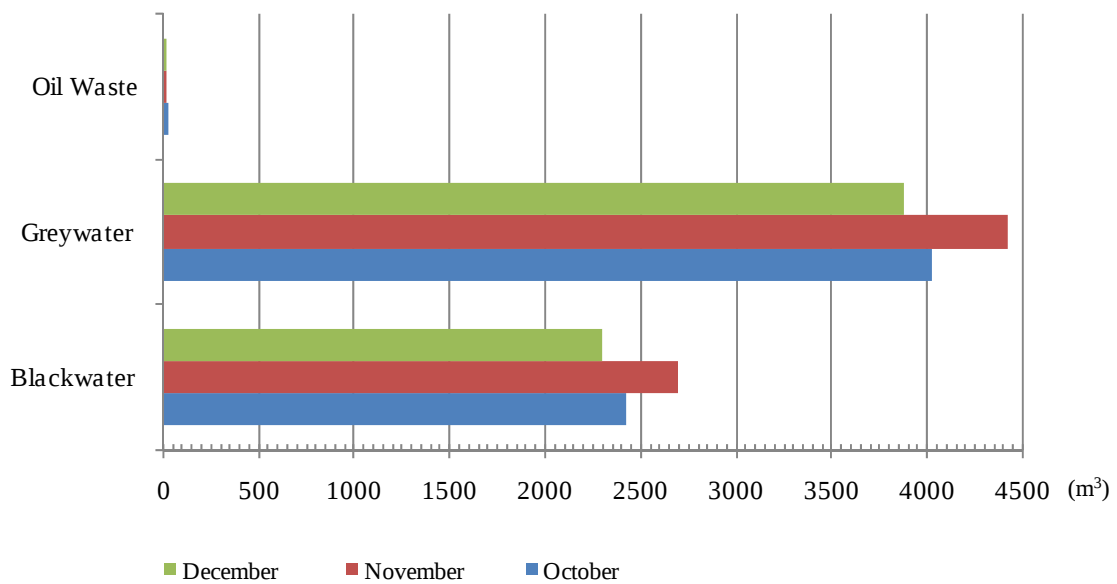
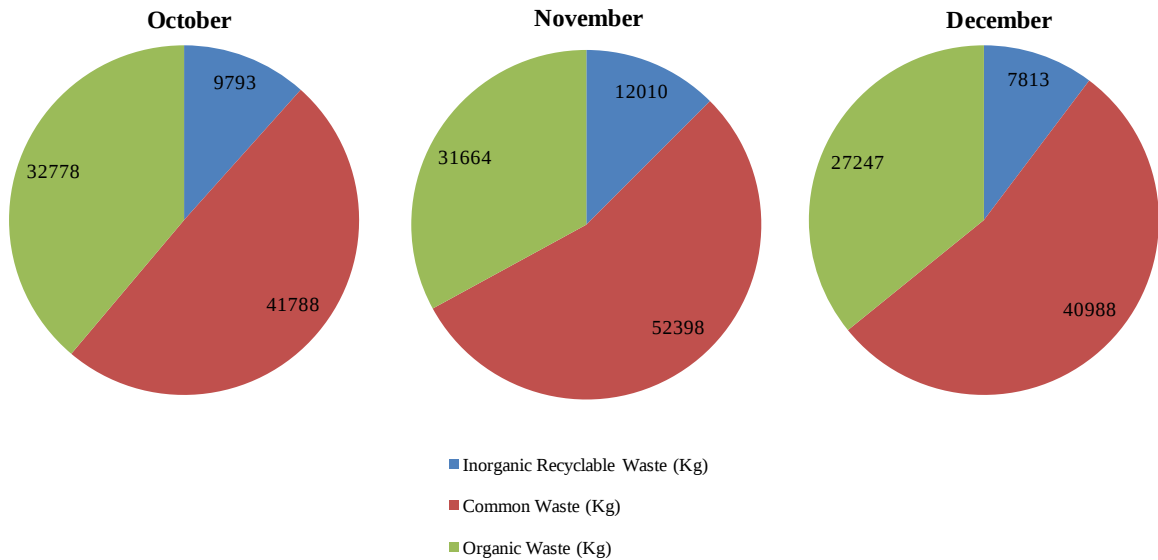
Classification of the total amount of solid waste (inorganic recyclable, organic and common wastes), generated in the camps, including liquid wastes, is shown in **Figure 5.2-3** (Western Spread) and in **Figure 5.2-4** (Central Spread). It is important to mention that only the net waste which were sent to a final destination are considered, and not the volumes that are reused in the campsites.

Inorganic recyclable waste comprised mainly of paper, card, plastic and wood was sent to Green Care del Perú S.A. for subsequent commercialization. Organic waste was sent to the composting cells located in the campsites for subsequent use as organic compost. Common waste was landfilled.

**Figure 5.2-3**  
**Classification and Total Amount of Waste (Solid and Liquid) Generated in the Western Spread Camps.**



**Figure 5.2-4**  
**Classification and Total Amount of Waste (Solid and Liquid) Generated in the Central Spread Camps.**



## 6.0

### External E&S Assurance

#### 6.1 OSINERGMIN Inspections and Observations

During Q4 2009, OSINERGMIN conducted 12 environmental and social audits totaling sixty eight days of H&S inspections/audits at the Pipeline. Only minor observations were recorded. The environmental audits focused on Pipeline, camps, PCS station, grievance resolution, community relations, local hiring and communication programs.

**Table 6.1**, summarizes OSINERGMIN observations resulting from the 68-day audits.

**Table 6.1 Observations by OSINERGMIN**

| Month         | Description of Field Observations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| October 2009  | <b>Environmental</b><br><br><u>Area Inspected:</u> Three-day audit conducted in the Western spread, including the Pipeline RoW, Santa Beatriz and La Bolivar camps. Six-day audit, evaluating areas including Huancaccasa, Huaytara and Espera camps and the Pipeline RoW. Five-day audit, evaluating areas including Chiquintirca, Anchiuay, and Patibamba camps.<br><br><u>Observations:</u> No field observations were raised requiring follow-up.                                                                                                                                                                                                                                                                                                                                                                                                                     |
|               | <b>Social</b><br><br><u>Area Inspected:</u> Seven-day audit conducted in the Central spread. Grievance resolution status in San Miguel, Anco and Vinchos Districts was reviewed.<br><br><u>Observations:</u> No field observations were raised requiring follow-up.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| November 2009 | <b>Environmental</b><br><br><u>Area Inspected:</u> <ul style="list-style-type: none"> <li>Six-day audit conducted on the Western spread, including the Pipeline RoW, Santa Beatriz, La Bolivar and Huaytara I camps and PCS Station.</li> <li>Four-day audit, evaluating areas including the Pipeline RoW from KP 105 to KP 408.</li> <li>Five-day audit, evaluating areas including the Pipeline RoW from KP 7 to KP 105.</li> </ul> <u>Observations:</u> <ul style="list-style-type: none"> <li>Four minor field observations were raised, mainly related to housekeeping issues, which were all promptly addressed by the Pipeline Contractor.</li> <li>One field observation was raised regarding the need to install showers at a temporary camp. Observation was adequately addressed by the Pipeline Contractor, thus, requiring no follow-up activity.</li> </ul> |

| Month         | Description of Field Observations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | <p><b>Social</b></p> <p><u>Area Inspected:</u> Seven-day social audit conducted in the Central spread. Areas and topics evaluated included:</p> <ul style="list-style-type: none"> <li>• Compliance with the Community Relations, Local Hiring and Communication Programs.</li> <li>• PMSAP status and progress.</li> <li>• Compliance with the Land &amp; Easement compensation agreements.</li> <li>• Grievances' status review.</li> </ul> <p><u>Observations:</u> One minor field observation issued regarding an easement contract and RoW slope breakers in Acoccro.</p> <p><u>Area Inspected:</u> Five-day social audit conducted in the Central spread. The status of grievances recorded in San Miguel, Anco and Vinchos Districts was reviewed.</p> <p><u>Observations:</u> No field observations were raised requiring follow-up.</p>                                                             |
| December 2009 | <p><b>Environmental</b></p> <p><u>Area Inspected:</u> Seven-day audit conducted to the Western spread, including the Pipeline RoW Santa Beatriz, La Bolivar and Huaytara I camps and PCS Station.</p> <p><u>Observations:</u> Four minor field observations were raised, which were promptly addressed by the Pipeline Contractor.</p> <p><b>Social</b></p> <p><u>Area Inspected:</u> Seven-day social audit conducted in the Western spread. Areas and topics evaluated included:</p> <ul style="list-style-type: none"> <li>• Compliance with the Community Relations, Local Hiring and Communication Programs.</li> <li>• PMSAP status and progress.</li> <li>• Compliance with the Land &amp; Easement compensation agreements.</li> <li>• Grievances' status review.</li> </ul> <p><u>Observations:</u> One information request from the regulator, which was addressed before the audit's closure.</p> |

Source: PERU LNG 4Q 2009 ESHS Quarterly Report

During Q4 2009, OSINERGMIN's observations were responded to and resolved. PERU LNG informed that it has promptly provided all additional information required.

## 6.2 IESM Missions

### *Action Taken on IESM Team's Previous Recommendations*

In the December 2009 IESM Report, a total of 15 recommendations remained open (as consolidated in the corresponding Recommendation Tracking Table – Annex 02). Of these, 05 were issued as a result of the September 2009 IESM Mission, and 04 were still pending from previous missions. Six (06) additional recommendations were issued as a result of the December Mission itself.

In its 4Q 2009 Report, PERU LNG reported on action taken with regards to the September 2009 recommendations. This action has been deemed adequate with respect to 04 of the 05 recommendations, with the exception of the construction compliance assurance audit because the audit report submittal is still pending in this case.

Regarding open recommendations from previous missions, based on information included in PERU LNG's 4Q 2009 Report and on the situation verified by the IESM Team during the March Mission, two have been closed (relative to construction camp inspection checklists and to organization of PMSAP monitoring records). The other one (on establishment of KPIs for the Livelihood Restoration Assistance Action Plan) is still pending (see Section 8.0 in this report).

During the December 2009 Mission, the IESM Team issued 06 recommendations for the Pipeline, affecting PERU LNG's E&S assurance procedures relative to construction (two recommendations); recommendations requiring PERU LNG to request corrective action from TECHINT (one recommendation); recommendations relative to ongoing E&S Programs (one recommendation) and recommendations for future action in view of perceived environmental and social upcoming risks (two recommendations). Though these recommendations are not responded to in PERU LNG's 4Q 2009 Report since they were issued after that report was closed, based on verification during the March 2010 IESM Mission it is possible to close two of them: one relative to continuity of reinstatement teams during the rainy season, and the other to disclosure of land-use restrictions and contingency procedures to be adopted in High Consequence Areas (HCA). In this latter case, it is important to note that there will need to be additional disclosure as part of Contingency Plans for the pipeline's operational phase. These plans have been submitted and are yet to be reviewed.

Further to the above, eighteen (18) additional recommendations are being issued in this report based on results of the March Mission. These are presented in Section 10.0 and are consolidated with pending recommendations from previous missions in the Recommendation Tracking Table in **Annex 02**.

## 7.0

### Environmental and Social Program Implementation and Performance

#### 7.1 Biodiversity Monitoring Program (BMAP)

##### *Progress Reported by PERU LNG*

PERU LNG reported that by the end of Q4 2009, the Smithsonian Institute (SI) began to develop the research and monitoring framework. Out of 14 Ecological Landscape Units (ELUs), 12 were characterized and indicator species were defined for them. The SI team explained that as ELU 2, (Anchihuay area) had difficult access, it would be integrated to ELU 1.

During the Q1 2010 IESM Mission, the SI team presented nine survey protocols for the following species: *Polylepis pauta*, *Eriotheca vargasii*, *Bofedales*, *Cleistocactus hystrix* and *C. peculiaris*, *Atlapetes forbesii* –*A. melanopsis*–, *Thomasomys kalinowski*, *Leopardus jacobitus*, *Platalina genovensium* and *Orestias sp.*

##### *Scope of the IESM Team's Review*

During the Q1 2010 IESM Mission, selected BMAP program documents were reviewed and discussed. SI's field supervisor made a progress update presentation on the BMAP, reporting on the following aspects during surveys executed:

- In ELU 1, 164 *Thomasomys kalinowskii* (rodent) specimens were captured; *Polylepis pauta* (trees) were identified; and, seven *Atlapetes melanopsis* specimens were observed between November/December 2009.
- In ELU 3, poor natural regeneration was observed with respect to *Eriotheca vargasii* (tree) and dispersion techniques, seedling/germination studies and cattle dispersion were recommended. As no significant Pipeline related impacts on *Eriothecas* are expected outside of the RoW, the focus of the program is more on obtaining scientific knowledge about the species than about verification of impacts attributable to the Project.
- In ELUs 4, 6, 8, 9 and 10, *Bofedales* were studied in 11 areas and 23 transects.
- In ELU 6, 8 and 10, a total of 1,543 captures and 3 different species of the fish *Orestias sp.* were obtained.
- In ELUs 6 and 8, the presence of *Leopardus jacobita* (Andean cat) was detected.
- In ELU 12, *Cleistocactus hystrix* and *C. peculiaris* (cactus species) were surveyed, having also detected the presence of the bat *Platalina genovensium*.

### Compliance Assessment

The BMAP is being developed as planned and in compliance with the established commitments. Monitoring protocols were concluded for 9 (nine) of the above mentioned species. Eight national universities are working in the BMP project along with 2 NGOs and 3 foreign institutions, including the Smithsonian Institute.

### Results Assessment

Several species were initially established as environmental indicators in different ELUs (see table herein). Survey activities contributed towards the correction of range distribution for some species. This improved database is being used for academic works and divulged to the scientific community by the Smithsonian Institute, among others. The BMAP program is also benefitting local and national human resources development by providing an enhanced training program for more than 30 Peruvian professionals.

Specific issues about management and conservation were established, as well as sampling proposals for each selected species. Local organizations were contracted, such as the Universities of San Marcos and La Molina. During the March IESM Mission, the program's first available results were being processed.

A Geographic Information System (GIS) was implemented and will integrate information on monitoring points, ecologically sensitive areas, landscape ecology and degree of human intervention, among other aspects.

### Species Distribution in ELU's

| ELU | Species                                                                              | Number of parcels or samples                                              |
|-----|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1   | <i>Thomasomys kalinowskii</i><br><i>Polylepis pauta</i><br><i>Atlapetes forbesii</i> | 8 parcels with 32 stations<br>5 zones<br>2 groups with 20 points          |
| 3   | <i>Eriotheca vagasii</i>                                                             | 2 survey points                                                           |
| 4   | Bofedales<br><i>Leopardus jacobita</i>                                               | 11 areas with 23 transects<br>2 points with 270 surveys                   |
| 6   | Bofedales<br><i>Orestias sp</i><br><i>Leopardus jacobita</i>                         | 11 areas with 23 transects<br>1,543 captures<br>2 points with 270 surveys |
| 8   | Bofedales<br><i>Orestias sp</i><br><i>Leopardus jacobita</i>                         | 11 areas with 23 transects<br>1,543 captures<br>2 points with 270 surveys |
| 9   | Bofedales                                                                            | 11 areas with 23 transects                                                |
| 10  | Bofedales<br><i>Orestias sp</i>                                                      | 11 areas with 23 transects<br>1,543 captures                              |
| 12  | <i>Cleistocatus (C hystrix e peculiaris)</i><br><i>Platalina genovesium</i>          | 32 parcels<br>6 survey points                                             |

### *Suggestions and Recommendations*

The general procedure for selection of sampling sites is expected to function well for most of the selected samples. The degree of existing human intervention in the vicinity of each sampling area/region is an issue which needs to be carefully assessed through land use and land cover monitoring. These different levels of human intervention registered in the region should be taken into consideration when defining strategies and also during monitoring itself.

### *Program Evaluation*

The BMAP is currently compliant with the Program's objectives.

### 7.2 Ecological Management Plan

#### *Progress Reported by PERU LNG*

PERU LNG reported that on February 28, 2010, in the Central Spread, 95% of the naturalized pastures had been seeded in order to control erosion and that soil was being improved with the introduction of phosphoric rock and *guano* before being applied to the RoW as per the reinstatement procedure. As necessary, jute was being deployed to help avoid erosion. More than 96% of this work had been completed. Hydro-seeding was completed as well as *ichu* translocation.

The Ecological Management Plan combines erosion control and vegetation reconstitution actions throughout the RoW. As reported before, different techniques were used according to the acclivity, soil fertility and altitude of areas to be recovered. The seed mixture composition also varied according to altitude.

PERU LNG's team informed that in the Western Spread, *ichu* translocation has been completed and erosion control works are 76% complete. Progress with soil improvement and seeding of naturalized pastures is at 86%. It was also reported that most of the outstanding works are in the Vinchos area (about 1% of the total RoW), due to pending issues regarding land and easement grievances.

Monitoring of the RoW during after rainfall is also a continuous activity, and it was informed that if the beginning of an erosion process is observed, reinstatement works are implemented immediately, followed by monitoring until total area recovery.

### *Scope of the IESM Team's Review*

During the March IESM Mission, some Ecological Landscape Units (ELU) were visited. Seedling gathering and transport procedures were explained by PERU LNG during the field visit. Transplanted species from the region by Campana camp (*bofedales*) as well as geotechnical works were inspected. PERU LNG supplied additional information about program status during a meeting in Ayacucho.

A bio-restored *bofedal* at Kp 23 was inspected. Results were found to be outstanding and demonstrate that the procedures to protect the *bofedal* during construction were highly effective.

Other bio-restoration work was inspected in the vicinity of the Accocro camp, where extensive rock management was executed, and excess rocks were used to build property fences and/or geotechnical stabilization works. RoW limits are hardly perceivable and many areas have been planted by the local farmers.

The IESM Team also visited the hydro-seeding executed in the River Yucay region (Kp 64), River Pampas (Kp 190) and River Palmitos. In Yucay River, activities had been executed in October 2009, and growth of planted species, jute cover placement and erosion control works were observed. It was also observed that growth of natural species had begun.

In most of the Central Spread RoW where reinstatement works has already been completed, permanent geotechnical works and bio-restoration were well able to endure the rainfall season.

At the Pisco River crossing in the Western Spread (Kp 341), no erosion processes or unstable conditions were identified. Agricultural activities and shrimp traps in the river are indicative of a back-to-normal condition.

### *Compliance Assessment*

Implementation is compliant with the Program.

### *Results Assessment*

Results observed during field inspections were very satisfactory.

### *Suggestions and Recommendations*

There are no suggestions or recommendations for this program, as its execution is being highly effective, especially in relation to erosion control procedures, taking into consideration aspects related to bio-restoration, hydro-seeding, geotechnical works, *bofedales* recovery and *ichu* translocation procedures.

### *Program Evaluation*

Biorestation activities are implemented according to the commitment made in the EIAs project and following the methodology established in this study. Final biorestation activities will continue in the forthcoming period.

### 7.3 Camelids Management Plan

#### *Progress reported by PERU LNG*

According to PERU LNG, the Monitoring Program for Vicuñas, other Camelids and Domestic Herbivorous Animals will continue until end March in order to cover the complete construction cycle. The total monitoring period will thus be 15 months (January 2009 – March 2010).

PERU LNG informed that monitoring results showed no negative impacts attributable to Pipeline construction activities on distribution and abundance of camelids and herbivorous animal populations. To date, mitigation measures implemented through the Program have proven to be effective, as no incidents related to injuries or adverse impacts to camelids were recorded.

The frequency of surveys made by La Molina National Agrarian University and the FDA has been reduced due to access limitations and weather conditions. Censuses are being conducted by foot, increasing the amount of time needed to cover a particular area.

#### *Scope of the IESM Team's Review*

No inspections in camelid areas were held during the March 2010 IESM Mission.

#### *Compliance Assessment*

According to PERU LNG, monitoring results show that in the past 3 months, domestic animals (alpaca, llama, sheep and cattle) have been constantly moving from one place to another without a specific trend or pattern. This result suggests that movement may be related to habitat quality (pastures). In contrast, vicuñas have basically remained in the same area, at distances between 350 and 400 meters from the Pipeline RoW.

#### *Results Assessment*

The Program presented conclusive results showing that the Pipeline has not interfered negatively with the camelids population.

PERU LNG informed that the presentation of program results and feedback to community members and general stakeholders will take place in the second quarter of 2010.

#### *Suggestions and Recommendations*

None at this time.

#### *Program Evaluation*

The Project has attained results which contribute to increasing knowledge about camelids and will spread information to scientific community and local farmers. Furthermore, it has successfully demonstrated that no material impacts to camelids populations are attributable to the Project.

#### 7.4 Pipeline Cultural Heritage Management Plan

##### *Progress reported by PERU LNG*

The final archaeological evaluation and rescue projects associated with the PERU LNG Project were completed during Q3 2009, and no new archaeological chance finds have been discovered since that time.

During Q4 2009, PERU LNG archaeologists and archaeological contractors focused on artifact analyses, as well as preparation and submission of final reports to the National Institute of Culture (INC), and obtaining corresponding INC permissions.

PERU LNG informed that during Q4 2009, archaeology contractors have completed the following activities in coordination with INC authorities:

- National Directorial Resolution (RDN) N° 1581/INC dated October 22<sup>nd</sup>, 2009, which approves the fourth final report for the KP 0 to 200 Rescue Project (includes 8 archaeological sites).
- RDN N° 1628/INC dated October 29, 2009, which approves the final report for the Chance Find 35 (KP 205+525) Evaluation Project.
- RDN N° 1783/INC dated November 23, 2009, which approves the final report for the Chance Find 20 (KP 41+200) Evaluation and Rescue Project.
- RDN N° 1925/INC dated December 15, 2009, which approves the final report for the variant at KP 0+600 Evaluation Project.
- Inexistence of Archaeological Remains Certificate (CIRA) N° 2009-764 for the eight archaeological sites in the final report approved by RDN No. 1581/INC.
- CIRA N° 2009-009 (Ayacucho) for the variant at KP 15+000.
- CIRA N° 2009-017 (Ayacucho) for the variant at KP 58+934.
- CIRA N° 2009-818 for the Pichccahuasi (KP 170) variant.

- 27 CIRAs for extra work space and cathodic protection units.

#### *Scope of the IESM Team's Review*

During the March 2010 IESM Mission, the IESM reviewed information provided in the Q4 2009 report, as no inspections in archaeological sites took place.

#### *Compliance Assessment*

This program is compliant with INC requirements and with EIA commitments.

#### *Results Assessment*

Results during Q4 2009 relate mostly to regulatory compliance. Significant progress was made in terms of obtaining pending INC permits (CIRAs).

#### *Suggestions and Recommendations*

In its forthcoming Quarterly Environmental and Social Reports, PERU LNG should include a list of all pending activities and INC permits (CIRAs). This will greatly facilitate compliance verification by the IESM Team.

#### *Program Evaluation*

PERU LNG and the Pipeline Contractor archaeologists permanently monitor construction activities in the Central and Western spreads ensuring that all provisions of the Cultural Heritage Management Plan are adequately implemented.

As a result of this, the Cultural Heritage Management Plan has successfully protected the archaeological remains within the Project's footprint and assured compliance with all Project commitments in this regard. Furthermore, it has gathered a significant amount of archaeological remains and information that will contribute to increased knowledge of the Project region's past history.

#### 7.5 External Orientation Service

##### *Progress Reported by PERU LNG*

According to the PERU LNG's Q4 2009 Report, during the reported period the External Orientation Service (EOS) office in Ayacucho received 10 visitors. Additionally, 286 consultations were responded during 3 field visits accompanying health campaigns. Most of the consultations came from people from the Vinchos, Chiara and Anco districts.

| Type of consultation                                                                              | %  |
|---------------------------------------------------------------------------------------------------|----|
| Queries about the objectives, scope and activities of the External Orientation Service Program    | 69 |
| Queries and concerns in relation to alleged claims on infrastructure damage by the project        | 7  |
| Queries about the Pipeline compensation process, agreements and compensation values               | 6  |
| Queries related to concerns on Pipeline leaks and accidents during the operation of the Pipeline. | 5  |
| Concerns on Pipeline construction activities (3%)                                                 | 3  |
| General comments about Pipeline activities (5%)                                                   | 5  |
| Other consultations not related to the PERU LNG Project (5%)                                      | 5  |

PERU LNG informed that the program concluded its activities on December 31, 2009. A total of 1,052 “orientations” were registered during the entire program.

#### *Scope of the IESM Team’s Review*

No further information was collected on the EOS during the March 2010 IESM Mission.

#### *Compliance Assessment*

This program was found compliant with Project requirements.

#### *Results Assessment*

The implementation of field visits sharply increased the impact of this program. A brief analysis of consultation frequencies from the last quarter (see table above for Q4 2009) shows that the majority of local community members were not aware of the existence of this service. This is reflected in the fact that almost 70% of the consultations were about the objectives, scope and activities of the External Orientation Service. The program would have significantly improved its performance if the field visit strategy had been implemented from the beginning.

#### *Suggestions and Recommendations*

The IESM Team suggests carrying out an evaluation of the lessons learned of this program. Even though the experience was not totally successful in terms of its use by the local communities, it is important for designing new strategies for future projects.

#### *Program Evaluation*

Even with the change in strategy for community outreach (field visits), this program did not totally fulfill its objective as an information and orientation resource which is easily available and actively used by the community members, local authorities and other stakeholders.

## 7.6 Community Environmental Monitoring Program

### *Progress Reported by PERU LNG*

According to PERU LNG's Q4 Report, during the reported period, 954.6 km of RoW inspections were conducted and 1,602 environmental and social monitoring forms were filled in. Information gathered has been entered into the Monitoring Information Registry System and the identified shortcomings were forwarded to the Pipeline Contractor and to PERU LNG for their response and action. During the field inspections and planning workshops, ProNaturaleza reinforced local monitors training, covering themes such as: erosion control; permanent geotechnical works; environmental variables identification; reinstatement and bio-restoration; utilization of the social monitoring form, among others.

All monitors participated in a two-day training workshop on social and environmental topics which was carried out in December 2009 in Ayacucho. Representatives from PERU LNG's safety, environment, social investment, community relations, engineering, and construction departments participated in this training event. Training topics included: social investment and social responsibility programs; environmental aspects and safety issues regarding natural gas; biodiversity monitoring program; above-ground facilities; hydrostatic testing; bio-restoration program; and geotechnical works.

The workshop also served to exchange experiences between monitors from different sectors and to identify opportunities for improving their work.

Three new environmental monitoring forms have been validated and implemented in the field according to the construction process phase: Environmental geotechnical works; bio-restoration; and monitoring of civil works outside the RoW.

### *Scope of the IESM Team's Review*

During the March 2010 IESM Mission, the IESM Team held a meeting with ProNaturaleza staff and PERU LNG representatives.

ProNaturaleza informed that during the Q1 2010 IESM Mission, the program included 82 monitors. The number of monitors is varying permanently, due to other work opportunities that monitors have in the region, particularly in Pipeline construction.

A new level of information diffusion and training rendered to local communities regarding environmental and social issues has started to develop recognition of the program. Community monitors, due to requests from local community members and authorities, are implementing training sessions in which they transmit their knowledge to others. This shows a process through which the community monitors have gained trust and appreciation from their communities. It also shows how communities are interested in acquiring detailed knowledge about the Pipeline construction process and environmental aspects related to

Pipeline's operation. This perception was corroborated in other interviews that the IESM Team held with authorities at Virgen de Cocharcas de Cochas and Llachoccmayo communities.

The IESM Team was informed about program presentations to community members and authorities in which monitors presented summaries of their work with the support of ProNaturaleza's technical team. One of these presentations was given by four monitors in the community of Pilpichaca on February 23, 2010.

Information flow between the PMSAP and PERU LNG has improved due to the assignment of one PERU LNG staff as permanent liaison between the program and the different areas of PERU LNG. This information has proved particularly useful to prevent damage due to livestock invasion on the RoW. The monitors' reports are crucial for detecting critical areas in which livestock is damaging the bio-restoration process.

During January and February 2010, the most common observations were related to the geotechnical works, erosion control, and bio-restoration. Community monitors have been informed and observed hydrostatic testing of the pressure control station, scraper trap and Valves 1, 2, 3, 4 and 7.

The IESM Team was informed on progress of the online Monitoring Information Registry System (MIRS) where monitors insert their monitoring activities' observations and PERU LNG provides its response to those observations and reports on actions taken.

The IESM Team also attended a presentation given by the Huaychao community monitor. Explanations were given regarding monitoring activities, information reporting to ProNaturaleza, how this information is fed into the MIRS and community feedback. He highlighted how the local community gradually developed interest in the program. While initially his role was seen with distrust or disinterest, now there is public recognition of his role as a source of information and knowledge about the impacts of the Project.

He stressed his role as an alternative channel to provide information about social and environmental impacts of the Project. He mentioned a case of a 50 m<sup>2</sup> farmed area (peas plot) damaged by construction related work. This damage had not been reported because the owner of the plot did not realize it actually happened and did not register this grievance with PERU LNG's Community Relations staff. Thanks to the monitor's report, this case was informed to Community Relations, and currently, negotiations with the owner are being carried out in order to solve the grievance.

The IESM Team also had a brief meeting along the RoW with the Santa Rosa de Tambo and Ayavi community monitors. They expressed similar impressions about the increasing interest and trust that the communities are showing in relation to the program. However, the Tambo community monitor also expressed his difficulties in interacting with the community's president.

### *Compliance Assessment*

On the occasion of the March 2010 IESM Mission, the Community Environmental Monitoring Program was compliant with Project requirements.

### *Results Assessment*

According to the information received from ProNaturaleza, monitors are not only improving their reporting skills in monitoring of environmental aspects, but are also able to communicate their acquired knowledge to their communities.

Regarding social monitoring, ProNaturaleza representatives and PERU LNG's Community Relations team have improved the processing of social information generated by monitoring as well as their communication channels.

The inclusion of a full time representative of PERU LNG as a liaison between the PMSAP and all PERU LNG's areas has greatly improved communication channels and coordination for timely response to the communities' and monitor's observations.

### *Suggestions and Recommendations*

The IESM Team suggests:

- To continue with training workshops which include all monitors from the different areas of the Project.
- Regarding social grievances, it is important to include in the reports both the location (Kp) and the name of the person who was affected in order to help PERU LNG solve the problem in a more expedited way.
- To discuss and plan PMSAP continuity during the operation phase.

### *Program Evaluation*

The program has generated interest and a positive attitude among local communities. Furthermore, it is having a positive impact on local communities as well as in the relations between the communities and the Project. It has proven to be critically useful also for PERU LNG's bio-restoration process.

## 7.7 Stakeholder Engagement Management Plan

### *Progress Reported by PERU LNG*

According to PERU LNG's Q4 2009 Report, 1,982 stakeholder interactions took place during the quarter.

| Type of Interaction                                                                                                                                                                              | %  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Construction topics (notification of commencement, general disturbance communication, accident prevention guidance, and joint inspections with community members)                                | 37 |
| Social monitoring (general communications, participation in community assemblies, perceptions registries, response to information requests and/or grievances, and coordination with authorities) | 36 |
| Grievance management (reception and monitoring of grievances according to grievance procedure)                                                                                                   | 6  |
| Incident prevention (conflict resolution and conflict monitoring)                                                                                                                                | 5  |
| Local hiring (request and receipt of candidate workers' lists from communities and communications between stakeholders and project representatives on local hiring procedures)                   | 5  |
| Additionality programs (donations requests and provision of information regarding social investment projects)                                                                                    | 5  |
| Land & Easement (communications on easement negotiation activities)                                                                                                                              | 4  |
| Other                                                                                                                                                                                            | 2  |

During Q4 2009, 28 workshops were held with local stakeholders, in which 833 people participated. Workshops carried out were:

- Biorestoration activities - 21 workshops.
- Informative workshops to present safety and contingency plans in High Consequence Areas near the Pipeline as indicated in the Pipeline transportation regulations - 6 workshops.
- Venting procedure around Main Line Valve # 13 - 1 workshop.

One hundred and fifty-nine (159) letters were received in Q4 2009, of which 67% were requests for donations.

During the March IESM Mission, the IESM Team was informed that 894 interactions with stakeholders took place during January and February 2010, as follows:

| <b>Interactions with Stakeholders</b>          | <b>%</b> |
|------------------------------------------------|----------|
| Construction topics                            | 43       |
| Social monitoring                              | 38       |
| Incident prevention                            | 4        |
| Grievance management                           | 2        |
| Local hiring                                   | 2        |
| Additionality programs                         | 2        |
| Land & Easement                                | 2        |
| Activities associated with the operation phase | 2        |
| Commissioning                                  | 2        |
| Others                                         | 1        |

According to the Q4 2009 Report, 30 grievances were received during the quarter, indicating a steady decrease since Q2 (from 132 in Q2, to 47 in Q3, and to 30 in Q4).

| <b>Grievances Received in Q4 by Subject</b>                                                                                                                                                                                          | <b>Solved</b> | <b>In process</b> | <b>Total</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------------|
| Land and infrastructure damages (Concerns and grievances related to potential damages to water irrigation channels, fences, wells, existing roads, crops, and cattle)                                                                | 8             | 9                 | 17           |
| Land & Easement (Requests of renegotiation, on modifying existing agreements, grievances related to Land and Easement contracts and obligations)                                                                                     | 1             | 8                 | 9            |
| Construction related (Concerns regarding commencement of construction activities, trenching, blasting, crossings of irrigation channels, material transportation and storage, transit of cattle, reinstatement and land restoration) | 4             | 0                 | 4            |
| <b>TOTAL</b>                                                                                                                                                                                                                         | <b>13</b>     | <b>17</b>         | <b>30</b>    |

By the end of December 2009, 98% of the grievances received in Q2 and 96% of the grievances received in the Q3 had been solved. Regarding those grievances received in Q4: 13 (43%) have been solved and 17 (57%) are still in process.

PERU LNG reported that open grievances related to Land and Infrastructure damages largely correspond to alleged damages caused by heavy rains which increase water flow in slope breakers and other erosion control devices. These grievances are located mainly in the Vinchos and Accocro districts.

In the case of the open grievances related to Land & Easement, PERU LNG reported that verification took place in order to determine if areas occupied during construction are within the premises included in the RoW easement or in Extra Work Space agreements.

In terms of materiality, 50% of the 30 grievances received in Q4 2009 are considered minor, whereas the remaining 50% are significant and were considered to entail a risk of construction front stoppage (see table below).

| <b>Grievances Received in Q4 2009 by Level of Risk (Materiality)</b>                                                                                                    | <b>Solved</b> | <b>In process</b> | <b>Total</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------------|
| Minor grievances                                                                                                                                                        | 2             | 13                | 15           |
| Grievances which entail considerable risk of evolving into a stoppage and requiring the participation of different areas of PERU LNG or third parties in their solution | 11            | 4                 | 15           |
| <b>TOTAL</b>                                                                                                                                                            | <b>13</b>     | <b>17</b>         | <b>30</b>    |

During the March IESM Mission, the IESM Team was informed that 9 new grievances were received in January and February 2010. Six (6) of them were related to Land and Infrastructure Damages, 2 are related to Land & Easement and 1 is related to Construction Activities.

Only one of them involved a considerable risk of developing into a stoppage. One of them has been solved and 8 are in process.

PERU LNG reported 55 stoppages throughout the Pipeline during Q4 2009. Forty-four (44) of them were solved within the same day of the occurrence. Fifty-four (54) were solved within Q4 2009.

| <b>Main cause of stoppage</b>       | <b>Number of stoppages</b> | <b>Solved</b> | <b>In process</b> |
|-------------------------------------|----------------------------|---------------|-------------------|
| Related to construction activities  | 22                         | 22            | 0                 |
| Local Hiring                        | 14                         | 14            | 0                 |
| Additionality requests              | 11                         | 10            | 1                 |
| Land & Easement                     | 7                          | 7             | 0                 |
| Environmental and cultural heritage | 1                          | 1             | 0                 |
| <b>Total</b>                        | <b>55</b>                  | <b>54</b>     | <b>1</b>          |

Thirty-two (32) of the stoppages occurred in the district of Vinchos and 10 of them in San Miguel. The one stoppage reported to be in progress in the table above, was solved shortly after the cutoff date of the Q4 2009 Report. Twenty-three (23) of the stoppages involved less than 10 people and 23 involved between 10 and 30 people. Only 3 involved more than 50 people.

During the March 2010 IESM Mission, PERU LNG reported that during January and February 2010 there were 14 stoppages. All were solved except one. Nine (9) of them were solved within one day. Five (5) of these stoppages involved between 30 and 50 people and three (3) involved more than 50 people.

The stoppage that was still ongoing at the time of the March 2010 IESM Mission was at the community of Vinchos. It is related to alleged damages on agricultural plots, inadequacy of reinstatement and biorestorement that have not returned farmlands to their original condition (amount of top soil and quantity of stones), payments for extra work areas, and unspecified social and environmental impact claims. Negotiations between community authorities and representatives of PERU LNG were ongoing. Community representatives have refused to allow Ministry of Energy and Mines representatives to participate as facilitators of the negotiation process.

A stakeholder engagement issue related to the Pipeline's operational phase concerns the definition of High Consequence Areas (HCAs) in the vicinity of the RoW. These are occupied areas that may be affected in the event of accidents.

PERU LNG defined 30 High Consequence Areas (HCA) according with the legislation (DS 081 MEM 2007) during Q4 2009. Limits of these areas have been submitted to OSINERGMIN. During the March 2010 IESM Mission, PERU LNG informed that baseline monitoring of houses within these areas is ongoing, and that it is developing specific contingency plans for each area and a communication strategy with the involved communities.

#### *Scope of the IESM Team's Review*

During the March 2010 IESM Mission, the IESM Team attended a presentation on the Stakeholder Engagement Program's status by PERU LNG's Community Relations representatives.

#### *Compliance Assessment*

The Stakeholder Engagement Management Plan was found to be mostly in compliance with the Project's social commitments except for the performance target of 90% grievances solved within one month. However, it is clear that this percentage has improved in Q4 2009.

#### *Results Assessment*

PERU LNG's Community Relations team has notably improved its capacity for solving grievances. However, it still does not reach performance targets. Conversely, this team has acted expediently to solve stoppages and to prevent them.

#### *Suggestions and Recommendations*

The IESM Team acknowledges the improvement in the process of solving grievances and suggests that these efforts should be maintained and encouraged.

The IESM Team recommends that special attention should be paid to the potential damages caused to crops or infrastructure due to the work stoppage in the community of Vinchos.

With respect to HCA areas, continued monitoring by PERU LNG should seek to verify the extent to which restrictions on land-use may lead to future grievances and conflicts due to indirect consequences of the Project. In this regard, it is also important that information on dates of construction of buildings within HCAs be gathered and organized, and compared to the date of approval of the Pipeline's EIA and the date of the law that instituted HCAs (DS 081 MEM 2007).

### *Program Evaluation*

The Stakeholder Engagement Management Plan is improving steadily and is now close to achieving the grievance resolution KPI (SPL4).

## 7.8 Local Hiring and Purchasing Management Plan

### *Progress Reported by PERU LNG*

According to the Q4 2009 Report, during the reporting period, the total number of Peruvians employed in Pipeline activities reached 1,604 workers, which is over 99% of the Pipeline workforce.

Percentage of the Peruvian workforce recruited from local communities reached 80% in October, 90% in November and 93% in December. A total of 1,419 local workers were employed during Q4, as shown below. The percentage of qualified workers was 4% versus 96% of non-qualified workers.

| Region       | Local hiring during Q4 | %          |
|--------------|------------------------|------------|
| Ayacucho     | 1,215                  | 86         |
| Huancavelica | 140                    | 10         |
| Ica          | 64                     | 5          |
| <b>Total</b> | <b>1,419</b>           | <b>100</b> |

The value of food supplies for the camps along the Pipeline's RoW purchased from existing suppliers in Ayacucho and Ica, was US\$ 497,159 durin Q4 2009 (excluding fuel purchased in Pisco).

| Region       | US\$           |
|--------------|----------------|
| Ayacucho     | 305,191        |
| Ica          | 191,968        |
| <b>Total</b> | <b>497,159</b> |

Furthermore, during the March 2010 IESM Mission, PERU LNG provided the following information regarding January and the first half of February, 2010:

- Local Hiring: A total of 867 new hires (Ayacucho 49%, Huancavelica 48% and Ica 3%).
- Local Purchasing: Local procurement during January 2010 was US\$ 145,337 (Ayacucho, 66%; and Ica, 34%).

#### *Scope of the IESM Team's Review*

During the March 2010 IESM Mission, the IESM Team attended a presentation of PERU LNG's Community Relations staff dealing with local hiring and local purchasing issues.

Interviews were carried out with Cochas and Llachoccmayo community authorities and with Chiara's district mayor. They were consistent in recognizing that, while there were some shortcomings and misunderstandings between the Project and the communities regarding local labor organization issues, all community members had worked on a shift-based schedule during the Pipeline construction process.

#### *Compliance Assessment*

The program is compliant with ESIA requirements and with PERU LNG's social commitments.

#### *Results Assessment*

This program is having a positive impact in community members and local providers.

#### *Suggestions and Recommendations*

Given that the number of local workers required by the Project will tend to diminish in the coming months, a communication strategy must be developed and implemented in order to prevent stoppages related to high expectations in relation to local hiring.

#### *Program Evaluation*

This program is in compliance with the applicable social commitments.

## 7.9 Livelihood Restoration Assistance Action Plan

### *Progress Reported by PERU LNG*

According to PERU LNG's Q4 2009 Report, Atinchik (implementing partner responsible for the Plan) has carried out the following activities:

- Trained 13 ALFAs (Spanish acronym for local facilitator apprentices). One per each beneficiary community.
- Updated each community's social and economic baseline information.
- Identified 172 women as beneficiaries of the plan's first component (empowerment of the most vulnerable families in PERU LNG's direct area of influence to efficiently manage their financial resources and improve their wellbeing). They received training on personal empowerment and construction of a "family vision".
- The program also identified 370 children as beneficiaries of this component. They will be involved in three activities: "Biodiversity Guardians", "Knowing my Community" and "Personal Savings".
- Regarding the second component of the program (to have communities design their own strategic plans and manage their local development projects), the following activities were reported: thirteen (13) communities developed their visions in participatory workshops; fourteen (14) workshops were carried out in order to design community projects. In total, 250 attendees participated in these events. As a result, a "Reforestation Project" and a "Community Strengthening Organization Project" have been identified by the communities as priorities.

During the March 2010 IESM Mission, the IESM Team was informed that several ALFAs have taken the initiative to create development project profiles for their communities, to be presented to different State agencies. As part of this process, four "*nucleos ejecutores*" (executing units) have been organized in these communities in order to present documentation to access State funding for infrastructure development.

Each of the communities has expressed strong interest in reforestation projects, and the Huaytara community is already implementing a tree plantation of 4,000 pines acquired from Agrorural.

During the March Mission, the IESM Team was informed of delays in the programmed workshops due to weather conditions as well as agricultural and herding cycles.

It was also reported that since mid-January, PERU LNG decided to temporarily stop social programs in the district of Vinchos in reaction to construction work stoppage by the community of Vinchos (that is one of several communities in the district). This program restarted its activities in the district of Vinchos in the beginning of March, though activities with the community of Vinchos continued to be interrupted, in part because community leaders will not allow it to continue while its claims are not met.

The IESM Team was also informed of a planned meeting between the various social program implementing partners in order to coordinate efforts.

#### *Scope of the IESM Team's Review*

During the March Mission, the IESM Team attended a business management workshop conducted for the Pilpichaca community reforestation committee in which team members discussed the program's progress with Atinchik representatives and community members. The information provided in the meeting is already described above.

#### *Compliance Assessment*

The program is currently compliant with ESIA requirements and with PERU LNG's social commitments. However, interruption of plan activities at the community of Vinchos is not a good practice and may jeopardize the plan's effectiveness.

#### *Results Assessment*

The implementing partner – Atinchik – has shown a keen knowledge of the cultural particularities of the beneficiary populations as well as of the appropriate participatory methods to gain their input. Atinchik has made substantial progress in the workshops for improving communities' development vision as well as in the training of apprentice facilitators (ALFAs). The apprentices are showing keen interest in leading community initiatives to carry out development projects. ALFAs are starting to be recognized and selected for leadership roles and local authorities are responding with funding options for community project proposals.

#### *Suggestions and Recommendations*

An adequate level of coordination between this program and other social investment (additionality) efforts of PERU LNG is essential to create synergies between them as well as to prevent misunderstandings or interferences.

The effectiveness of the program is directly linked to the ability of the communities to successfully achieve funding for their development projects. The best possible support and advice from Atinchik is crucial in order to maximize the possibilities of success of the communities' initiatives.

The IESM Team recommends that this program, as well as all social investment initiatives, should not be temporarily interrupted in a district when one of its communities interrupts construction works. Such temporary interruptions are counterproductive and jeopardize the success of the program.

### *Program Evaluation*

The program has shown good progress and proactive actions towards the achievement of its objectives. However, the identification of indicators needs to be completed and integrated in the program evaluation. An overall assessment of livelihood restoration results must also be planned for implementation within the time-frame agreed with the Lenders.

### 7.10 Pipeline Compensation Management Plan

#### *Progress Reported by PERU LNG*

According to the PERU LNG's Q4 2009 Report, at the end of Q4, the remaining payments to local communities and individual beneficiaries regarding the RoW were as summarized in the following table:

| Description                                                                 | Total | Negotiated contracts | Pending First Payment | Pending Second Payment | Pending Third Payment |
|-----------------------------------------------------------------------------|-------|----------------------|-----------------------|------------------------|-----------------------|
| <b>OWNERS</b>                                                               |       |                      |                       |                        |                       |
| Number of contracts executed with the 35 communities along the Pipeline RoW | 73    | 73                   | 0                     | 0                      | 30                    |
| Number of contracts executed with Individual and Group of Owners            | 350   | 350                  | 0                     | 0                      | 15                    |
| Total number of contracts with Owners                                       | 423   | 423                  | 0                     | 0                      | 45                    |

| Description                               | Total        | Negotiated contracts | Pending First Payment | Pending Second Payment | Pending Third Payment |
|-------------------------------------------|--------------|----------------------|-----------------------|------------------------|-----------------------|
| <b>POSSESSORS</b>                         |              |                      |                       |                        |                       |
| Total number of contracts with possessors | 2,081        | 2,081                | 0                     | 1                      | 394                   |
| <b>TOTAL AGREEMENTS</b>                   | <b>2,504</b> | <b>2,504</b>         | <b>0</b>              | <b>1</b>               | <b>439</b>            |

Additionally, the following figures on the number and forms of land acquisition / compensation contracts were provided:

| Forms of Land Acquisition                                    | Contracts |
|--------------------------------------------------------------|-----------|
| Legal Easement of the RoW established by Supreme Resolution  |           |
| • State land                                                 | 10        |
| • Impositions                                                | 3         |
| Land for above ground facilities (valves, metering stations) | 24        |
| Temporary and permanent Extra Work Space (392.5 ha)          | 1576      |

### *Scope of the IESM Team's Review*

During the March Mission, the IESM Team attended an Easement and Land Acquisition presentation that described the updated program status. The following table summarizes the status of the remaining payments of the RoW as of the end of February.

| Description                                                                 | Total        | Negotiated contracts | Pending First Payment | Pending Second Payment | Pending Third Payment |
|-----------------------------------------------------------------------------|--------------|----------------------|-----------------------|------------------------|-----------------------|
| <b>OWNERS</b>                                                               |              |                      |                       |                        |                       |
| Number of contracts executed with the 35 communities along the Pipeline RoW | 73           | 73                   | 0                     | 0                      | 21                    |
| Number of contracts executed with Individual and Group of Owners            | 350          | 350                  | 0                     | 0                      | 8                     |
| Total number of contracts with Owners                                       | 423          | 423                  | 0                     | 0                      | 29                    |
| <b>POSSESSORS</b>                                                           |              |                      |                       |                        |                       |
| Total number of contracts with possessors                                   | 2,081        | 2,081                | 0                     | 1                      | 282                   |
| <b>TOTAL AGREEMENTS</b>                                                     | <b>2,504</b> | <b>2,504</b>         | <b>0</b>              | <b>1</b>               | <b>311</b>            |

As can be seen in the table above, significant progress with final (3<sup>rd</sup>) payments was achieved during early 2010. In this regard, PERU LNG representatives informed that some delays in 3<sup>rd</sup> payments are related to requests for renegotiation by some owners or possessors, as well as some dissatisfaction with the biorestoration program.

The IESM Team reviewed the documentation of the negotiation processes with the communities of Virgen de Cocharcas de Cochas and Llachoccmayo and held interviews with community representatives.

The community of Virgen de Cocharcas de Cochas had 9.6 km of Pipeline in its lands. Initial compensation, based on the technical appraisals, was established in 2007. The agreement was later modified (2008) and the total compensation increased five times, including a change in the design plan as well as the addition of extra work areas.

The IESM Team met with the president of the Virgen de Cocharcas de Cochas community, who expressed community consent regarding the compensation amount given by PERU LNG. This money remains in the community bank account because they have not yet decided what to do with it. Negotiations regarding permanent road access are pending.

In addition to issues of compensation, the community president emphasized the gratitude of the community for the “*apoyo*” (support) received from the Company for community infrastructure development: a potable water system, a multi-use sports field, and a fish farm facility. The president also acknowledged that all community members had the opportunity to work on the project, even if there were some problems with the system of worker rotation. While he stated that there will always be high expectations regarding community benefits from the presence of the Project, he stressed that the relationship is positive and that they are grateful for the support received thus far.

The community of Llachoccmayo has 1.8 km of Pipeline in its lands. The compensation for the use of this was initially agreed in 2006. Further compensation was given to the community due to extra work areas in 2008, in an amount 8 times larger than the initial compensation.

The IESM Team meeting with the president of the Llachoccmayo negotiation commission revealed similar opinions regarding the relationship with the Project. While acknowledging that at some points the negotiations were difficult and frustrating, at the end they arrived at a satisfactory agreement. The community is using the compensation monies to establish a micro-lending system (banco comunitario) for community members.

Associated with negotiations due to the stoppages related to the TUPA required by the Municipality of Chiara, the community of Llachoccmayo also benefited from the construction of primary and secondary electric networks. While this infrastructure is not directly linked with the compensation process, it is important for community perceptions of the Project. The president of the Llachoccmayo negotiation commission confirmed an excellent relationship with the Project, and stated that community members are satisfied and trust the Project.

### *Compliance Assessment*

The information provided indicates that this program is compliant with ESIA requirements and with PERU LNG’s social commitments. Nevertheless, some monitoring results and data required by the terms of the Plan will need to be complemented.

### *Results Assessment*

The program is ongoing and managing the necessary agreements for acquisition of easement rights necessary for the Project. The meetings with various community authorities showed that while the negotiations have not been always easy, there is a good and trusting relationship between them and the Project.

### *Suggestions and Recommendations*

None at this time. However, final reporting requirements are still subject to review by Lenders.

### *Program Evaluation*

The program has a satisfactory performance and is meeting applicable social requirements of the Project. Though there are some pending claims that involve final compensation, primarily in the Vinchos community, these are being managed through the Project's Community Relations processes, including the grievance mechanism, and are expected to be satisfactorily resolved.

## **8.0**

### **Additionality Programs**

PERU LNG is implementing several Corporate Social Responsibility (CSR) projects associated to the Pipeline. Progress reported in Q4 2009 is summarized below.

#### *Goodwill initiatives*

According to the Q4 2009 Quarterly Report, the following activities were implemented:

The donation of computers and mini-libraries in the Ayacucho region continued. A total of 160 computer modules and 27 mini-libraries were delivered. In the case of the Huancavelica region, 25 computers and 5 mini-libraries were donated.

During Q4 2009, 5 furniture and 5 kitchenware kits were delivered to Patibamba Community. Likewise, the Christmas Campaign implemented by PERU LNG included the delivery of: 10,000 backpacks with school supplies, preschool books and Christmas cakes to children attending PRONEI schools, nurseries and primary and secondary schools within the area of influence of the Project in the regions of Ayacucho and Huancavelica.

#### *Short Term Initiatives Program*

PERU LNG reported the following activity:

#### Camelid Health Management Program - CONOPA

- 4 informative workshops presented the program's final report to the communities (including the interpretation of laboratory results of domestic camelid status in the communities within the Huancavelica region).

- Assistance to 958 alpaca breeding families and to 90 families that manage vicuña fibers. Assistance included technical training and medical evaluation of the animals.
- 86 training courses and workshops were implemented (camelids health management and production, sanitary management for adult animals, alpaca breeding practices, sustainable management of vicuñas).
- 119,750 alpacas were vaccinated against *Enterotoxemia*.
- 40,236 alpacas were treated for parasites.

In December 2009, this project was awarded first prize in the category “Efforts to Promote Local Development” within the “Sustainable Development Award Contest 2009” organized by the National Society of Mining, Petroleum and Energy.

*Veterinary Campaigns* were developed, organized and implemented in coordination with the San Cristobal National University of Huamanga. During Q4 2009, this program benefitted 10 communities and annexes in Ayacucho. Nine (9) veterinary kits were delivered, 14,611 animals of 232 stockbreeders were vaccinated, and 173 stockbreeders were trained.

#### Health Campaigns

Two (2) *Health Campaigns* were carried out with the local population in agreement with the Regional Government of Ayacucho. A total of 2,200 beneficiaries and 4,700 medical attentions were registered.

#### *Medium to Long Term Initiatives*

##### PERU LNG Integrated Agricultural Project - *Allin Minkay*

According to the PERU LNG Q4 2009 Report, activities of the four components of the program were as follows:

- Agricultural Enhancement

This component intends to introduce 8 low cost agricultural technologies at household level to improve the family’s living and income standards. The beneficiaries are 8 to 10 families in 50 communities within the area of direct influence of PERU LNG. Hence, a total of 500 families are expected benefit via the improvement of their diet, promotion of family development, and protection of the environment. The technological package rests in the successful introduction of the irrigation system which is critical for the implementation of most of the other technologies. The technologies are:

- Sprinkler and Drip Irrigation Systems
- Fixed Agriculture Plots
- Improved Pastures

- Mini Plots for Grains and Tubers
- Agro Forestry
- Organic Fertilizers
- Rearing of Hens
- Rearing of Guinea Pigs

In Q4 2009, the Amazon-Andean Center for Development (AACD) was selected as the implementing partner for this component.

The IESM Team believes that the success of this program will rest on how the technological packages are adapted to the specific local technological and cultural reality of each beneficiary community. The introduction of these packages requires a strong shift in the allocation of family labor - a shift that will only be made possible with a strong commitment of the family and with reinforcement of the new practices over a sufficient period of time.

- Camelid Related Infrastructure Program

This component aims to provide technical assistance to camelid breeders of both alpacas and vicuñas via infrastructure, equipment, and training enhancement. In the case of alpaca production enhancement, the execution of this component will include the construction of alpaca sheds and training on techniques for enhancement of alpaca reproduction. In the case of vicuña breeders, the execution of this component will include the implementation of vicuña shearing modules and training on vicuña fiber de-hairing and cleaning.

The beneficiaries are located in 10 communities: Ayavi, Huaytará, Ccarhuancho, Llillinta-Ingahuasi, Pillpichaca and Santa Rosa de Tambo from the Huancavelica region as well as Ccarhuacpampa, Churia-Rosaspampa, Occollo-Azabrán, and Paccha from the Ayacucho region.

During the March Mission, the IESM Team was informed that the procurement process was in progress and the contract would be awarded by June.

- Rural Microfinance Program

The objective of this component is to implement a program for the provision of micro-finance for individual community members through the establishment of a total of 30 Community Banks and 10 Rural Enterprises in the following 15 communities: Huaytará, Ayaví, Tambo, Pillpichaca, Llillinta, and Ingahuasi in the Huancavelica region as well as Tambocucho, Sallalli, Urpaypampa, San José de Mayobamba, Vinchos, Occollo, Azabrán, Paccha and Rosaspampa in the Ayacucho region.

FINCA Perú, with its long experience of organizing women's communal banks, has been selected as the implementing partner for this component. During the Mission, the IESM Team attended one FINCA workshop on the establishment of a community bank in the community of Tambocucho. The workshop was in Quechua language and had an attendance of 6 men and 9 women. The IESM Team also visited FINCA Peru offices in Ayacucho where their representatives detailed their model for implementation of community banks.

- Irrigation Infrastructure Program

This component plans to build small irrigation and potable water systems in communities located in Ayacucho and Huancavelica. During Q4 2009, the selected implementation partner, TADEPA, visited each one of the communities to collect necessary information. Three projects have been selected in the Huancacasa, Ayaví and Huaytará areas, and construction commenced in January 2010. Additional projects will be selected in Q1 2010 in Ayacucho.

During the March Mission, the IESM Team visited the Huatasqocha irrigation system under construction, located in a neighboring area of the Ayavi community. The system will irrigate 19 ha, 4 of which include irrigation by sprinklers in the first stage. Eighty (80) community members will benefit, with a total cost of approximately US\$ 150,000. This component also includes the training of the irrigator's association in the system's operation and maintenance. The beneficiaries of the system also work in the construction process. The authorities as well as community members expressed their satisfaction and thanks to PERU LNG for making possible a project that directly increases the productivity of their crops.

The IESM Team was informed that a coordination workshop between the executors of the Livelihood Restoration Assistance Action Plan and all other PERU LNG social investment program implementation partners would take place the week after the March IESM Mission. Such coordination between programs is crucial in order to prevent overlaps and to develop synergies.

### Enhancing Royalty Investment

Enhancing Royalty Investment is a PERU LNG initiative in cooperation with the International Finance Corporation (IFC), and is the result of a situational analysis of the provincial governments in La Mar, Huamanga, and Huaytara. This institutional strengthening project seeks to improve management capabilities in implementing public investment projects.

According to the PERU LNG's Q4 2009 Report, the provincial governments prioritized different projects:

- Huamanga: Public investment program on food security.
- La Mar: Installation of potable water and sanitation systems in eight communities.
- Huaytará: Building of a waste management system.

During Q4 2009, the municipality of Huamanga identified the project and formulated it, the municipality of La Mar identified the project and contracted a local consultant to prepare the pre-investment documents, and the municipality of Huaytará just concluded the project identification stage.

## **9.0**

### **Project KPI Analysis**

#### 9.1 Environmental Indicators

Environmental KPI's applicable to the Pipeline as reported by PERU LNG in its Q4 2009 Report have been generally compliant with performance targets. By the end of Q4 all open Corrective Action Requests (CARs) were closed. For EPL5 (Waste), no CARs were raised on Waste Management issues. For EPL11, Erosion Control and Reinstatement, one CAR was raised in November. All the other environmental KPIs were met, partly because many refer to construction activities that are no longer active.

#### 9.2 Social Indicators

All performance targets established in the Social KPI's for the Pipeline were met during Q4 2009 with the only exception of SPL4 - Grievance Redress Indicator. While the performance target is 90%, the achieved performance only reached 17% in November and 33% in December. In spite of this, grievance redress has improved considerably over previous quarters, as commented in Section 7.7 of this report.

#### 9.3 Health and Safety Indicators

Pipeline health and safety performance continued to be outstanding during Q4 2009, with the Lost Time Incident Rate well below the Project's KPI. In effect, the LTIR varied between 0.09 in October and 0.08 in November and December, as compared to a KPI of 0.50.

During Q4, only one medical attention as Lost Time Incident was reported. A group of operators was removing the protection roof from a generator. One of them fell down from a ladder sustaining multiple contusions in different parts of the body.

## 10.0

### Consolidated Suggestions and Recommendations

It should be mentioned that, in general, the IESM Team encountered a very high standard of quality in the implementation of closure and reinstatement and biorestation works in the RoW. In many of the visited areas, the RoW's vegetation cover was almost unnoticeable when compared to pre-existing areas outside the RoW. The following recommendations and suggestions aim at contributing to the maintenance of the Project's high quality until the finalization of the construction phase.

Recommendations set forth herein are classified into six main categories as follows:

| Recommendation Type | Subject                                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Type 1              | Recommendations affecting PERU LNG's E&S Assurance Procedures relative to construction                                          |
| Type 2              | Recommendations requiring PERU LNG to request corrective action from TECHINT                                                    |
| Type 3              | Recommendations relative to ongoing E&S Programs                                                                                |
| Type 4              | Suggestions relative to Additionality Projects                                                                                  |
| Type 5              | Requests for inclusion of complementary information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports |
| Type 6              | Recommendations for future action in view of perceived environmental and social upcoming risks                                  |

New recommendations resulting from the March IESM Mission are presented below, organized according to the six categories specified above. A Recommendation Tracking Table is presented in **Annex 02**.

#### **Type 2 - Recommendations requiring PERU LNG to request corrective action from TECHINT**

- At several points of the Pipeline's Central Spread alignment, the RoW is intercepted by unpaved public roads. Sediment runoff from the roads' surface was seen to enter sectors of the RoW that had already been reinstated and where biorestation has been initially implemented, locally affecting its success. This can be avoided through construction of lateral berms along the unpaved roads downstream side, and other equally simple erosion control procedures.
- On the slope approaching the Yucay river crossing, RoW reinstatement and biorestation works were found to be excellent. However, the local unpaved road that zigzags its way up the slope with general alignment parallel to the RoW, and that was altered by the Project, was found to need significant drainage improvements. It is important to improve at least the following aspects:

- Transversal inclination of the roads' platform should be towards the interior of the slope (directing rainwater flow to a channel at the base of the cut section).
  - At the curves of the zigzagging alignment, water from this channel should be directed towards an appropriate hydraulic structure that will release it to the adjacent natural channels, avoiding any local erosion.
  - Where the road curves overlap the RoW, flow is being appropriately directed to one of the RoWs' erosion control slope breakers, but monitoring will be necessary to verify that the hydraulic capacity of these is sufficient to handle the flow volume coming from the road.
  - Also with regards to the slope barriers, due to additional flow received from the road, it is necessary to implement hydraulic structures on the downstream end of the RoW.
- Near Yucay River crossing, a pickup truck carrying a 1.5 to 2.0 m<sup>3</sup> plastic container with diesel was observed. This vehicle had no coded identification of the hazardous product it carried, neither was there any secondary containment or spill response resources.
  - Along the road from Ayacucho to Patibamba, that was significantly improved by PERU LNG for construction purposes, some erosion control works and gabion barriers built by TECHINT near the Torobamba River crossing have collapsed. It will be necessary to correct this situation urgently, as it represents a safety hazard.
  - At a borrow pit near Valve N° 1, reinstatement and biorestore activities were in progress. The need for complementary drainage works to ensure that no erosion will affect this area in the future was observed on site.

### **Type 3 - Recommendations Relative to Ongoing E&S Programs**

- In the BMAP, the general procedure (protocol) for selection of sampling sites is expected to function well for most of the monitored species. Level of human disturbance near the sampling sites should be one of the monitoring variables and this should be supported by satellite imagery to be acquired periodically for GIS purposes.
- It is important to plan the continuity of the PMSAP during the operational phase, including training workshops with all monitors from the different areas of the Project.

- Given that the number of local workers required by the project will tend to diminish rapidly in the coming months, a communication strategy must be deployed in order to prevent stoppages related to high expectations in relation to local hiring. An adequate level of coordination between the Local Hiring and Purchasing Management Plan and other social investment (additionality) efforts by PERU LNG is essential.
- The IESM Team recommends that, as possible, none of the Social Investment Programs be temporarily interrupted in a district or community when construction work stoppages or other similar attitudes are adopted. Such interruptions are counterproductive in the middle term and jeopardize success of the Programs. The IESM Team suggests carrying out an evaluation of the lessons learned of this program.

#### **Type 5 - Requests for inclusion of complementary information in PERU LNG's Environmental, Social and Health and Safety Quarterly Reports**

- Regarding social grievances, it is important to include in the reports both the location (Kp) and the name of the person who was affected, in order to help PERU LNG to solve the problem in a more expedite way and to facilitate verification by the IESM Team as appropriate.
- Future reporting on the Cultural Heritage Management Plan by PERU LNG should include a detailed list of pending permits and authorizations at quarter end. This will be of great assistance for the assessment of the program status and the level of effort necessary to complete proceedings with INC.
- PERU LNG should carefully organize all available documentation on the dates of construction of existing occupation within High Consequence Areas, and compare to other dates (pipeline EIA approval, pipeline construction and date of issuance of pertinent legislation).

#### **Type 6 - Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks**

- It will be important to pay special attention to potential damages caused to crops or infrastructure due to the construction work stoppage at the community of Vinchos. In that sector, along a 6 km segment of the RoW, reinstatement works were only partially implemented, as the community leadership is not allowing PERU LNG to continue work while its claims for additional compensation are not resolved. Damage to third party property as a result of runoff during the ongoing rainy season may result from this situation, and it will be important for PERU LNG to fully

document any such situation once it is allowed to resume reinstatement and biorestore activities.

- Though it was not inspected, it was reported that an access road built for the Project near Oscoccocha, will not be reinstated and will remain operational after construction at the local communities' request and DGAEE's approval. This access is 4.8 km long and will serve the community of Anchiuay and Chiquintirca. Currently, topsoil is piled along the alignment, with provisional fences to contain runoff. It will be essential that this road be delivered complete to the local communities. This means that the provisional fences must be removed and the top soil piles need to be spread and/or stabilized as appropriate. Proper road drainage needs to be completed as well, and any area lacking vegetation cover should be biorestored. Only then should the access be delivered to the communities that will from then on be responsible for its maintenance.
- Another access built for the Project reaching the RoW at Kp 18 was inspected. This 4.8 km access will be reinstated according to notification from DGAEE, in spite of the local communities' request that it remain. PERU LNG reported that originally, there was a pedestrian track in area of Osqococha which has been reinstated.. Some form of acceptance of this final condition should be established with the local community.
- Though it is clear that continued maintenance of pre-existing roads that were improved by the Project will not be a PERU LNG responsibility, it is important that the conditions in which these improved roads are delivered to communities or other entities to be responsible for maintenance, be and formally documented, such that any future problems resulting from inadequate maintenance are not attributed to poor construction work by PERU LNG's contractors.
- A thorough contamination due diligence assessment should be concluded if responsibility for Santa Beatriz camp is transferred to TECHINT.
- In agricultural areas along the coast that have been already subject to bio-restoration, a round of interviews with affected farm-owners should be carried out after the first post-construction harvest. This will allow for verification of the effectiveness of implemented bio-restoration measures, in terms of eliminating low areas, removing stones, and/or restoring fertile topsoil.



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## ANNEXES

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**ANNEX 01**  
**List of Documents Reviewed**

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## **ANNEX 01**

### **List of Documents Reviewed – PERU LNG – PIPELINE**

Aide Memoire for Environmental Inspectors  
Anchihuay Camp Closure Checklist  
Biorestoration Progress (Feb 2010)  
Central Spread Lender Presentation March 2010  
Chiquintirca (new Jolpas) Noise Monitoring Feb 2010  
Community Relations Pipeline Feb 2010  
Detailed negotiation example in Cochas and Llachocmayo  
EAP Status 28.02.10  
Example of RoW Punchlist (Kp 28-30)  
L&E Summary Feb 2010  
Monthly Report - OSINERGMIN - Jan 10  
Monthly Report - OSINERGMIN - Nov 09  
Monthly Report - OSINERGMIN - Dec 09  
Tentative Biorestoration Schedule for 2010-2011  
PMSAP Presentation – Mar 2010

In addition to the above, the L&E team provided JGP and Lenders on March 01, 2010 with a CD containing the following documents:

Letters to the Municipalities  
Letters to OSINERGMIN and OMBUDSMAN  
Letters to the Ministry of Energy and Mines  
Letters to Defensoría de Camisea  
Letters to Defensoría del Pueblo  
Letters to MINEM  
Cochas 01-PF1-CO\_Expediente\_Identificacion\_1  
Cochas 02-PF1-CO\_Expediente\_Valorizacion\_1  
Cochas 03-Cta\_Inv\_1\_PF1-CO\_v01  
Cochas 04-Minuta\_PF1-CO\_v01  
Cochas 05-PF1-CO\_Testimonio\_1  
Cochas 06-Recibo\_PF1-CO\_v01  
Cochas 07-Copia\_Literal\_Serv\_PF1-CO\_v01  
Cochas 08-PF1-V2-CO\_Expediente\_Identificacion\_1  
Cochas 09-Acta\_No\_Acu\_PF1\_V2-CO\_v01  
Cochas 10-Cta\_Inv\_1\_PF1\_V2-CO\_v01  
Cochas 11-Acta\_PF1\_V2-CO\_v01  
Cochas 12-PF1-V2-CO\_Testimonio\_1  
Cochas 13-Elec\_Jun\_Dirc\_PF1-CO\_v01  
Cochas 14-Com\_Neg\_PF1-CO\_v01  
Cochas 15-Dec\_Jur\_Conv\_Quo\_PF1-CO\_v01  
Llachocmayo 01-PF1-LLA\_Expediente\_Identificacion\_1



Llachocmayo 02-PF1-LLA\_Expediente\_Valorizacion\_1  
Llachocmayo 03-PF1-LLA\_Adicionales\_1  
Llachocmayo 04-Oficio\_PF1-LLA\_v01  
Llachocmayo 05-Cta\_Inv\_1\_PF1-LLA\_v01  
Llachocmayo 06-Minuta\_PF1-LLA\_v01  
Llachocmayo 07-Esc\_pub\_PF1-LLA\_v01  
Llachocmayo 08-Copia\_Literal\_Serv\_PF1-LL\_v01  
Llachocmayo 09-Const\_Ent\_PF1-LLA\_v01  
Llachocmayo 10-Recibo\_PF1-LLA-S\_v02  
Llachocmayo 11-PF1-LLA-EA\_Expediente\_Identificacion\_1  
Llachocmayo 12-Cta\_Inv\_1\_PF1-LLA-EA\_v01  
Llachocmayo 13-PF1-LLA-EA\_Contrato\_1  
Llachocmayo 14-Recibo\_PF1-LLA-EA\_v01  
Llachocmayo 15-Cons\_Ent\_PF1-LLA-EA\_v01  
Llachocmayo 16-Acta\_Asamb\_Ext\_PF1-LLA\_v01  
Llachocmayo 17-Asamb\_Extrao\_PF1-LLA-EA\_v01  
Llachocmayo 17-Dec\_Jur\_PF1-LLA\_V01  
Llachocmayo 18-Copia\_Lit\_Nom\_Com\_PF1-LL\_v01  
EASEMENT PROCEDURE - English  
EASEMENT PROCEDURE - Spanish  
Expert Report on Easement Appraisal  
Expert Report on Easement Appraisal – Spanish

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**ANNEX 02**  
**Recommendation Tracking Table - PERU LNG Pipeline**

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## ANNEX 02

### RECOMMENDATION TRACKING TABLE - PERU LNG Pipeline - MARCH 2010

| Type 1 - Recommendations affecting PERU LNG's E&S assurance procedures relative to construction |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                   |                                  |                                                                                                        |                                                    |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Date                                                                                            | Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Subject                                           | Risks                            | Corrective Action Reported                                                                             | Current Status                                     |
| 09.09                                                                                           | <p>It is requested that the next EHS Management System audit, required by December as per the Environmental and Community Affairs Assurance Plan and the EHS Non-Conformance and Corrective Action Procedure, be an external audit, placing particular emphasis on verification of construction supervision routines and procedures. As mentioned elsewhere in this report, environmental representatives conducting inspections are not always identifying non-compliances, some of which have been considered significant in past IESM Missions. The audit should identify the reasons for this, through verification of construction environmental assurance procedures over the six-month period preceding December. The terms of reference for hiring the external EHS Management System audit should be submitted for review and comments by the IESM Team before disclosure. Key aspects to be verified should include:</p> <ul style="list-style-type: none"> <li>• Inspection planning and schedules</li> <li>• Staffing</li> <li>• Training</li> <li>• Inspection records</li> </ul> | Construction Environmental Supervision Procedures | Non-conformance<br>Risk of image | RSK –UK was hired and conducted the audit. The final report was still pending during the March Mission | To be checked as soon as RSK-UK report is received |

| Type 2 - Recommendations requiring PERU LNG to request corrective action from TECHINT |                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                    |                                    |                            |                |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------|----------------------------|----------------|
| Date                                                                                  | Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Subject                            | Risks                              | Corrective Action Reported | Current Status |
| 03.10                                                                                 | At several points of the Pipeline's Central Spread alignment, the RoW is intercepted by unpaved public roads. Sediment runoff from the roads' surface was seen to enter sectors of the RoW that had already been reinstated and where bio-restoration has been initially implemented, locally affecting its success. This can be avoided through construction of lateral berms along the unpaved roads downstream side, and other equally simple erosion control procedures. | Erosion Control<br>Bio restoration | RoW stability<br>Maintenance Costs | Pending                    |                |

## Type 2 - Recommendations requiring PERU LNG to request corrective action from TECHINT

| Date  | Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Subject                        | Risks                                                                     | Corrective Action Reported | Current Status |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------|----------------------------|----------------|
| 03.10 | <p>On the slope approaching the Yucay river crossing, RoW reinstatement and bio-restoration works were found to be excellent. However, the local unpaved road that zigzags its way up the slope with general alignment parallel to the RoW, and that was improved by the Project, was found to need significant drainage improvements. It is important to improve at least the following aspects:</p> <ul style="list-style-type: none"> <li>o Transversal inclination of the roads' platform should be towards the interior of the slope (directing rainwater flow to a channel at the base of the cut section).</li> <li>o At the curves of the zigzagging alignment, water from this channel should be directed towards an appropriate hydraulic structure that will release it to the adjacent natural channels, avoiding any local erosion.</li> <li>o Where the road curves overlap the RoW, flow is being appropriately directed to one of the RoWs' erosion control slope breakers, but monitoring will be necessary to verify that the hydraulic capacity of these is sufficient to handle the flow volume coming from the road.</li> <li>o Also with regards to the slope barriers, due to additional flow received from the road, it is necessary to implement hydraulic structures on the downstream end of the RoW.</li> </ul> | Erosion Control                | Environmental Impacts<br>Community Claims                                 | Pending                    |                |
| 03.10 | Near Yucay River crossing, a pickup truck carrying a 1.5 to 2.0 m <sup>3</sup> plastic container with diesel was observed. This vehicle had no coded identification of the hazardous product it carried, neither was there any secondary containment or spill response resources.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Pollution Prevention           | Soil and Water Contamination<br>Contamination of Third Party Property     | Pending                    |                |
| 03.10 | Along the road from Ayacucho to Patibamba, that was significantly improved by PERU LNG for construction purposes, some erosion control works and gabion barriers built by TECHINT near the Torobamba River crossing have collapsed. It will be necessary to correct this situation urgently, as it represents a safety hazard.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Erosion Control<br>Road Safety | Transportation Accidents<br>Community and Legal Claims<br>Reputation Risk | Pending                    |                |
| 03.10 | At a borrow pit near Valve N° 1, reinstatement and bio-restoration activities were in progress. The need for complimentary drainage works to ensure that no erosion will affect this area in the future was observed on site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Erosion Control                | Environmental Impact<br>Damage to Third Party Property                    | Pending                    |                |

### Type 3 - Recommendations Relative to Ongoing E&S Programs

| Date  | Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Subject                                                | Risks                                                                        | Corrective Action Reported                                           | Current Status                                                                   |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 07.09 | Define specific KPIs to be adopted for performance assessment of the Livelihood Reestablishment Assistance Action Plan to be performed by Atinchik                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Livelihood Reestablishment Assistance Action Plan      | Risk of unwarranted community claims                                         | Pending                                                              |                                                                                  |
| 12.09 | An adequate level of coordination between the Livelihood Restoration Assistance Action Plan and the other social investment (additionality) efforts of PERU LNG is important, in order to create synergies among these programs and avoid misunderstandings that could decrease their effectiveness and benefits for the communities. PERU LNG has to apply its best efforts in order to coordinate all these different social programs. There has been visible improvement in information coordination between ProNaturaleza and PERU LNG Community Relations to establish the best possible way for processing data from social and communication channels between PMSAP and PERU LNG regarding social concerns. Continuation of these coordination efforts is recommended. | Community relations                                    | Risk of unwarranted community claims<br>Risk of unwarranted community claims | Pending                                                              |                                                                                  |
| 12.09 | It is important to plan the continuity of the PMSAP during the operational phase, including training workshops with all monitors from the different areas of the Project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Pipeline Safety/Risk Management Emergency Preparedness | Lack of adequate emergency response                                          | PERU LNG has submitted the ESHS – MS that includes Contingency Plans | Adequacy of the Contingency Plans to be established upon review of the ESHS - MS |
| 03.10 | It is important to plan the continuity of the PMSAP during the operational phase, including training workshops with all monitors from the different areas of the Project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Participatory Monitoring                               | Lack of Adequate Stakeholder Engagement                                      | Pending                                                              |                                                                                  |
| 03.10 | The IESM Team recommends that, as possible, none of the Social Investment Programs be temporarily interrupted in a district or community when construction work stoppages or other similar attitudes are adopted. Such interruptions are counterproductive in the middle term and jeopardize success of the Programs. The IESM Team suggests carrying out an evaluation of the lessons learned of this program.                                                                                                                                                                                                                                                                                                                                                               |                                                        |                                                                              |                                                                      |                                                                                  |

**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 |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------|----------------|
| 03.10 | Regarding social grievances, it is important to include in the reports both the location (Kp) and the name of the person who was affected, in order to help PERU LNG to solve the problem in a more expedite way and to facilitate verification by the IESM Team as appropriate.                                                                         | Grievance Redress                       | Opposition to Project<br>Risks of Image | Pending                    |                |
| 03.10 | Future reporting on the Cultural Heritage Management Plan by PERU LNG should include a detailed list of pending permits and authorizations at quarter end. This will be of great assistance for the assessment of the program status and the level of effort necessary to complete proceedings with INC.                                                 | Cultural Heritage Compliance Management | Institution Relations with INC          | Pending                    |                |
| 03.10 | PERU LNG should carefully organize all available documentation on the dates of construction of existing occupation within High Consequence Areas, and compare to other dates (pipeline EIA approval, pipeline construction and date of issuance of pertinent legislation) as pertinent for verification of applicability of IFC PS 05 and/or IDB OP-710. |                                         |                                         |                            |                |

**Type 6 - Recommendations for Future Action in View of Perceived Environmental and Social Upcoming Risks**

| Date  | Recommendations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Subject                         | Risks                                                    | Corrective Action Reported | Current Status |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------|----------------------------|----------------|
| 12.09 | In order to meet a requirement made by Ccollpas' population, the Project will transfer the current provisional access road to the municipality. Therefore, it is recommended that PERU LNG advise the municipality on the best means of providing adequate protection measures for the existing local school along the access.                                                                                                                                                                                                  | Decommissioning procedures      | Risk of image                                            | Pending                    |                |
| 12.09 | It is recommended that PERU LNG keep documentation of High Consequence Areas adjacent to the RoW, for consultation in case restrictions on future land-use triggers application of the IFC Performance Standard No. 05 and / or IDB OP 710 (Involuntary Resettlement). This documentation should provide evidence of the current situation of the Project's neighboring communities during construction, so that any future potential grievance or claim might be clearly and objectively evaluated in view of Lender policies. | Pipeline Safety/Risk Management | Risk of image<br>Information lost                        | Pending                    |                |
| 03.10 | It will be important to pay special attention to potential damages caused to crops or infrastructure due to the work stoppage in the community of Vinchos. Damage to third party property as a result of runoff during the ongoing rainy season may result from this situation, and it will be important for PERU LNG to fully document any such situation once it is allowed to resume reinstatement activities                                                                                                                | Erosion Control                 | Property Damage<br>Risk of Image<br>Risk of Legal Claims | 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 |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------|----------------|
| 03.10 | Though it was not inspected, it was reported that an access road built for the Project near Oscococha, will not be reinstated and will remain operational after construction at the local communities' request. This access is 4.8 km long and will serve the community of Anchihuay and Chiquintirca. Currently, topsoil is piled along the alignment, with provisional fences to contain runoff. It will be essential that this road be delivered complete to the local communities. This means that the provisional fences must be removed and the top soil piles need to be spread and/or stabilized as appropriate. Proper road drainage needs to be completed as well, and any area lacking vegetation cover should be bio-restored. Only then should the access be delivered to the communities that will from then on be responsible for its maintenance. The IESM Team identifies the Oscococha access as a significant potential source of reputational risk. | Reinstatement and Biorestoration | Property Damage<br>Erosion and other<br>Environmental Impacts<br>Indemnification Claims<br>Reputational Risks |                            |                |
| 03.10 | Another access built for the Project reaching the RoW at Kp 18 was inspected. This 4.7 km access will be reinstated according to notification from DGAAE, in spite of the local communities' request that it remain. PERU LNG reported that originally, there was a pedestrian track in area of Oscococha which has been reinstated.. Some form of acceptance of this final condition should be established with the local community.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Community Relations              | Community opposition to the project<br>Risk of image                                                          |                            |                |
| 03.10 | Though it is clear that continued maintenance of pre-existing roads that were improved by the Project will not be a PERU LNG responsibility, it is important that the conditions in which these improved roads are delivered to communities or other entities to be responsible for maintenance, be documented, such that any future problems resulting from inadequate maintenance are not attributed to poor construction work by PERU LNG's contractors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Community Relations              | Road Safety / Accidents<br>Reputational Risk                                                                  |                            |                |
| 03.10 | In agricultural areas along the coast that have been already subject to reinstatement, a round of interviews with affected farm-owners should be carried out after the first post-construction harvest. This will allow for verification of the effectiveness of implemented reinstatement measures, in terms of eliminating low areas, removing stones, and/or restoring fertile topsoil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                  |                                                                                                               |                            |                |

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**ANNEX 03**  
**Photographic Records of Mission Observations**

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|    | <p><b>Local:</b> Crossing Kp 077 and Valve # 3</p> <p><b>Comment:</b> As most of crossings with public roads in court incline were built gabions to stabilize the RoW. Road access to the valve, which is permanent, includes a water made with cement drainage channel and the channel by its slope has energy sink</p> |
|   | <p><b>Local:</b> Huaychao camp area</p> <p><b>Comment:</b> Panoramic view of the area where the Huaychao) camp was located (mountain plateau. The Row can hardly see on the slope of the Yucay River on its right bank</p>                                                                                               |
|  | <p><b>Local:</b> River Palmitos crossing</p> <p><b>Comment:</b> Note the erosion control works. This crossing did not use seed</p>                                                                                                                                                                                       |
|  | <p><b>Local:</b> The Libertadores route crossing</p> <p><b>Comment:</b> Note the planting of naturalized pastures and coverage of jute erosion control works</p>                                                                                                                                                         |

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|    | <p><b>Local:</b> The Libertadores route crossing</p>                                                                                                                                                                                                                                |
|                                                                                     | <p><b>Comment:</b> Work placement of jute on sowing naturalized grasses</p>                                                                                                                                                                                                         |
|   | <p><b>Local:</b> Acrocco camp area</p>                                                                                                                                                                                                                                              |
|                                                                                     | <p><b>Comment:</b> Acrocco camp was decommissioned and returned to their owners through signed records. The ground is completely revegetated and part of it is already crops with owners' crops. Note the middle road used by the owners and that crosses the ground of ex camp</p> |
|  | <p><b>Local:</b> Acrocco camp area</p>                                                                                                                                                                                                                                              |
|                                                                                     | <p><b>Comment:</b> In Acrocco camp area, the ground is completely revegetated and part of it is already crops with owners crops</p>                                                                                                                                                 |
|  | <p><b>Local:</b> Yucay River crossing</p>                                                                                                                                                                                                                                           |
|                                                                                     | <p><b>Comment:</b> Access road (shoofly) unpaved. Sediment runoff from the roads' surface was seen to enter sectors of the RoW that had already been reinstated and where biorestitution has been initially implemented, locally affecting its success</p>                          |

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|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Local:</b> Slope approaching the Yucay River crossing</p> <p><b>Comment:</b> Local unpaved road that zigzags its way up the slope with general alignment parallel to the RoW, and that was mostly reconstructed by the Project, was found to need significant drainage improvements</p>             |
|   | <p><b>Local:</b> Slope approaching the Yucay River crossing</p> <p><b>Comment:</b> Erosion point near the road. Due to additional flow received from the road, it is necessary to implement some hydraulic dissipaters on the downstream end of the RoW</p>                                               |
|  | <p><b>Local:</b> Slope approaching the Yucay River crossing</p> <p><b>Comment:</b> At the curves of the zigzagging alignment, water from this channel should be directed towards an appropriate hydraulic structure that will release it to the adjacent natural channels, avoiding any local erosion</p> |
|  | <p><b>Local:</b> Yucay River crossing</p> <p><b>Comment:</b> The ground has been reestablish and delivered to the owners. The land is clean and stable without signs of erosive processes</p>                                                                                                             |

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|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Local:</b> Yucay River crossing</p> <p><b>Comment:</b> Ground where the camp was located for the crossing of the Yucay River and hydrostatic testing. The ground has been reestablish and delivered to the owners. The land is clean and stable without signs of erosive processes</p> |
|   | <p><b>Local:</b> Yucay River crossing</p> <p><b>Comment:</b> Hydro-seeding and jute application erosion control works</p>                                                                                                                                                                    |
|  | <p><b>Local:</b> Yucay River crossing</p> <p><b>Comment:</b> Work results of sowing for erosion control</p>                                                                                                                                                                                  |
|  | <p><b>Local:</b> Campana camp region (Kp 026)</p> <p><b>Comment:</b> Work results of sowing for erosion control</p>                                                                                                                                                                          |

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|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Local:</b> Campana camp region</p> <p><b>Comment:</b> Work results of sowing for erosion control</p>             |
|   | <p><b>Local:</b> Campana camp region (Kp 021)</p> <p><b>Comment:</b> Bofedal area with works for soil recuperation</p> |
|  | <p><b>Local:</b> Campana camp region (Kp 021)</p> <p><b>Comment:</b> Bofedal restoration</p>                           |
|  | <p><b>Local:</b> Campana camp region (Kp 024)</p> <p><b>Comment:</b> Work seeding in the slopes</p>                    |

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|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Local:</b> Campana camp region (Kp 021)</p> <p><b>Comment:</b> Bofedal recovery work</p>                      |
|   | <p><b>Local:</b> Campana camp region (Kp 026)</p> <p><b>Comment:</b> Work Results of sowing for erosion control</p> |
|  | <p><b>Local:</b> Campana camp region (Kp 031)</p> <p><b>Comment:</b> Geotechnical recomposition works</p>           |
|  | <p><b>Local:</b> Campana camp region (Kp 031)</p> <p><b>Comment:</b> Geotechnical recomposition works</p>           |

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|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Local:</b> Valve # 1 (Pampas River region)</p> <p><b>Comment:</b> The need for complementary drainage works to ensure that no erosion will affect this area, in the future, was observed on site</p> |
|   | <p><b>Local:</b> Pampas River crossing (Kp 190)</p> <p><b>Comment:</b> Geotechnical recomposition works</p>                                                                                                |
|  | <p><b>Local:</b> River Pampas crossing (Kp 190)</p> <p><b>Comment:</b> Gabions and work results of sowing and jute for erosion control</p>                                                                 |
|  | <p><b>Local:</b> River Pampas crossing (Kp 190)</p> <p><b>Comment:</b> Activities surrounding the Pampas River crossing. Note the proper use of jute and work for the erosion control</p>                  |