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D'APPOLONIA

BAKU-TBILISI-CEYHAN (BTC) Pipeline Project

Report of the Post-Financial Close Independent Environmental Consultant (IEC) Twelfth Site Visit, July 2010

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REPORT OF THE POST-FINANCIAL CLOSE INDEPENDENT ENVIRONMENTAL CONSULTANT (IEC) BAKU-TBILISI-CEYHAN (BTC) PIPELINE PROJECT TWELFTH SITE VISIT, JULY 2010

EXECUTIVE SUMMARY

This report presents the results of the twelfth post-financial visit of the Independent Environmental Consultant (IEC) to Azerbaijan, Georgia and Turkey, between July 12 – 22, 2010 to monitor compliance with BTC Project Environmental and Social (E&S) commitments. The IEC team conducted the visit as a single team covering all three countries.

This site visit represents the fourth IEC Operations audit, which is an annual verification that represents the continuation of an ongoing monitoring process initiated during the construction phase and continued during Operations. The Operations audits focus on the operations team and ongoing operations activities. The reference documents for the Operations audits are the Operations ESAP and the relevant management plans.

This report identifies the miscellaneous non-compliances as encountered in the field, but also focuses on the commitments made by BTC in the September 2007 meeting held at D'Appolonia's office in Genoa, Italy upon which the Schedule 20 document signed by BTC was based and which also formed the basis for the issuance of Schedule 21 - IEC Completion Environmental Compliance Certificate, which was signed by the IEC team. The commitments made by BTC associated with the Schedule 21 represent follow-up activities intended to close construction-related issues that by their nature extended into the Operations phase of the BTC Project.

Now that nearly three years have passed since the signing of Schedule 21, some construction related issues still remain, but activities associated with the Project are dominantly operational. This report reviews both residual construction issues and operations.

Azerbaijan

The basic observation is that for the most part environmental management has become a routine component of operations. Reinstatement of the pipeline has reached the stage where the process is now effectively maintenance checks and reacting as appropriate and this is being done. The main unresolved operations issue is non-compliant NO_x emissions from PSA-2. It was expected that a Management of Change (MOC) would be finalized justifying a higher limit for NO_x emissions based on comparison with EU regulations for the gas-driven MOL generators smaller than 50 MW, but this has not proved to be practical. If the MOL turbines are driven at high loadings such that NO_x emissions are reduced to compliant levels, CO_2 emissions are greatly increased. The Project interprets that there is no cost or environmental benefit to operate the MOL generators at high loadings and proposes that an offset mechanism be developed for the NO_x non-compliance. IEC expects that an offset program will be agreed to prior to the 2011 audit.

Of the construction issues still pending at the time of the signing of Schedule 21, two are still relevant: right-of-way (ROW) access; and protection of the *Iris acutiloba*. A third issue regarding the location of sampling ports on the diesel generator stacks was still unresolved at the time of the IEC visit in 2009, but this has been addressed by an MOC that is acceptable

to the IEC. The Project has maintained a dialogue with the Export Pipelines Protection Department (EPPD) of the Azeri Government to encourage the patrols not to use the ROW for their security patrols, but the situation is little different from what was observed in 2009. The Project is implementing a reinstatement strategy to encourage EPPD to avoid sensitive areas and this may be working in some areas, but it is apparent that the reinstatement in the Gobustan Desert is being impeded by the patrolling. Cumulative effects from other activities in the Gobustan Desert, in particular the construction of a water pipeline not associated with the Project and increased recreational use of this area, have deteriorated the land from what was first observed at the beginning of the BTC Project. Best estimates of the survival of the red listed *Iris acutiloba* where replanted along the ROW are worse than estimates from a year ago, which confirms the negative trend previously established since the completion of construction. In 2009 IEC recommended that the Project start planning offset measures. In 2010 IEC considers that the time to define an offset program is now and will consider the Project to have a significant non-compliance with the ESAP if an offset program has not been initiated by the time of the 2011 IEC audit.

Georgia

The basic observation for Georgia is the same as for Azerbaijan, which is that for the most part environmental management has become a routine component of operations. Reinstatement of the pipeline has reached the stage where the process is now effectively maintenance checks and reacting as appropriate and this is being done. At the time of the IEC visit in 2009, the only remaining Schedule 20 commitment that had not been closed was the location of sampling ports on the diesel generator stacks, but this has been resolved with an MOC covering this situation in both Azerbaijan and Georgia that is acceptable to the IEC. The major issue of non-hazardous waste disposal was closed at the time of the 2009 IEC visit and compliant waste management has been observed to have been maintained in 2010.

The main unresolved operations issue is non-compliant NO_x emissions from PSG-1 and PSG-2. This issue is essentially identical to the situation in Azerbaijan and it is expected that an offset mechanism will be developed for the NO_x non-compliance. IEC expects that an offset program will be agreed to prior to the 2011 audit.

A major accomplishment in Georgia is the effective completion of all of the Kodiana Projects for secondary containment of oil from a potential pipeline rupture that could possibly affect the Borjomi area of Georgia. At the time of the visit the Emergency Drain Down Facility (EDDF) was fully operational and the six secondary containment dams were all operational with only minor landscaping and some electrical work still ongoing. This area is one of the most significant parts of Georgia in terms of environmental, economic, cultural and aesthetic considerations and the construction of these facilities represents the completion of the construction phase of the BTC Project in Georgia.

Turkey

In Turkey E&S performances continues to improve since operations began and it is evident that the remaining issues associated with construction legacy are nearly all resolved and management activities are dominantly operational. Botaş International Ltd (BIL), the designated operator of the Turkish section of the BTC pipeline, continues to properly implement maintenance and management procedures and repairs to ensure pipeline right-of-way (ROW) integrity in a proactive manner.

After receiving the ISO 14001 certification in May 2008, BIL continues to implement procedures in the BIL Information Management System (BIMS) for tracking of

environmental performance. By the end of 2010 the system will be supplemented by the ECO-CARD tool, currently under a trial phase, to collate all the findings, the observations and recommendations coming from the field. Despite the achievement of ISO 14001 certification, the BIL HSE and Community Relations (CR) organization still has staff shortages with no back-to-back capacity at PT1, PT3, and PT4. Information provided to the IEC indicates that this situation does impact the continuity of community relations and the management of community issues such that many unresolved complaints are still reported. It is also understood that current resources available to manage community relations are not sufficient and this limits the coverage achievable by the PCREs with community meetings focused only around AGIs. Accordingly, the IEC maintains the Level 1 non-compliance, until this situation is resolved.

Significant progress to close all access roads construction legacy pending issues were made by BTC and BIL. As of July 2010, BTC informed that among 20 open access road issues, 19 are now closed. The Access Road Register has now been finalized and fully handed over to BIL.

Construction of permanent CWAA's at Pump Stations has not progressed in the field since the June 2009 audit, but a scope of work for the construction of new CWAAs at the pump stations has been developed, although a date for final implementation is not yet available. Materials from the construction phase, including unused hazardous chemicals and construction material from Botaş were still noted throughout PT1 and PT3. From what was reported in the field, IEC understands that BIL has recently reached an agreement with BOTAŞ for inventorying/disposing/recycling construction phase materials and wastes. This agreement will hopefully end one of the last remaining issues associated with the construction phase.

As of July 2010 a process of enhancing the performances of the WWTPs at fixed facilities has started and an upgrade program is in place with new WWTPs units installed at PT1 and PT3. Oil water separator (OWS) performance at fixed facilities is still an open issue, but problems associated with the OWS malfunctioning have been identified through a third-party review of OWS performance across all fixed facilities and a site-specific action plan has been developed to address this long-standing problem.

1 INTRODUCTION

D'Appolonia S.p.A.(D'Appolonia), located in Genoa, Italy, has served since the first field trip in February 2004 as the post-financial close Independent Environmental Consultant (IEC)[1] to the Lender Groups for the Baku-Tbilisi-Ceyhan (BTC) Pipeline Project (BTC Project).[2] The BTC Project is owned by BTC, a company formed by a consortium of the Main Export Pipeline Participants (MEPs)[3]. The BTC Project is constructed through Azerbaijan, Georgia and Turkey and the first shipment of oil from the BTC pipeline took place at the Ceyhan Terminal in Turkey on June 5, 2006, after which the transition to Operations was completed. The BTC pipeline currently carries Azeri-Chirag-Gunashli (ACG) oil and Shah Deniz condensate from Azerbaijan the BTC Pipeline also transports some crude oil from the North Caspian, specifically from the Tengiz field in Kazakhstan, which began entering BTC in October 2008. Transportation of Kazakh oil via BTC continues in accordance with the Transportation Agreement between BTC Co and Tengizchevroil – the operator of the Tengiz field.

Current throughput of the pipeline is around 950,000 barrels per day (b/d), but the capacity of the BTC Pipeline is approximately 1.2 million b/d. The development of the new Chirag Oil Project (COP) is expected to increase oil production and recovery of an additional 360 million barrels of oil from the ACG field through a new offshore facility to be installed between Deepwater Gunashli and Chirag platforms by the end of 2013. The BTC Pipeline is expected to function at or near its capacity with the completion of the COP. Since shipments began up the beginning of July 2010, 1,205 tankers have been loaded at Ceyhan representing a total of about 950 million barrels of crude oil transported via BTC and sent to world markets.

The overall role of D'Appolonia within the BTC Project is to assess and report to the Lender Group on the compliance with the environmental and social provisions contained within the project Environmental and Social Action Plan (ESAP) and associated Management Plans and with HSE management systems. This report summarizes the results of D'Appolonia's twelfth field visit held July 12 – 22, 2010 for the BTC Project.

This IEC trip represents the fourth annual verification of BTC Operations focusing on the operations team and ongoing operations activities and represents a continuation of a

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1 IEC Team members: Giovanni Battista De Franchi (Team Coordinator), Marcello Iocca (Team Member), William J. Johnson (Team Member).

2 The Lender Group for the BTC Project (BTC Finance Parties) comprises the International Finance Corporation ("IFC"), the European Bank for Reconstruction and Development ("EBRD"), Compagnie Française d'Assurance pour le Commerce Extérieur ("COFACE"), Her Majesty's Secretary of State acting by the Export Credits Guarantee Department ("ECGD"), Euler Hermes Kreditversicherungs-AG ("Hermes"), Japan Bank for International Cooperation ("JBIC"), Nippon Export and Investment Insurance ("NEXI"), Overseas Private Investment Corporation ("OPIC"), Servizi Assicurativi del Commercio Estero ("SACE"), the Export-Import Bank of the United States ("US EXIM") and any other export credit agencies and commercial lenders and any other providers of debt financing or political risk insurance for the BTC Project, in their capacity as the providers of debt financing or political risk insurance for the BTC Project, including, for the avoidance of doubt, the Sponsor Senior Lenders.

3 Also termed the "BTC Sponsors", the BTC Co. shareholders are: BP (30.1%); AzBTC (25.00%); Chevron (8.90%); StatoilHydro (8.71%); TPAO (6.53%); ENI (5.00%); Total (5.00%), Itochu (3.40%); INPEX (2.50%), ConocoPhillips (2.50%) and Hess (2.36%).

monitoring process initiated during the construction phase. The reference documents for the Operations audits are the Operations ESAP and the relevant management plans. In addition to this aspect of the field visit, the IEC has also focused on commitments made by BTC as part of the terms of the Schedule 21 Completion Certificate signed by the IEC On October 8, 2007. As it was not realistic or practical to fully close all of the construction-related issues in a dynamic process prior to the issuance of Schedule 21, the IEC accepted that certain items not be closed as long as they have well-defined closure plans with associated closure schedules as agreed and defined in a meeting held in the D'Appolonia office in Genoa, Italy on September 20, 2007. Now that nearly three years have passed since the signing of Schedule 21, some construction related issues still remain, but activities associated with the Project are dominantly operational. This report reviews both residual construction issues and operations.

Most of the findings identified in this report have been based on field observations, and interactions with the individuals actually responsible for the field implementation of the ESAP. Social and community relations aspects have only been addressed based on documentation review and management interviews, but no field audits and potentially affected community meetings have been held. Up until 2010, these responsibilities have been assumed by the Social and Resettlement Action Plan (SRAP) Panel, as dictated by the ESAP, but the last SRAP audits were completed in 2009 and a decision needs to be made if the IEC will assume additional responsibilities for social monitoring in future audits. Similarly, the review of BTC oil spill response plans (OSRPs) and related issues is not included in the IEC scope of work as this forms part of the work scope of the OSRP expert (Polaris).

The IEC team conducted the visit as a single team for the first time since the initial audit in February 2004. Subsequent sections of this report provide the following:

- Section 2 presents the review of the Project in Azerbaijan;
- Section 3 presents the review of the Project in Georgia;
- Section 4 presents the review of the Project in Turkey;
- Appendix A presents the trip itinerary;
- Appendix B presents lists of non-compliances with the ESAP, with relevant observations and recommendations.

2 AZERBAIJAN

The BTC Project in Azerbaijan includes 443 km of pipeline extending from the first pump station (PSA1) in Sangachal Terminal, to the border with Georgia. The corridor followed by the pipeline is close to the existing Western Route Export Pipeline (WREP) and is also the corridor that is followed by the South Caucasus Pipeline (SCP), which transports gas from the Shah Deniz field to the Georgian/Turkish border in a separate, related project. The BTC Project in Azerbaijan includes several permanent Above Ground Installations (AGIs) including an Intermediate Pigging station (IPA1) near KP 125, and a second Pump Station (PSA2) near KP 245, as well as necessary block and check valves. PSA1 at the Sangachal Terminal is not within the scope of the BTC audit in Azerbaijan.

BP/AIOC First Oil in Azerbaijan was celebrated on May 25, 2005. The entire BTC pipeline became operational on June 5, 2006 with the first shipment from Ceyhan, Turkey. Approximately 10 million barrels of oil were required to fill the line. BTC is preparing to increase its capacity for throughput to 1.2 mmb/d with the injection of drag reducing agent (DRA). The injection of DRA was originally scheduled for December 2008, but as the pipeline is still within its design capacity its use has not been required.

This mission represents the third IEC visit fully associated with BTC Operations [although this is the fourth Operations audit, the first Operations audit was combined with the last Construction audit]. Nevertheless, many of the aspects of Operations still relate to completion of the pipeline (e.g., biorestoration) and programs started during construction and which have follow-up during Operations (e.g., erosion and sediment control monitoring along the ROW; ecological monitoring; cultural heritage), as well as topics common to either construction or Operations (waste management, wastewater treatment, and emissions monitoring). Two topics specific to Azerbaijan that were issues for the preparation of the Schedule 21 Completion Certificate and reviewed during this trip are the implementation a ROW access strategy to eliminate routine driving along the ROW and the management of the red-listed plant *Iris acutiloba*.

2.1 ENVIRONMENTAL AND SOCIAL MANAGEMENT ORGANIZATION AND RESOURCES

2.1.1 Resources and Organization - Observations

The BTC environmental and social management organization has undergone some significant changes over the past year as part of a restructuring of the Azerbaijan Strategic Performance Unit (AzSPU) whose current operational activities cover Azerbaijan, Georgia and Turkey. The existing scope of AzSPU ISO 14001 Certification (awarded May 2008 and renewed in November 2009) covers ACG operational sites, the Sangachal Terminal; the BTC Pipeline, the SCP Pipeline, the Western Route Export Pipeline (WREP), as well as the Serenja Hazardous Waste Management Facility, the Central Waste Accumulation Areas (SPS& Sangachal), the Logistics Base, and the Supsa Terminal. Environmental impacts from these operational activities are managed within the AzSPU Integrated HSSE Management System.

The organizational changes that have taken place were initiated in June 2010 as part of a program entitled "Going Live" whereby environmental, health & safety, and social groups

moved from being line focused organizations as part of AzSPU Operations to functional organizations organized under the new AzSPU Regulatory Compliance and Environment Organization of HSE - Engineering. For example, the environmental responsibilities for the BTC pipeline were previously covered by the Azerbaijan Export Pipelines Environment Team, which also had responsibilities for the SCP and WREP and reported to the Azerbaijan Operations Manager. Today, this same organization directly reports to the AzSPU Exports Environmental and Compliance Team, but supports Operations. Similar reorganization has also affected the Health and Safety and Social organizations. All of these organizations are completely nationalized with expats serving in some roles only in the overall management for AzSPU.

The single point of accountability for environmental management in Azerbaijan is the Environmental Team Leader, who with the new organization reports to Exports Compliance & Environmental Manager who is part of the new AzSPU Regulatory Compliance and Environment Organization of HSE-Engineering. The Team Leader in Azerbaijan works with an Exports Compliance Lead who also reports to the Exports Compliance & Environmental Manager. The team leader is also supported by six environmental advisors, four of them site-based on a back to back schedule. The social team is organized similarly through the Community and External Affairs group. Health & Safety (occupational health and safety) and Health (medical) teams report to the HSE-Engineering in Baku. All of the teams in Azerbaijan are comprised by nationals, except for the uppermost management of AzSPU.

2.1.2 Management of Change (MOC) - Observations

Since the June 2009 IEC trip, BTC has issued two new MOCs relevant to ESAP aspects for Azerbaijan, one covering the topic of the continued storage of medical waste and the other for continuing to use the existing emissions monitoring points in the diesel generator stacks. The continued storage of medical waste, while not a desirable situation, is not contrary to the ESAP and the IEC does not have any objections to this change. As the final solution is proposed to be incineration, it should be noted that stack emissions will have to be monitored and an emissions Monitoring Plan detailing emissions composition and criteria, applicable limits, ash and residue disposal will need to be developed. Assuming the facility will be operated by a third-party contractor, it is also expected that the Project will conduct periodic audits of the facility, which IEC understands is expected to be operational by Q3 2010.

The second environmental MOC for not modifying the sampling ports for the diesel generator stacks for both Azerbaijan and Georgia was issued for IEC review in June 2010 as a Class I change. This MOC is the most significant in that it is related to a situation where there was a commitment to modify the sampling ports as part of IEC signing the Schedule 21 Completion Certificate. This MOC documents that the existing sampling ports are anyway consistent with UK EPA guidance on stack emission monitoring and general good practice. IEC has reviewed the MOC, found it to be acceptable and considers the issue to be closed.

2.2 HEALTH AND SAFETY

2.2.1 Health and Safety – Observations

The BTC organization continues to place emphasis on properly managing the safety performance of the different parties involved during the Project development. A comprehensive Health and Safety (H&S) Management system is in place and dedicated H&S

Plans and Manuals are routinely followed. The activities performed by the H&S team are extensive and include the significant components of the most advanced safety management systems (training, monitoring, auditing, risk analysis, safety data collection and reporting, etc.). An extensive analysis of safety data and statistics is performed including incident analysis and evaluation of immediate and root causes.

Most of the workplace hazards that were associated with the construction phase are not significant during Operations, but there is one common denominator that has affected both phases of the Project: vehicular accidents. During 2010, the BP Operations in Azerbaijan associated with the Export Pipelines (BTC is not specifically singled out from the other three pipelines) reported two vehicular accidents, one of which was serious although there were no significant injuries. The SVAR (Severe Vehicle Accident Rate) for 2010 is 0.44, which is not considered acceptable and solutions including additional training of drivers for defensive driving are being considered. Other issues identified by the H&S team include driving during the period of Ramadan and coordinating emergency response with local fire brigades. The H&S team also conducted a "summer risk" evaluation for all of the export pipelines.

One of the main health issues identified in Azerbaijan during the construction phase was potable water. As this has not been a routine part of the IEC review during Operations, the potable water test data were solicited for review. Although there were some problems associated with the startup of Operations, primarily with the detection of total coliforms in water used for showers and hand washing, water supplies at PSA2, PSA2 Camp, and IPA1 have all tested clean since at least August 2008.

2.3 WASTE MANAGEMENT

2.3.1 Non-Hazardous and Hazardous Waste – Observations

Since December 2008 an EU-compliant non-hazardous waste landfill with a 54,000 m^3 capacity active cell has been operational at Sumgayit. To date, about 40% of this cell has been filled and it has a life expectancy of about two additional years. The site has space for two additional cells, future expansion will be needed. In the future it may prove practical to recycle this waste currently being landfilled if the proposed "waste-to-energy" plant in Balakhani proves to be a viable disposal option. This project is currently under development by the Government and expected to be commissioned by the end of 2011. Both of the two previous temporary waste disposal cells with a 48,000 m^3 capacity have been closed. Both have been capped with a gas collection system. Azerbaijan is now relatively advanced in terms of the potential for recycling as paper can now be recycled. At the time of the previous visit acceptable recycling facilities for plastics had been identified and were being used.

Hazardous waste management has not changed since the previous visits and waste continues to be consolidated and stored at the BP-owned ISO 14001 certified Hazardous Waste Management Facility (HWMF) in Serenja. Wastes are also consolidated at the Central Waste Accumulation Area (CWAA) at the Sangachal Terminal. As of July 2010, about 7 m^3 of BTC-related waste are currently being stored. BP has identified hazardous waste management solutions on the basis of a PSCM – SIWM (Procurement Supply Chain Management – Semi-Integrated Waste Management) procurement process. New contracts with three contractors have been established, but their proposed disposal solutions have not been implemented pending the auditing of these companies and the completion of the procurement process, anticipated to be complete by the end of 2010. As noted in Section

2.1.2, one of the solutions is expected to be incineration for medical waste, a process that will require emissions monitoring and careful auditing by the Project.

2.3.2 Wastewater Management - Observations

The new Rotating Biological Contactor (RBC) type sewage treatment units being constructed at PSA2, PSA2 Camp and IPA1 at the time of the 2009 visit are now operational. The discharge from the reed bed at IPA1 has been fully compliant with Project effluent standards, except for a few minor excursions of total coliforms. The reed bed at PSA-2 accepts treated discharge from PSA2, PSA2 Camp and the PSA2 retention pond. Discharge from this pond is similar to the IPA1 reed bed discharge in that test results demonstrate compliance with Project effluent discharge standards, except for occasional excursions of total coliforms.

Sludge from the sewage treatment continues to be disposed at the Sahil Municipal Treatment Facility. Disposal of sewage sludge at a municipal facility is not a non-compliance with ESAP commitments, but is also not considered to be best practice, because beneficial applications do exist for this material, including as fertilizer, fuel for incineration (after dewatering), gasification for gas recovery, or composting.

2.3.3 Wastewater Management – Recommendations

1. BTC should consider developing an alternative disposal technology for the sewage treatment sludge such that this material has a beneficial application. Alternatively, this material could be landfilled if it is dewatered and this would be preferable to disposal at a municipal treatment plant.

2.4 POLLUTION PREVENTION

2.4.1 Observations

As previously noted in reports since June 2006, one issue common to both Georgia and Azerbaijan is the effectiveness of main oil-water separators designed to clean up surface water from the pump stations and IPA1. In Azerbaijan, this situation is resolved. The improvements at IPA1 were already complete at the time of the June 2009 visit and similar works have now been completed at PSA2. An additional issue associated with improvements to the main oil-water separators is the lining of the retention ponds. At the time of the June 2009 visit PSA2 retention pond was the only pond with a complete concrete liner in both Azerbaijan and Georgia and the concern was that the lack of a liner could be a contaminant pathway where groundwater is shallow and without concrete it is very difficult to clean out bottom sludge. The IPA1 retention pond was lined at the end of 2009. As noted in Section 2.2.2, the wastewater treatment facilities that were constructed in association with the pollution prevention systems at PSA2 and IPA1 are also complete.

A potential weak link in the management of contaminated surface water is with the retention ponds. Although test results show compliant discharges to the reed beds at both PSA2 and IPA1 (most recent test results are for April 2009), the discharges from the OWSs into the retention ponds sometimes are non-compliant with wastewater discharge standards, in particular for oil and grease and total coliforms.

The BTC Environmental Team continues to conduct noise monitoring. In March 2010 the Environmental Noise Monitoring Procedure was revised to reflect additional monitoring points near block valves (not BTC related) and define that nighttime monitoring can be eliminated if daytime noise levels do not exceed the nighttime residential limit. The most recent monitoring results from November 2009 indicate general compliance with the Project noise standard with only minor exceedances of the nighttime standard recorded at three block stations, the largest exceedance being only 1.2 dB(A) above the standard of 45 dB(A) based on daytime measurements.

Stack emissions testing has continued at the MOL turbines at PSA2 with the last tests for which results are available conducted at two of the turbines in December 2009. Emissions testing was also conducted at the diesel generator stacks at both PSA2 and IPA1 in September – November 2009, as well at the PSA2 water bath heater in October 2009. A Schedule 20 commitment was that correct sampling ports at the diesel generator stacks would be installed in time for the first round of stack emissions monitoring within one year of start-up. This commitment has not been fulfilled, but an MOC to allow for the use of the existing ports has been prepared to the satisfaction of the IEC and this issue is considered closed, as further discussed in Section 2.1.2.

The monitoring results of all diesel generators (PSA-2 Generators A, B, C; IPA-1 Generators A, B) and Water Bath Heater indicate that the oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2) and particulate matter (PM) concentrations were below the limits specified for these plants in the ESAP. The monitoring results of the PSA-2 gas-powered MOL Turbines indicated that the NO_x concentrations continue to be higher than the 75 mg/m^3 limit specified in the ESAP. CO is above the limit of 600 mg/m^3 defined in the ESIA approved by the Ministry of Ecology and Natural Resources (MENR), but the ESAP does not define a limit for CO. BTC interpretation is that the Host Government Agreement (HGA), that defines the ESAP as the applicable standard for the Project, overrides the BTC Az ESIA standard and CO is therefore not an issue. As discussed in previous trip reports, the difficulty with the NO_x emissions is partially related to the fact that it has not been necessary to operate the MOL turbines at full capacity, but if the MOL turbines are driven at high loadings such that NO_x emissions are reduced to compliant levels, fuel must be consumed unnecessarily and CO_2 emissions are greatly increased. The Project interprets that there is no cost or environmental benefit to operate the MOL generators at high loadings and proposes that an offset mechanism be developed for the NO_x non-compliance. It was expected that an MOC would be finalized justifying a higher limit for NOx emissions based on comparison with EU regulations for the gas-driven MOL generators smaller than 50 MW, but this has not proved to be practical.

IEC recognizes that the issue of NO_x emissions is more of a procedural problem than an actual environmental hazard, given that ambient air measurements do not indicate a problem and PSA2 is located in an area with a relatively low population density. Nevertheless, because this is an issue that has been identified over several missions the non-compliance for the stack emissions monitoring has been upgraded to a *Level II Non-Compliance, Emissions Management Plan - BTC Operations – Azerbaijan & Georgia (Commitment ID 1024).* IEC expects that an offset program will be agreed to prior to the 2011 audit such that this non-compliance can be rescinded.

2.4.2 Pollution Prevention – Recommendations

1. Do not allow for the discharge of water from the retention ponds at PSA2 and IPA1 unless the water meets Project effluent discharge standards and do not assume that the reed beds will complete the treatment. Consider adding chlorine to the water in the retention ponds if total coliforms are an issue.
2. At noise monitoring locations where daytime measurements indicate that there could be slight nighttime exceedance of allowable noise levels, verify if this is actually the case with actual nighttime measurements and react accordingly.
3. Consider if the offset for NO_x emissions might be based on costs associated with the quantity of excess emissions.

2.5 ROW MANAGEMENT

2.5.1 Observations

Biorestoration monitoring has been conducted by BTC for the past four years in terms of percentage cover values and two years of species-diversity data, collected from 55 transects located along the length of the ROW (in areas with natural vegetation, not being farmed). Vegetation cover data indicates that over half of transects have equal or greater vegetation cover than adjacent, undisturbed areas within a margin of 10%. At the majority of transects (84%), the vegetation on the ROW has shown an increasing trend vegetation in cover over the four years of monitoring. Species diversity was not measured in 2010, but it is expected that there still are some large differences between habitats in the rate and scale of increase and species-commonality between the ROW and adjacent, undisturbed areas. Also, the vegetation recovery in the Gobustan region continues to be severely limited, where natural conditions are difficult and where erosion, vehicle traffic, and cattle have had a negative impact. It is apparent that the Project reacts appropriately to situations where erosion represents a significant hazard to reinstatement, if not the actual pipeline. The severe erosion observed at the Djeyrankechmez River crossing at KP 9 in 2009 was fully remediated at the time of the 2010 visit. Nevertheless, for a variety of factors, reinstatement in the Gobustan remains problematic. As a general observation, the IEC appreciates that the Project does not have control over activities currently taking place in the Gobustan Desert area, but cumulative effects from other activities, in particular the construction of a water pipeline not associated with the Project and increased recreational use of this area, in addition to the traditional agricultural activities in this area have deteriorated the land from what was first observed at the beginning of the BTC Project. In particular, the one risk to the reinstatement/maintenance program over which the Project continues to have limited influence is vehicular traffic.

Vehicular traffic continues to take place along about 20% of the ROW, and has caused damage in sensitive areas, including the Gobustan Desert area. This traffic relates primarily to requirements the Export Pipelines Protection Department (EPPD) of the Azeri Government, which requires that the ROW be accessible for security patrols. There appears to be little difference between the situations observed in 2009 versus what could be observed in 2010, but the Project has continued a dialogue with EPPD and there is some progress to report. 125 km of pipeline corridor has been identified for reinstatement based on EPPD patrol patterns and two sections (Shamkir: from KP 345.6 to KP 346.75 and Gobustan: KP 28.0 to KP31.3) have been reinstated by BTC. Social and security teams work with EPPD

and local community members to ensure no driving on the reinstated sections. The Project also reports that EPPD has stopped driving in some areas where they have routinely used vehicles and that they have set a goal of reducing driving on the ROW by 10% in 2010.. EPPD is reported to still be considering unmanned aerial (UAV) observation, which has the potential for eliminating driving on the ROW. Actual implementation of a UAV solution is pending the possibility that a factory to manufacture this equipment could be constructed in Azerbaijan and the Project reports their understanding that such a plan is now in place. Another issue affecting reinstatement associated with EPPD is with respect to the maintenance of flume pipes. After EPPD initially requested that 900 flume pipes be maintained, the Project entered into negotiations with the agreement to maintain 86 flumes. Four flume crossings were replaced with concrete bridges in 2009 by BTC. A recent field survey has concluded that a considerable number of flumes requested by EPPD are no longer in use and these will be removed. The Project plans to develop and implement a revised strategy during the remainder of 2010.

As noted in the 2009 IEC report, current activities undertaken by the Project are defined on the basis of an MOC related to access strategy from December 2008. As previously noted, the IEC did not concur with the classification of this MOC to be Class I and questioned the appropriateness of terminating BTC's leases along the 6 meter wide strip used for access by EPPD. Nevertheless, the IEC considers that any changes to the existing MOC should be a Project decision and not because it is a requirement from the IEC.

2.5.2 Recommendations

1. Continue to offer EPPD field personnel training in terms of their awareness of environmental sensitivities and continue to negotiate a surveillance solution such that the biorestoration of the ROW can be completed (ongoing recommendation).
2. Given that there is no clear likelihood that EPPD will entirely cease accessing the ROW in the near future, continue to monitor EPPD usage in detail. If it can be shown that EPPD access is decreasing, or at least not increasing, this could help demonstrate a certain degree of compliance with ESAP commitments (ongoing recommendation).

2.6 ECOLOGICAL MANAGEMENT

2.6.1 Observations

Regarding ecological management, there is only one issue remaining from the construction phase included as a Schedule 20 commitment, which is the management of the red-listed plant *Iris acutiloba*. Another detailed field survey was carried out in April–May 2010, consistent with the Schedule 21 Completion Certificate requirement of undertaking a comprehensive survey to prove or disprove the initial observations from May 2007 that species survival has been poor where transplanting has taken place.

The latest survey results indicate that the population of transplanted *Iris Acutiloba* continues to decline where replanted on or along the ROW. The best estimate from the new data is that the survival of this red listed species where transplanted is worse estimated a year ago (~10% survival for all translocated plants vs. ~19% reported in June 2008). On the ROW the 2010 survey identified only 671 live plants out of 24,000 originally planted (<3%). The Project currently has ongoing discussions with the Ministry of the Ecology and Natural Resources (MENR) to attempt a revegetation program on the basis of planting seeds. IEC considers that

this approach is worthwhile, but enough time has passed that it is clear that the time has arrived to undertake an offset program. The IEC will consider the Project to have a significant non-compliance with the ESAP and the commitments made as part of the conditions for the IEC to sign the Schedule 21 Completion Certificate if an offset program has not been initiated by the time of the 2011 IEC audit.

In addition to the *Iris acutiloba*, another red-listed species found along the BTC pipeline is the spur-thighed tortoise (Testudo graeca). This species is also found within the Gobustan Desert, but as these turtles are also found in the area of the Sangachal Terminal, a breeding and release program for this species has been managed outside of the BTC project from the Sangachal Terminal. 225 tortoises were released to the environment in the Gobustan Desert area between 2007 and 2009. The remaining 47 tortoises (considered too young to be released in 2009) have been recently released, with a small number of females retained at the Terminal for educational purposes.

2.6.2 Recommendations

1. IEC recommends that any offset associated with the *Iris acutiloba* have also to be linked to the Gobustan desert, although this is not an absolute requirement. This recommendation is based on our observations of the deterioration of the Gobustan Desert from cumulative effects of activities not associated with the Project and it is our impression that this area needs more care than it is currently receiving. BTC is also encouraged to continue to develop procedures in consultation with the MENR to reinstate this red-listed species.

2.7 CULTURAL HERITAGE MANAGEMENT

The cultural heritage program for the BTC project currently relates to the management of cultural heritage material encountered during construction, as well as management of situations that could occur along the pipeline route in the future. Operations have not faced any issues related to damage to cultural heritage due to new construction or third-party damage to identified sites. The main activities have been associated with the management of archaeological materials identified during the construction phase of the BTC and SCP Projects. This effort is undertaken by AzSPU's Communication and External Affairs (CEA) department based in Baku for both Azerbaijan and Georgia.

2.7.1 Observations

As noted in the June 2009 IEC trip report, a major development took place on March 17, 2008, when BP on behalf of both the BTC and SCP projects signed a grant agreement with the Smithsonian Institution. The program had two main goals - public outreach and capacity building, targeted for the Gobustan State Historical-Artistic Reserve (GSHAP), the Azerbaijan Institute of Archaeology and the Ethnography (AIAE) and the Georgian National Museum. The total value of this program is just over $1 million and its duration is two years. Current activities have focused on capacity building as represented by a cultural heritage training program that took place in April 2010.

The training sessions were led by a group of international experts including scientists from the Smithsonian Institution, the Arizona University and the National Museum in Berlin. Participants in the event included approximately 43 representatives of the Gobustan State Historical-Artistic Reserve, Azerbaijan Institute of Archaeology and the Georgian National

Museum. The training focused on a range of topics covering assessment methodologies, collection and conservation techniques. The training was preceded by a two-day workshop aimed at providing an opportunity for the experts involved in the BTC/SCP archaeological research programs to analyze and interpret the BTC/SCP findings in a manner consistent with the international practice.

Activities still underway include:

- Publication of 1000 copies of a catalogue on the cultural heritage program and on the artifacts discovered in the three countries (Azerbaijan, Georgia and Turkey) along the BTC/SCP route. The catalogue will be published in four languages: Azeri, Georgian, Turkish and English; and
- Creation of a dedicated website that will describe the BTC/SCP Cultural Heritage Program and introduce the artifacts discovered in the three countries along the BTC/SCP pipelines in an interactive way which will be accessible to the broad public.

All of the above project activities have been previously recommended by the IEC.

2.8 ENVIRONMENTAL INVESTMENT PROGRAMME

The Environmental Investment Programme (EIP) associated with the BTC Project is effectively complete. New programs are being developed by the Communication and External Affairs Department within AzSPU and represent the overall commitment of BP in Azerbaijan for environmental investment. These were not reported to IEC during this visit.

2.9 SOCIAL MANAGEMENT

In this IEC monitoring visit and all previous visits, BTC Project related social and community relations aspects have been addressed based on documentation review and management interviews only, no field audits and community meetings have been held. External review responsibilities in relation to social and community issues, including land acquisition and compensation matters related to the BTC Resettlement Action Plan, have been carried out by the Social and Resettlement Action Plan (SRAP) Panel, as dictated by the ESAP. RAP completion audits were ongoing through late 2009 and closure of any outstanding issues was continuing between BTC and the SRAP panel at the time of this IEC visit. BP has established an independent advisory group to evaluate community and social issues in Azerbaijan. This organization, the Azerbaijan Social Review Commission (ASRC), created in early 2007, is an advisory group set up as continuation of efforts to promote transparency, dialogue and public engagement of BP activities in Azerbaijan. The commission acts as an independent advisory body to the leadership of BP Azerbaijan, focusing on social performance BP is undertaking on behalf of its co-venturers. It includes five Azerbaijani experts and four international members who come from Australia, the U.S. and U.K. .It is expected that the Lenders will determine if this new organization satisfies their requirements for the independent social monitoring of the Project.

Starting from September 1, 2006 until to date the Project registered 144 written complaints in the Operations Grievance Log, 40 of which were inherited from the construction phase. There were 19 verbal complaints registered, which have been resolved on site by Community Liaison Officers. All the complaints related to the Project footprint were closed by April 2010. Since April 2010 there has been only one registered complaint in Azerbaijan. The complaint, from a farmer, was related to agricultural growth potential due to land

reinstatement activities and had been resolved satisfactorily through further land reinstatement immediately prior to the IEC visit. At the time of the IEC visit there were no registered complaints related to the BTC Project in Azerbaijan.

2.10 COMMUNITY DEVELOPMENT INITIATIVE

Community development initiatives (CDI) are also part of BP's commitment to sustainable development in Azerbaijan. These programs are no longer specific to the BTC Project, but represent the overall commitment of BP in Azerbaijan and are managed through the AzSPU CEA department. Projects supported in communities along BTC pipeline in Azerbaijan has focused primarily on income generation and the expansion of economic opportunities. In 2009, BP and its co-venturers spent over $3 million to SDI in Azerbaijan.

3 GEORGIA

The BTC Project in Georgia encompasses 249 km of pipeline extending from Azerbaijan-Georgia border in the Gardabani District and finishing in the Akhaltsikhe District at the Turkish border. The corridor followed by the pipeline is close to the existing Western Route Export Pipeline (WREP) for a short distance from the Georgia – Azerbaijan border until the BTC pipeline deviates towards Turkey at KP 19. The BTC pipeline also shares the same corridor with the SCP pipeline, which is a subsequent separate related project that transports gas from the Shah Deniz field offshore Azerbaijan to the Georgian/Turkish border. The BTC Project includes several permanent Above Ground Installations (AGIs) including two pump stations, PSG-1 located at KP 3.8 and PSG-2 located at KP 88, as well as block and check valves.

The Georgian section of the BTC pipe was inaugurated in October 2005 and the entire BTC pipeline became operational on June 5, 2006 with the first shipment from Ceyhan, Turkey. Approximately 10 million barrels of oil were required to fill the line. BTC is preparing to increase its capacity for throughput to 1.2 mmb/d with the injection of drag reducing agent (DRA). The injection of DRA was originally scheduled for December 2008, but as the pipeline is still within its design capacity its use has not been required. Georgia began receiving the benefits of off take gas from the SCP Project in January 2007.

This mission represents the third IEC visit fully associated with BTC Operations [Although this is the fourth Operations audit, the first Operations audit was combined with the last Construction audit]. Nevertheless, many of the aspects of Operations still relate to completion of the pipeline (e.g., biorestoration) and programs started during construction and which have follow-up during Operations (e.g., erosion and sediment control monitoring along the ROW; ecological monitoring; cultural heritage), as well as topics common to either construction or Operations (waste management, wastewater treatment, and emissions monitoring). Georgia is also the only country traversed by the BTC Pipeline where First Oil did not represent the end of the construction phase, as active construction as represented by the Kodiana Projects related to secondary containment of oil spills in the sensitive Borjomi area continued up until the time of this visit. The single remaining topic specific to Georgia that was an issue for the preparation of the Schedule 21 Completion Certificate and reviewed during this trip was stack emissions monitoring.

3.1 ENVIRONMENTAL AND SOCIAL MANAGEMENT ORGANIZATION AND RESOURCES

3.1.1 Resources and Organization - Observations

The BTC environmental and social management organization has undergone some significant changes over the past year as part of a restructuring of the Azerbaijan Strategic Performance Unit (AzSPU) whose current operational activities cover both Azerbaijan, Georgia and Turkey. The existing scope of AzSPU ISO 14001 Certification (awarded May 2008) covers ACG operational sites, the Sangachal Terminal; the BTP Pipeline, the SCP Pipeline, the Northern Route Export Pipeline (NREP); and the Western Route Export Pipeline (WREP). Environmental impacts from these operational activities are managed within the AzSPU Integrated HSSE Management System.

The organizational changes that have taken place were initiated in June 2010 as part of a program entitled "Going Live" whereby the environmental and health & safety groups moved from being line focused organizations as part of AzSPU Operations to functional organizations organized under the new AzSPU Regulatory Compliance and Environment Organization of HSE and Engineering. For example, the environmental responsibilities for the BTC pipeline were previously covered by the Georgia Export Pipelines Environment Team, which also had responsibilities for the SCP and WREP and reported to the Georgia Operations Manager. Today, this same organization directly reports through AzSPU Exports Environmental and Compliance function, but supports Operations. Similar reorganization has also affected the Health and Safety organizations. The organization for the social group has effectively stayed the same as before under the responsibility of the country manager, now named as the AOM (Are Operations Manager) since June 2010. All of these organizations are completely nationalized with expats serving in some roles only in the overall management for AzSPU.

The single point of accountability for environmental management in Georgia is the Georgia Exports Compliance & Environmental Team Leader, who with the new organization reports to Exports Compliance & Environmental Manager who is part of the new AzSPU Regulatory Compliance and Environment Organization of HSE-Engineering in Baku, Azerbaijan. The Team Leader in Georgia is supported by teams covering emissions management; ecological management and EIPs; ESMS implementation and compliance; waste management; remediation management; and the Operations Projects, including Kodiana. The social team is organized similarly, with the Social Responsibility Manager reporting to an in-country Community and External Affairs Manager and supported by staff covering cultural heritage, community investment, energy and enterprise, and a social team leader with support from a group of community liaison officers. Health, Safety (occupational/medical health and safety) and Emergency Response (HS&ER) teams report to HSE and Engineering in Baku. All of the teams in Georgia are comprised by nationals.

3.1.2 Management of Change - Observations

Since the June 2009 IEC trip, BTC has issued three new MOCs for Georgia, one covering the removal of heavy metals from spectrum of parameters to be analyzed from reed bed effluent; one related to the frequency and timing of the effluent discharge where discharge is continuous or close to continuous; and continuing to use the existing emissions monitoring points in the diesel generator stacks.

The first MOC requests that heavy metals be taken off of the list of parameters required for effluent testing from the reed beds. Heavy metals have not been problematic in the past and there is no source that would introduce such contaminants into the effluent stream. IEC considers that this change is acceptable.

The second environmental MOC relates to the ESAP Emissions Management Plan, which requires sampling and analysis of effluent to be completed prior to discharge being made. As discharge from the reed beds is continuous and discharge from the retention pond is semi-continuous during the rainy season, the Project proposes to monitor effluent discharge from retention ponds and reed beds on monthly and quarterly basis (in accordance with the requirements for different parameters) regardless of number of discharges. The exception would be dry summer season and winter freeze for retention ponds. The IEC considers this MOC to be acceptable, but cautions that care should be taken when discharging from the

retention pond if there is visible evidence of contamination or if test results indicate contamination to be present in the OWS discharge (see also discussion in Section 3.5.2).

The last environmental MOC is for not modifying the sampling ports for the diesel generator stacks for both Azerbaijan and Georgia was issued for IEC review in June 2010 as a Class I change. This MOC is the most significant in that it relates to a situation where there was a commitment to modify the sampling ports as part of IEC signing the Schedule 21 Completion Certificate. The MOC documents that the existing sampling ports are consistent with UK EPA guidance on stack emission monitoring and general good practice. IEC has reviewed and accepted the MOC and considers the issue to be closed.

3.2 HEALTH AND SAFETY

3.2.1 Health and Safety – Observations

The BTC organization continues to place emphasis on properly managing the safety performance of the different parties involved during the Project development. A comprehensive Health and Safety (H&S) Management system is in place and dedicated H&S Plans and Manuals are routinely followed. The activities performed by the H&S team are extensive and include the significant components of the most advanced safety management systems (training, monitoring, auditing, risk analysis, safety data collection and reporting, etc.). An extensive analysis of safety data and statistics is performed including incident analysis and evaluation of immediate and root causes.

Most of the workplace hazards that were associated with the construction phase are not significant during Operations, but there is one common denominator that has affected both phases of the Project: vehicular accidents. During 2010, the BP Operations in Georgia associated with the Export Pipelines (BTC is not specifically singled out from the SCP pipeline) reported three vehicular accidents, all of which occurred in Q2 2010 and involved third-party collisions with BP-owned land cruisers. None of the accidents were serious. The importance of defensive driving is being emphasized with the drivers. The other significant issue identified by the H&S team and emphasized to the workers is with respect to equipment/property accidents, of which eight have been recorded in the first half of 2010.

Although not a part of IEC auditing since the end of construction, the potable water test data were solicited for review. Testing of potable water from PSG1 based on internal lab testing indicates several excursions in terms of total coliforms in 2010. This is normally a significant non-compliance, as potable water supplies for showers, faucets, etc. need to be as clean as bottled water. The problem might be with the laboratory testing in this case, however, as test results from sewage are much higher than equivalent test results from an independent laboratory (see discussion in Section 3.4.2).

3.3 CAMPS, INFRASTRUCTURE AND SERVICES

With the completion of the Kodiana projects, the construction phase of the BTC Project in Georgia is complete. Most of the temporary facilities associated with construction described in previous IEC reports are now closed, reinstated to the satisfaction of the landowners and relinquished to the landowners, unless their use has been required by Operations. The eventual fate of these facilities also depends on whether or not a new pipeline project is

initiated to follow the BTC/SCP corridor. The current status of the temporary construction facilities, based on the information provided by BTC, is as follows:

- *PSG1 Camp* – still in place and has changed status to a permanent facility to accommodate the construction of an Oil Spill Response base for the eastern most section of the BTC pipeline and of Maintenance Workshop;
- *Marneuli Camp* – handed back to the owner and reinstated except for about 10% of area (where some container is still stored);
- *PSG2 Camp* – still in place and servicing Operations;
- *Akhaltsikhe Camp* – still in place and providing accommodation services to Area 80 and the western section of the pipeline corridor. The permanent camp in at Area 80 whose construction is nearly complete will allow for the Akhaltsikhe camp to be demobilized, the land reinstated and handed back to the landowners, unless the land is needed for a new pipeline;
- *Rustavi (Gatchiani) Pipeyard* – still in use as logistics base and pipe storage yard;
- *Andeziti Pipeyard / Bakuriani Mechanical Yard* – still in use - reinstatement expected to be completed by the end of 2010.

The IEC visited reinstated sites associated with the Kodiana projects and found that the reinstatement has been to an acceptable quality (see additional details in Section 3.6.2).

3.4 WASTE MANAGEMENT

3.4.1 Non-Hazardous and Hazardous Waste – Observations

Non Hazardous Waste

The Project continues to operate the 2.6 ha BP Georgia EU-compliant non-hazardous waste landfill that started in May 2009. The facility has obtained a permit from the Georgia Ministry of the Environment to accept about 75 m^3 of asbestos waste, which is appropriate disposal for this waste. Additional monitoring wells have been installed around the perimeter such that there are a total of five wells to a depth of 15 meters and the damaged well observed last year has been replaced. The Project has continued to make improvements to their processing of waste at their Waste Recycling and Processing Center. Plastic, glass and a small amount of paper are recycled. Food waste is now being composted after maceration and drying with a fully contained composter imported from the UK that has produced approximately 3 m^3 in six months of processing. The compost is not being tested, as it will be used internally for BP Georgia's own gardens.

The use of non-compliant municipal waste disposal facilities during the construction phase of the Project resulted in BP-Georgia agreeing to sponsor an offset, which is the development of Georgia's first EU-compliant non-hazardous waste disposal facility for the cities of Rustavi and Gardabani that is expected to include the closure of the existing Gardabani dump. BP Georgia's support has been the preparation of the design of the facility, the landfill site selection studies, and preparation of an EIA including a public information and consultation process according to national, BP and EU requirements. This facility will be larger than the BP landfill and will cover 7.4 ha. Groundbreaking for this project has not started, but IEC was informed that the process to develop this facility is still underway.

Hazardous Waste

The final solution for the disposal of hazardous waste stored at the Central Waste Accumulation Area (CWAA) at PSG-1 continues to be based on international export and final disposal in EU-compliant facilities. Used oil generated continues to be injected into the BTC pipeline on an as-needed basis.

During the mission the CWAA was visited, and the facility is being managed acceptably. Three new roofed areas were observed and drainage is designed for any spill containment. A hazardous waste compactor reduces the volume of waste that is shipped overseas for final disposal. Plans are to acquire a crusher for fluorescent bulbs such that mercury can be recovered.

3.4.2 Wastewater Treatment – Observations

Wastewater treatment infrastructure continues to improve. Wastewater is not disposed in municipal facilities, unless there is a failure of BTC project waste water treatment facilities, which has not happened recently. A visit was made to the Akhaltsikhe Camp where the construction-phase wastewater treatment plant (WWTP) is still functional and compliant with Project standards (only minor excursions of total coliforms) with tertiary treatment provided by a mature reed bed. This plant also takes sewage from Area 80 associated with the SCP Project and will continue to do so until a new rotating biological contactor (RBC) unit is constructed at Area 80. This plant also sometimes accepts sewage from Bakuriani and Borjomi OSR base.

At the time of the June 2009 visit a new wastewater treatment plant at PSG2 Camp had been constructed with an RBC unit that uses the existing treatment plant for pre-treatment. This unit is generally compliant with Project effluent standards, except for occasional excursions of total coliforms. The new PSG2 RBC unit is also operational and is generally compliant with Project effluent standards, again except for total coliforms where large exceedances have been measured, probably associated due to the long start-up time required for proper operations of this kind of plants. The tests from the PSG-2 reed beds show compliance with Project effluent standards, including for total coliforms, so the RBC units are not contaminating the environment. The plan is still to decommission the PSG2 Camp unit and send it to PSG1 Camp by the end of the year. The new unit will then accept wastewater from both the PSG1 Camp and PSG1, where the sewage will be piped to the PSG1 Camp RBC unit from PSG1. Currently the PSG1 Camp WWTP takes sewage trucked from PSG1. A decision has not been made as to what to do with the existing unit, which has been generally compliant with standards, except for minor excursions of total coliforms, but is more difficult to operate and maintain than the RBC units.

Test results from the on-site laboratory (Intertek) at PSG1 and PSG2 consistently show high total coliform values from the reed bed discharge, contrary to monthly test results from the independent laboratory CITO2 Ltd. The Project has undertaken a third-party review by Oil Plus whereby the conclusion was reached that the external testing is more accurate.

A single test result from the EDDF RBC unit was provided for the month of June 2010 from the independent laboratory CITO2 Ltd that showed a large exceedance of total coliforms (160,000 MPN index in 100 ml when the standard is 400). This unit was compliant with other standards, but close to the exceedance values for COD and total suspended solids. The Project did not provide information regarding how this situation is being managed.

The spent sewage sludge from the PSG1 and PSG2 facility treatment plants continue to be sent to the Gardabani municipal plant for final disposal. Disposal of sewage sludge at a municipal facility is not a non-compliance with ESAP commitments, but is also not considered to be best practice, because beneficial applications do exist for this material, including as fertilizer, fuel for incineration (after dewatering), gasification for gas recovery, or composting.

3.4.3 Non-Hazardous and Hazardous Waste - Recommendations

1. Although much of the hazardous waste stored at the PSG1 CWAA is under roof, the central storage area containing drummed waste does not have a roof. It is recommended that all of the hazardous waste be stored under cover to prevent the need for treating contaminated water.
2. Make changes to the on-site bacteriological testing such that the test results can be considered to be reliable at both PSG1 and PSG2. These test results are apparently being ignored for both sewage and potable water management, or else we would expect to see significant corrective actions. There is little point conducting these tests if the results are not considered reliable.
3. Review the operation of the RBC treatment plant at the EDDF for its compliance with Project standards; the IEC prefers not to assign a non-compliance on the basis of a single test result, but the performance of this unit will be carefully reviewed during the next mission.
4. BTC should consider developing an alternative disposal technology for the sewage treatment sludge such that this material has a beneficial application (repeat recommendation).

3.5 POLLUTION PREVENTION

3.5.1 Observations

As previously noted in previous IEC trip reports since 2006, one issue common to both Georgia and Azerbaijan is the effectiveness of the main oil-water separators designed to clean up surface water from the pump stations. This situation is not a non-compliance with ESAP commitments, but their performance could potentially be compromised under emergency loadings. Improvements to the OWS system were expected to be resolved by the end of 2009, but there is still work to be done. The retention ponds at PSG1 and PSG2 still need to be lined with concrete, but this work has been contracted and the work expected to be completed in September 2010. Additional proposed modifications at PSG1 and PSG2 provide for sampling points and a method to recycle effluent through the OWS system for re-processing. Pumps have been upgraded, but oil-in-water analyzer modifications still have yet to be completed. These are expected to be completed in September 2010. Again, this situation is not a non-compliance, but these modifications have been very late in being implemented, as there could be a problem if there were a real emergency.

A separate issue associated with the retention ponds at both PSG1 and PSG2 has been the quality of the discharge water, where the independent testing laboratory CITO2 has found high total coliform values. It is understood that high coliform discharges to the environment (due to the high ambient temperature, usually occurring during the summer) have resulted

from the inability of the Project to clean the bottom of the ponds pending the construction of the concrete liner. Although it was reported that concreting of the pond will commence soon and it is expected that this problem will be resolved by September 2010, the current situation represents a non compliance: *Level I Non-Compliance, BTC Operations, E&S Management Plan, Emissions Management Azerbaijan and Georgia*, for liquid effluent (open water discharge) exceeding Project standard for total coliforms.

The BTC Environmental Team continues to conduct noise monitoring. The most recent monitoring results from April 2010 indicate general compliance with the Project noise standard except at the nearest residential receptor to the generator at Akhaltsikhe Camp, where an average of 53.2 dB(A) was recorded, which is significantly above the nighttime standard of 45 dB(A). Slight exceedances were also recorded at the nearest residential receptors to PSG1 Camp [47.1 dB(A)] and to PSG2 Camp [46.3 db(A)]. All of these readings were made during daytime hours, so it is not certain if nighttime levels have actually been exceeded.

Stack emissions testing has continued at the MOL turbines at PSG1 and PSG2, along with the diesel generator stacks, the water bath heaters (WBHs) and the crude topping units (CTUs) with the last tests conducted between December 2009 and February and April 2010. All required stack emissions monitoring has been carried out. A Schedule 20 commitment was that correct sampling ports at the diesel generator stacks would be installed in time for the first round of stack emissions monitoring within one year of start-up. This commitment has not been fulfilled, but an MOC to allow for the use of the existing ports has been prepared to the satisfaction of the IEC and this issue is considered closed, as further discussed in Section 3.1.2.

The monitoring results of all diesel generators, CTUs and WBHs at both PSG1 and PSG2 indicate that the oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2) and particulate matter (PM) concentrations were below the limits specified for these plants in the ESAP. The monitoring results of the PSG-2 MOL Turbines indicated that the NO_x concentrations continue to be higher than the 75 mg/m^3 limit specified in the ESAP with values ranging between 108 and 125 mg/m^3. There is no Project standard defined for CO in Georgia, either in the ESIA or the ESAP, The Project reports that in June 2010 the Georgian MOE adopted emissions standards for NO_x, SO_2, and CO and that the MOL emissions are compliant with these standards, but this information was not provided to the IEC. As is also discussed for the situation in Azerbaijan and in previous reports, the difficulty with the NO_x emissions is partially related to the fact that it has not been necessary to operate the MOL turbines at full capacity, but if the MOL turbines are driven at high loadings such that NO_x emissions are reduced to compliant levels, fuel must be consumed unnecessarily and CO_2 emissions are greatly increased. The Project interprets that there is no cost or environmental benefit to operate the MOL generators at high loadings and proposes that an offset mechanism be developed for the NO_x non-compliance. It was expected that an MOC would be finalized justifying a higher limit for NOx emissions based on comparison with EU regulations for the gas-driven MOL generators smaller than 50 MW, but this has not proved to be practical.

IEC recognizes that the issue of NO_x emissions is more of a procedural problem than an actual environmental hazard, given that ambient air measurements do not indicate a problem and PSG1 and PSG2 are both located in an area with a relatively low population density. Nevertheless, because this is an issue that has been identified over several missions the non-compliance for the stack emissions monitoring has been upgraded to a *Level II Non-*

Compliance, Emissions Management Plan - BTC Operations – Azerbaijan & Georgia (Commitment ID 1024). IEC expects that an offset program will be agreed to prior to the 2011 audit such that this non-compliance can be rescinded. The Project should consider that this situation in Azerbaijan and Georgia constitutes a single non-compliance.

3.5.2 Pollution Prevention – Recommendations

1. Do not allow for the discharge of water from the retention ponds at PSG1 and PSG2 unless the water meets Project effluent discharge standards. Speed up the ongoing upgrade project to avoid discharging into the environment. Install a valve on the connecting line between the oil/water separator and the retention pond to prevent accidental contamination of the pond. Consider adding chlorine to the water in the retention ponds if total coliforms are an issue.
2. Conduct noise measurements at the nearest residential receptors to determine if the nighttime standard of 45 dB(A) is actually been exceeded.
3. Consider if the offset for NO_x emissions might be based on costs associated with the quantity of excess emissions.

3.6 ROW MANAGEMENT

3.6.1 ROW Reinstatement - Observations

ROW reinstatement was reviewed in the field at the difficult reinstatement areas from the Kodiana Pass at KP 193 (El 2,263 m) to the Tskhratskaro Pass at KP 176 (El 2,456 m) and various sections of the ROW in the vicinity of PSG1 (~KP 4). A fundamental observation is that the erosion and sediment control efforts appear to have been generally successful over the past winter season. A significant landslip was observed to be present at KP 176, but the slope movement did not affect the pipeline ROW. In general, reinstatement of the pipeline has reached the stage where the process is now effectively maintenance checks and reacting as appropriate and this is being done.

Satellite data processing is used to generate the Normalized Difference Vegetation Index (NDVI), which is calibrated by field checks. This has formed the basis for the Project to evaluate the success of its biorestoration program and to identify areas that may still require special attention. Overall, progression in the ratio of vegetation coverage in and off the ROW has occurred in 92.8% of the 100 m ROW sections since 2007. This contrasts with the observation that habitats with 0-10% vegetation coverage has nearly doubled since 2007 (8.5 – 16 Ha). Although the total area with low vegetation cover has increased since 2007, the total area of the ROW sections with vegetation coverage of in the 90-100% range has tripled since 2007 (4 – 12 Ha).

Biorestoration of the pipeline is continuing with respect to the re-planting of high conservation value species. As reported in the 2009 IEC report 15 populations of 11 rare species that were originally translocated from the pipeline to the Bakuriani Alpine Botanical Garden (BABG) and the Tbilisi Department of Plant Conservation (TDPC) were being re-planted along the pipeline route in 2008. In May 2009, re-planting continued with a total of 928 plants reintroduced to suitable habitats in the Kodiana Project area, encompassing primarily marsh orchid, but also including squills, snowdrops, and a single individual of bog orchid. In December 2009 the success of this program was evaluated in a report prepared by

Dzelkva Ltd. The commitment to re-establish a minimum of 75% of the original population within the areas designated for translocation has been achieved in case of nine species out of eleven, but no individuals of Gentiana angulosa (two populations) and Orchis coriophora were recorded on the reintroduction sites. The reason for this apparent loss is being evaluated as it may be that the species may be in a lengthy dormant state.

Another component of the biorestoration process has been the planting of trees and shrubs, which took place in 2007 along forested portions bordering the ROW consistent with the planting scheme outlined in the Pipeline Reinstatement Specification-Georgia. As noted in previous IEC reports, this program has not been successful. Trees are currently being planted off of the ROW in forest clearings, but ROW plantings have been discontinued. Consistent with a previous IEC recommendation, the Project has entered discussions with the Georgia MoE for the development of an offset program to compensate for the loss of forest habitat.

Another component of biorestoration that continues to be monitored along the ROW is invasive species. Common Ragweed, *Ambrosia artemisiifolia*, native to North America is one of the species of greatest concern because of its highly allergenic pollen and its potential for causing severe yield loss in many crops and threatening biodiversity. Pilot studies including the use of different herbicides with brush cutting were undertaken by Dzelkva Ltd with a team of international experts in summer – fall 2009 to identify the best means to control this plant with results presented in a report by Dzelkva Ltd in December 2009. In parallel to this effort in August – September 2009 a weed management project consisting of brush cutting was implemented by Sanitary Ltd over 14 segments of the pipeline (~54 km) from KP 0 to KP 247 excluding the Kodiana area because of difficult terrain conditions and in agricultural areas. No weeds were detected in the Tsalka-Tabatskuri area so weed removal activities did not take place there.

3.6.2 Off-ROW Reinstatement – Observations

The only areas where off-ROW reinstatement was evaluated in the field were sites associated with the Kodiana Projects. Spoil disposal and topsoil storage areas were visited in the Andeziti village area, Tsikhisjvari village area and at the EDDF. These were found to be fully reinstated and in some cases returned to agricultural use, or otherwise not practical to identify in the field if their areas were not known in advance. The Tsikhisjvari Laydown and EDDF Staging areas are also fully reinstated. Laydown and Staging Areas at Secondary Containment Facilities: Tskhratskaro, Kumiska 1&2, Oshora 1&2 and Tori are in the process of being reinstated. The Khrtsisi borrow pit used for construction aggregate has not been reinstated, as it has returned to other commercial use. The Andeziti pipe yard is also still in use, but is planned for reinstatement by the end of 2010.

3.7 KODIANA PROJECTS IN THE BORJOMI AREA

3.7.1 Observations

The Borjomi Work Region extends from about KP 176 to KP 196. This area is one of the most significant parts of Georgia in terms of environmental, economic, cultural and aesthetic considerations. The area is part of the catchment of Borjomi Mineral Water, which is one of the most significant private developments in Georgia. Communities in this area are hopeful that tourism will be redeveloped and are concerned that the Project will adversely impact the landscape and their prospects for tourism.

The Kodiana area is where the Government of Georgia requested that BTC implement special protective measures with multiple lines of protection and redundancy in design and operations on the pipeline to achieve as close to "zero risk" of an oil spill or leak as practical. These measures include: temporary secondary containment, permanent secondary containment, a drain down tank, and construction of a security base for a patrolling security crew (the "Kodiana Project"). Critical issues that have been components of IEC and SRAP audits have included landscape alteration and aesthetics, potential impacts from altering the local hydrology, construction impacts taking also into account the presence of an archaeological site at one location, potential social consequences (especially from the stationing of about 200 soldiers at the security base), management issues during operation (e.g. waste management, pollution prevention requirements), access control (especially the Tori site location), ecology, and identification of relevant mitigation measures.

At the time of the October 2006 IEC mission, the construction for all of the Kodiana Projects was scheduled to be complete by October 2007. This proved to be a significant underestimation of the level of effort, but the IEC can now report that the Kodiana Projects are effectively complete. The Emergency Drain Down Facility (EDDF) was fully operational and the six secondary containment dams were all operational with only minor landscaping and some electrical work still ongoing. As noted in Section 3.6.2, areas where the Project had a footprint outside of the actual construction zones such as spoil disposal areas, topsoil storage areas, laydown and staging areas, etc. have been reinstated or are nearly reinstated. The construction of the Kodiana Projects is a major milestone for the BTC Project and also represents the final completion of the construction stage of the entire BTC Project in all three countries.

3.8 ECOLOGICAL MANAGEMENT

BTC Ecological Management Plan Commitment F16/D6 defines the Project's responsibility to "…*Promote and undertake a wildlife monitoring programme in forest areas and wetlands to promote the conservation of endangered species*…" The Project has fulfilled commitment F16/D6 through the development and implementation of a Biodiversity Monitoring Programme approved by the Government of Georgia in May 2004.

The Biodiversity Monitoring Programme consists of five years of monitoring selected floral and faunal species of concern, the first of which was conducted in 2004. The floral component of the Biodiversity Monitoring Programme focuses on four habitats (wetlands, forests, high mountain meadows, and *Rhododendron* scrub), as well as on individual species of high conservation value. For the faunal component, multi-taxa monitoring is conducted with emphasis on IUCN and Georgia Red-listed species that occur in the vicinity of the ROW (as determined by the ESIA and as confirmed by the pre-clearance surveys).

During the current visit to Georgia, the IEC did not specifically review the ecological management programs in the field, but was provided with the 2009 biodiversity monitoring reports for both floral and faunal components prepared by Dzelkva Ltd.

3.8.1 Biodiversity Monitoring

Faunal Monitoring

Amphibian Monitoring

Reproductive Syrian spadefoot toads (Pelodytes syriacus [IUCN Near Threatened and Georgia Red List]) continued in 2009 not to be identified at the monitoring sites at KP 11 and KP 40 or at two nearby control sites. In 2009 these areas where they were first identified prior to 2005 have been heavily impacted by anthropogenic pressures and cattle grazing not related to the pipeline such that the monitoring sites were either filled in with soil or cattle had turned the pond to soft clay. The Caucasian mud-diver (Pelodytes caucasicus) was removed from the faunal monitoring scope in 2008 based on the four-year monitoring results, as previously reported. IEC still expects that BTC will produce an MOC to justify this change.

Reptile Monitoring

Two species of concern were included for monitoring in 2008 – the European marsh turtle (*Emys orbicularis*), and the Caspian terrapin (*Mauremis caspica*). As reported in the 2009 IEC report, another target species - snake-eyed lizard (*Ophysops elegans*) was removed from the faunal component of the biodiversity monitoring program as no clear trend in the abundance of the lizards was identified throughout the study area in 2003-2007. IEC still expects that BTC will produce an MOC to justify this change.

Monitoring of the European marsh turtle (Emys orbicularis) and the Caspian terrapin (Mauremys caspica) took place in two monitoring locations and two "control" sites, one of the monitoring locations being the stream at KP 11 (also used for monitoring of the spadefoot toad). In 2009 turtle numbers were similar to those recorded in 2005. In total, two European marsh turtles and seven Caspian terrapins were recorded at the test and control sites. The six-year monitoring of the turtles suggests that the dynamics of the turtle population varies with annual fluctuations that dependent on the availability of water bodies and level of water suitable for the turtles and not on pipeline-related issues.

Avian Monitoring

The project's avian monitoring efforts continue to be extensive including the monitoring of wintering waterfowl, resident waterfowl, nesting populations, breeding pairs of corncrake and grey crane, and the Caucasian black grouse (*Tetrao mlokosiewiczi* [red listed under the category that is being uplisted from DD (Data Deficient) to NT (Near Threatened).]). The abundance and diversity of all of the monitored species has fluctuated throughout the observation period (2003-2009), suggesting that pipeline operations have not been the major factor in causing these fluctuations.

With respect to the Caucasian black grouse, grouse feces and feathers were found at all the three monitoring sites at Mt. Tavkvetili (KP 154-155), vicinity of the Tskhratskaro Pass (KP 177), and the Kodiana Pass (KP 191-192). Both feces and four live birds were recorded at Zekari Pass control site. Kodiana Pass together with the Zekari control site continue to demonstrate a stable grouse population, whereas the other two sites appear to have more transitory populations, but pipeline activities do not appear to have impacted this species after six years of monitoring.

Mammalian Monitoring

A number of bat species, Brandt's hamster (*Mesocricetus brandti*), and the common otter (*Lutra lutra* [IUCN Near Threatened]) were included for the mammalian monitoring effort. With respect to the forest bats, the objectives of monitoring in 2009 were to record the bat species diversity at the monitoring sites along the ROW and control area and to check whether the observed number of species recovers after the decline in 2004/2005, remains unchanged, or conversely, shows the continuing negative trend. In 2009 cold and rainy weather from May to September disrupted the normal distribution of bats throughout the country. Dramatic decline in both bat abundance and species diversity was observed almost everywhere below 1,000 m msl. After six years of monitoring, the basic observation is that climatic conditions have the greatest impact to bat species diversity and abundance. The Project did implement a Bat Mitigation Pilot Project with the result that three out of 47 shelters were inhabited by bats, which does not affect the overall interpretation, but was considered to be reasonably successful when compared to similar projects worldwide.

The six-year observations have shown that there is only one site within the pipeline impact zone where Brandt's hamster presence is stable, the Gardabani steppe. Hamster population has dramatically declined throughout the study area interpreted to be due to the unusually cold springs over the past three years, not due to the influence of the pipeline. Nevertheless, it must be recognized that a fairly large area within 400-500 m of the pipeline has not been recolonized by the hamster, so the influence of the pipeline cannot be ruled out.

In 2009 signs of otter presence continued to be recorded at two out of four monitoring sites, Based on observations over the past six years, periodical deserting of individual habitats does not appear to depend on the position of a site in relation to the ROW. It is more likely that presence of this mobile animal depends on the availability of food resources, mainly fish, and may winter and spend summer and autumn in different areas.

Aquatic Monitoring

Dragonflies and damselflies (two suborders within the order Odonata) continue to exclusively being used as indicator taxa. Despite the forecast that adverse climatic impacts of 2007 might have a delayed effect, unlike 2008, dragonfly abundance and species diversity slightly increased in 2009. It should be noted that situation is insubstantially better at control sites than monitoring plots though there are a number of exceptions.

Regarding the ichthyology component, monitoring was conducted during July-August of 2009 by joint team of LSG Applied Technologies LTD and the Institute of Zoology, Tbilisi. The watercourses crossed by BTC and SCP pipeline were assessed for in-stream water quality, macro-invertebrate communities and habitat. River quality continues to be variable with time.

Benthic Index of Biotic Integrity (IBI) analyses were started in 2008 and Fish Index of Biotic Integrity were started on a test basis. The IBI categorizations were all fair to good, except for Varukhaneletsori and Lazutnerotsori Streams (both ephemeral), which rated a poor IBI score.

As noted in previous IEC reports, the IEC encourages these studies, but notes that in the case of fish species it will probably be impractical to identify pipeline impact at this point in time. Provided that there are no abnormal incidents (e.g. oil spills), it is not expected that the pipeline will have any impact on fish populations, but the quantitative and qualitative data

gathered over the 2007-2009 period (monitoring ceased in 2009) should establish a baseline for future potential industrial footprint/s (if any).

Floral Monitoring

Based on IEC review of the Annual Biodiversity Monitoring Program – Floral Component for 2009 prepared by Dzelkva Ltd specialists and international experts, the floral biodiversity monitoring continues to represent a significant achievement of the Project. The overall goal of the Floral Component is to identify and quantify any off-ROW floral impacts of pipeline construction and operation, and recommend any remedial mitigation measures if required. Comprehensive quantitative and qualitative data has been collected in 143 permanent plots, of which 58 were established to monitor forest communities, 36 for wetlands, 32 for meadows, 2 for scrub and 15 for populations of species of high conservation value. In addition to above activities, a walkover survey was conducted along the ROW to identify the presence of populations of invasive/alien species which might expose threat to local biodiversity. As invasive species have tended to appear where vegetation was stripped along the ROW and the AGIs, the results of the biodiversity monitoring for invasive species is therefore discussed under the biorestoration program (Section 3.6.1).

In 2009, some significant changes to target high conservation plant populations continued to be recorded, but the reasons for distress to these plants continue to appear to be caused primarily by an intensification of grazing, especially in the area of the Kodiana pass (KP 190 – 192), as well as the result of natural dynamics of populations of herbaceous plants. Potentially more serious problems continue to be observed in the forest test plots, and tree felling in woodlands adjacent to the ROW is still a major threat to the integrity of forest ecosystems, especially in the Tsikhisjvari-Tiseli area (KP 187 – 204). The IEC team again observed induced access logging along the new access road to the Tori Secondary Containment site, but at a level substantially greater than 2009 based on the number of new secondary tracks off of the main road where there is evidence of tree cutting. In 2009, IEC was informed that the logging was being conducted with permits obtained from the Forestry Department of the Ministry of Environment and Natural Resources, but this year we were informed that some arrests had been made to individuals involved with illegal logging.

A positive note to the biodiversity monitoring is that the control plots for scrub plants, meadows, and wetlands have not exhibited measurable changes since last year, except for the disappearance of the invasive species Reed Canary-grass *Digraphis arundinacea* at one of the wetlands test plots.

The overall conclusion of floral monitoring after six years is that no obvious signs of impact related to the BTC/SCP pipeline construction are currently observable for the forest, meadows, rhododendron scrub or wetlands. The most significant potential impact is the spread of invasive species, which needs to be carefully monitored and controlled, as discussed in Section 3.6.1

In addition to the work conducted under the biodiversity monitoring program, a three year scope for high mountain wetland communities' botanical inventory/eco-compensation study was agreed with Georgian government in May 2007 and is now concluded with a report entitled Botanical Survey of South Georgian Wetlands prepared by Dzelkva Ltd dated December 2009. Field studies of 15 wetland sites were conducted carried out in June-September 2008 and July 2009 at the Javakheti Upland (South Georgia) directed towards identification of high conservation value wetland ecosystems as potential protected areas. In total, 29 different plant communities were distinguished in wetland habitats and six sites are

proposed for designation of protection status. This program appears to have been well-implemented.

3.8.2 Recommendation

1. It is the general observation by the IEC that biodiversity monitoring to determine the impacts of the pipeline may have reached a point of diminishing returns for the BTC Project. The only species where it appears that the pipeline may have had an impact seem to be to Brandt's hamster (*Mesocricetus brandti*) and it is recommended that hamster monitoring be continued to check whether hamster populations are able to recover within 400-500 m of the pipeline or, if their population continues to decline, develop some mitigation measures. IEC encourages that the other monitoring be maintained, but not as a means to determine pipeline impact, but as research that will benefit knowledge of the behavior of important species in Georgia. Such research could also serve as a means to establish a sound baseline in anticipation that at some point in time another pipeline might be constructed.

3.9 OFFSET MITIGATION AND ENVIRONMENTAL INVESTMENT PROGRAMS

During the mission, the IEC was updated on the status of the Offset Mitigation Measures and the Environmental Investment Programme (EIP) in Georgia. Some of the EIP projects committed in 2006/2007 have continued into the Operations phase, which makes Georgia different from Azerbaijan where EIP Projects no longer relate directly to the BTC Project, but are developed on the basis of BP's overall involvement in Azerbaijan. In Georgia, the BTC Project is still the basic development whereby EIP programs have been maintained.

The program entitled *Management Planning for Ktsia Tabatskuri Managed Reserve* is the single EIP project still remaining from the construction phase of the BTC Project and is being funded by both EIP funds and separate offset funds and implemented by IUCN – International Union for Conservation of Nature and Natural Resources. On May 1, 2009 BTC received approval for the scope of work undertaken for this program by the MoE with a request for funds for its implementation. Three Quarterly Reports for this project have now been issued and activities include the following:

- Activity 1. Graze management study;
- Activity 2. Census of migratory water birds, breeding wetland and upland birds;
- Activity 3. Administrative Infrastructure;
- Activity 4. Tourism Infrastructure;
- Activity 5. Education and communication materials;
- Activity 6. Project Management.

Another construction legacy associated with the Offset Mitigation is the Forest Eco-Compensation Program. This program representing environmental offset for the loss of forest habitat started during the construction phase of the BTC Project has been the subject of long-term negotiations with the Georgian MoE. In January 2010, the MoE signed an agreement for this program involving the contribution of $3.5 million in 2010 and 2011 towards the protection of the Sataplia State Reserve Infrastructure Development Project (SIDP). This agreement represents offset compensation that is quite different from the

reforestation projects originally contemplated for this offset, as it represents the protection of a Georgian tourist attraction famous for its significant geological, paleontological, speleological and botanical features, and even dinosaur footprints. Renovations are planned for the tourist cave and the dinosaur footprints will be preserved and protected. In addition, an exhibition and educational center will be built together with a conference hall.

New EIP projects undertaken strictly from BP Georgia Operations for both BTC and SCP Projects are under the umbrella of the Eco-Awards Program. $900,000 for three years (2008-2010) was established as the allocated budget and $300,000 started the program in December 2008. 2009 projects within the "Eco-Awards" program include:

- *Reviving the Meskhetian Wheat Tsiteli Doli through an Effective Marketing Chain* – implemented by the Biological Farming Association Elkana and involving the reduction of the negative impact of agriculture on the environment in the Samtskhe-Javakheti Region and preserving local agricultural biodiversity by introducing the sustainable use of endemic species;
- *Facilitating Stakeholder Participation in Protected Areas of Georgia* – implemented by IUCN Programme Office for the Southern Caucasus and involving the promotion of environmental protection in Georgia through facilitating stakeholder participation in Protected Territories;
- *Support to the cultivation and sale of economically important species of Adjara wild flora in the buffer zone of Mtirala National Park* – implemented by the Association for Environment Protection and Sustainable Development "MTA-BARI" and involving support to the cultivation and sale of economically important species of Adjara wild flora in the buffer zone of Mtirala National Park; and
- *Market-Oriented Sustainable Tourism Development in Protected Areas of Georgia* – implemented by the Georgian Tourism Association (GTA) and involving the facilitation of market-oriented, participatory sustainable tourism for the Lagodekhi, Algeti and Kintrishi Protected Areas in Georgia (Tusheti Protected Area added in 2010).

All of these projects except for the portion of the GTA award given in 2009 are projected to be complete prior to the middle of 2011. In 2010, the following new projects were awarded:

- *Installation of Solar Systems in the Territories of the Mtirala and Kintrishi Protected Areas* – project implemented by Ajara Sustainable Development Association;
- *Mitigation of Adverse Impacts of Predator Mollusk Rapan and "Ghost Fishing" on the Black Sea Ecosystem and the Associated Fishing Industry* – project implemented by Association Flora and Fauna and involving preservation of the marine environment and increase of income from fishing for local communities;
- *Ecologically Safe Pastures* – project implemented by Rural Advisory Service;
- Development of a Model of Reinstatement of Eroded Slopes in the Racha Upland Region – project implemented by Association "Zekari";
- *Ex-Situ Conservation and Commercial Use of Some Economically Important Species of Wild Flora Protected by CITES Convention* – project implemented by Wild Plant Conservation Association (WPCA).

These projects are expected to be completed in 2012.

3.10 COMMUNITY LIAISON

The Social Team of BP Georgia is responsible for communicating Project information to the general public and, specifically, the community in areas along the pipeline route, as well as receives and transmits community information regarding the BTC Project. The overall objective for the community liaison is to build a positive, non-dependent relationship between the BTC Project and the local communities. Specific responsibilities for community liaison include, but are not limited to:

- providing communities affected by the Project with regular information on the progress of construction (still ongoing in Kodiana area) and the implications for these communities and also informing the BTC Project of any community related issues that may impact on construction;
- monitor the impact of Operations via direct observation and feedback from communities;
- grievance management and managing disputes between the BTC Project and communities;
- Oil Spill Response Awareness for communities;
- assisting with the implementation of community safety, health and investment programs.

The BP Georgia Social team is organized within the Community and External Affairs Organization of BP Georgia, with a social team leader based in Tbilisi and supported by four community liaison officers (CLOs), two of which are responsible for the BTC/SCP pipeline corridor and two more CLOs cover the Western Route Export Pipeline (WREP). CLOs are substituted as and when necessary to cover areas of increased activity or concern.

3.10.1 Observations

The IEC reviews the social programs undertaken in association with the BTC Project primarily from the standpoint of verifying that an organization is in place and is functioning such that it is clear that Project-related environmental issues affecting local communities are appropriately managed. External review responsibilities in relation to social and community issues, including land acquisition and compensation matters related to the BTC Resettlement Action Plan, have been carried out by the Social and Resettlement Action Plan (SRAP) Panel, as dictated by the ESAP. IEC reviews do not cover the breadth of topics covered by the SRAP Panel. RAP completion audits were ongoing through late 2009 and closure of any outstanding issues was continuing between BTC and the SRAP panel at the time of this IEC visit. Going forward, BTC and the lenders need to establish a program for external review of BTC related social and community issues for future years.

Based on a review of documentation provided by the Project, social issues associated with the BTC Project are minimal. Complaints continue to be being logged, tracked and closed out effectively in Georgia using the web-based tracking system established in November 2006. The number of complaints continues to decrease: a total of 46 in 2008; 20 recorded through June 2009; and 44 recorded in the period of July 2009 through July 2010. 41% of these complaints are land related, while the rest is social. Apart from these complaints 9 requests were received from the communities asking for support in minor infrastructure repair in most cases.

3.11 CULTURAL HERITAGE MANAGEMENT

The cultural heritage program for the BTC project currently relates to the management of cultural heritage related material encountered during construction, as well as management of situations that could occur along the pipeline route in the future. Operations has not faced any issues related to damage to cultural heritage due to new construction or third-party damage to identified sites and the main activities have been associated with the management of archaeological materials identified during the construction phase of the BTC and SCP Projects. This effort is undertaken by BP's CEA department based in Baku for both Azerbaijan and Georgia.

3.11.1 Observations

As noted in the June 2009 IEC trip report, a major development took place on March 17, 2008, when BP on behalf of both the BTC and SCP projects signed a grant agreement with the Smithsonian Institution. As the cultural heritage program with SI is managed by the CEA organization in Baku and covers both Azerbaijan and Georgia, comments for Georgia are essentially the same as for Azerbaijan.

The program had two main goals - public outreach and capacity building, targeted for the GSHAP, the AIAE and the Georgian National Museum. The total value of this program is just over $1 million and its duration is two years. Current activities have focused on capacity building as represented by a cultural heritage training program that took place in April 2010.

The training sessions were led by a group of international experts including scientists from the Smithsonian Institution, Arizona University and the National Museum in Berlin. Participants in the event included approximately 43 representatives of the Gobustan State Historical-Artistic Reserve, the Azerbaijan Institute of Archaeology and the Georgian National Museum. The training focused on a range of topics covering assessment methodologies, collection and conservation techniques. The training was preceded by a two-day workshop aimed at providing an opportunity for the experts involved in the BTC/SCP archaeological research programs to analyze and interpret the BTC/SCP findings in a manner consistent with the international practice.

Activities still underway include:

- Publication of 1000 copies of a catalogue on the cultural heritage programme and on the artefacts discovered in the three countries (Azerbaijan, Georgia and Turkey) along the BTC/SCP route. The catalogue will be published in four languages: Azerbaijani, Georgian, Turkish and English; and
- Creation of a dedicated website that will describe the BTC/SCP Cultural Heritage Program and introduce the artifacts discovered in the three countries along the BTC/SCP pipelines in an interactive way which will be accessible to the broad public.

All of the above project activities have been previously recommended by the IEC.

During this visit a trip was made to visit the museum constructed to display BTC/SCP artifacts in Akhaltsikhe to view the final displays, as during the 2009 mission this museum was still being constructed. The displays are of excellent quality and based on a brief interview with the museum director, it is understood that the museum is well visited, not only by school children, but also by the general public. The IEC was also provided with bilingual book of scientific articles dedicated to the archaeological discoveries made in

Georgia during the course of BTC/SCP construction that is an excellent summary of the work undertaken and was also a BTC/SCP commitment to prepare.

3.12 MEETING WITH GOVERNMENTAL OFFICIALS

During this site visit a meeting was not held between the IEC and representatives from the Georgian Ministry of Environmental Protection and National Resources (MoE) and the Georgian International Oil Corporation (GIOC), as has been past practice.

4 TURKEY

The BTC Project in Turkey encompasses 1,074 km of pipeline extending from the Georgia - Turkey border in the Posof District to the Ceyhan Marine Terminal (CMT) on the Mediterranean Sea. From the Georgian border, the pipeline Right-of-Way (ROW) crosses the provinces of Ardahan, Kars, Erzurum, Erzincan, Gumushane, Sivas, Kayseri, Kahramanmaras, Osmaniye and Adana, terminating at Ceyhan. The BTC Project runs approximately parallel to the existing East Anatolian Natural Gas Pipeline (NGPL, completed in 2001) for about 30% of its length (approximately 330 km), between the cities of Erzurum and Sivas (Lot B). The BOTAŞ Gas Pipeline is parallel to the BTC pipeline at the Georgian border, where it connects to the South Caucasus Pipeline (SCP), but diverges until it terminates in Horasan. The BTC pipeline terminates at the Ceyhan Marine Terminal (CMT), which includes a 2.6 km long jetty and offshore loading facility, seven one-million barrel storage tanks, a central control building, housing compounds and administration, and a fiscal metering system.

Linefill of the BTC pipeline with oil began from the Sangachal Terminal near Baku on 18th May 2005, and crossed the Georgian Turkish border on 18th November 2005. Oil reached the Ceyhan Marine Terminal (CMT) on 28th May 2006. The first shipment of oil sailed from Ceyhan on 4th June 2006.

With linefill, the transition from construction to operations was initiated. BOTAŞ assumed responsibility for the operation of the pipeline until Provisional Acceptance (PAC) on 28th July 2006. From 29th July 2006 onwards, BOTAŞ International Ltd (BIL), the Designated Operator of the BTC pipeline in Turkey, assumed responsibility with BTC continuing to maintain an overall assurance role.

The July 2010 audit in Turkey consisted of a site visit of selected sections of the pipeline right-of-way (ROW), site visits to Pump Stations PT1 and PT3, and a visit to the Ceyhan Marine Terminal. The field visits were complemented by a review of documentation pertaining to project environmental, social and health and safety management as provided to IEC by BIL and BTC.

Specific comments relating to the data are provided in each of the relevant sections that follow.

4.1 PROJECT STATUS

BTC provided the following summary of project status, relative to IEC's scope of work, as of July 2010.

- Provisional acceptance was signed on 29th July 2006. BIL is the designated Operator of the BTC pipeline in Turkey, with BTC assuming an assurance role. The warranty period terminated on 29 July 2007;
- According to BTC, the outstanding items (LSTKA legacy) include 6 warranty items (2 off-ROW and 4 Construction Camps); and
- BTCX 1.2 expansion completed in Q1 2009. DRA ready for operations, although its injection is not required with the current throughput.

4.2 ENVIRONMENTAL AND SOCIAL MANAGEMENT ORGANIZATION AND RESOURCES

4.2.1 Observations

At the time of the construction phase, a turnkey contract were maintained between BTC and BOTAŞ who subsequently awarded EPC contractors the construction work in each of the three Lots, the Pump Stations, and at the CMT. Now that the project fully entered the operational phase, BTC maintains an assurance and support role over BIL in fulfillment of Operations ESAP commitments in Turkey.

BTC

As of July 2010, BTC ENV organization has changed its functional reporting line. The Compliance & Environmental Team Leaders of each country (Azerbaijan, Georgia and Turkey) directly report to the Exports Compliance and Environmental Manager, who, in turn, reports to the Regulatory Compliance and Environmental Manager.

In Turkey, the Compliance & Environmental Team Leader coordinates the Environmental Coordinator at Facilities, the Environmental Coordinator for the ROW and Marine Operations and the Environmental Investments Programme Coordinator.

The *Compliance and Environmental Team Leader*:

- ensures BTC's and BIL's environmental compliance (Routine and ER);
- ensures BTC's and BIL's environmental management efficiencies are continuously improve;
- ensures efficient management of environmental projects and LSTKA legacy item;
- ensures that BTC's environmental non-technical risks are mitigated; and
- liaises with third parties on environmental issues.

The *Environmental Coordinator (Facilities)***:**

- ensures environmental compliance of BTC Pipeline facilities;
- coordinates the environmental enhancement projects at facilities;
- ensures implementation of environmental component of OSR at facilities;
- reports progress and environmental metrics to AzSPU and BP Group; and
- coordinates construction legacy issues at facilities.

The *Environmental Coordinator (ROW and Marine)*:

- ensures environmental compliance of BTC Pipeline Right of Way (ROW) and Marine Operations;
- coordinates construction legacy (reinstatement) projects on and off-ROW;
- ensures implementation of environmental component of OSR on ROW and Marine;
- implements BTC's ROW environmental monitoring; and
- coordinates construction legacy issues on and off-ROW.

The *Environmental Investment Programme (EIP) Coordinator*:

- ensures delivery of individual project and EIP objectives;
- ensures proper and transparent use of all EIP funds in Turkey;
- ensures capacity building of EIP grantees;
- identifies and manages all risks pertinent to grantees and projects;
- liases with third parties on EIP related issues; and
- supports environmental assurance activities of the BTC pipeline.

BIL

As of July 2010, the BIL Health Safety and Environment organization has a Health, Safety and Environment Director reporting directly to the BIL President. The Health, Safety and Environment Director coordinates the three managers – Health and Safety, Environment and Emergency Response – already present in 2009, and the newly established positions for the Transport Mgr., IMS Mgr., the Public & Community Relations Chief and the Media Relations Chief.

The Public & Community Relations Chief position is currently vacant.

Environment Department

The environmental manager reports to the HSE Director, and oversees the following:

- an environmental supervisor (vacant), and two environmental engineers at the CMT;
- an environmental pipeline supervisor (vacant), and eight pipeline HSE engineers;
- an environmental supervisor (Environmental Management System - EMS), an EMS engineer (vacant) and a compliance engineer; and
- the activities of the consultancy company Dokay (environmental monitoring).

Public and Community Relations (PCR) Team

As of July 2010, a Public and Community Relations (PCR) chief reports to the Human Resource (HR) Director and leads the PCR team. The PCR chief oversees a PCR Supervisor, a PCR Supervisor (Land) and 9 PCR experts (PCRE) (one PCRE for Area 1: km 0-164 and PT-1, one PCRE for Area 2: km 164-373, PT2 and PT3, one PCRE for Area 3: km 373-575 and PT4, one PCRE for Area 4 (km 575-767), one PCRE and one PCRS for Area 5 (km 767-1004), two PCRE for Area 6: km 1004 -1076, including the CMT and one PCRE in the Ankara office).

In June 2009, IEC observed that BIL had a fully complete PCR coverage on a back-to-back rotation basis, with the exception of Area 3 (IPT1 and PT3) that was covered by the PCR Supervisor. As of July 2010, IEC notes that the BIL PCR organization has no back-to-back capacity at PT1, PT3, and PT4. PCRE at PT2, working on a 5 days per week basis (non back to back coverage needed) and reacts on calls from PT1 and PT3 when the local PCRE is absent (2 weeks per month). BIL indicated that, rather than to appoint additional manpower for those positions, the PCR Department is undergoing a complete re-organization to evaluate for the effective requirements in the field given the closure of the pipeline construction phase in the northern area and the related complaints/restoration/compensation pending issues.

Based on the discussions IEC had in the field with the PCR people, our understanding is that the lack of PCR staff at PT1, PT3, and PT4 for 15 days at a time does impact the continuity of community relations and does not allow properly and timely following the many unresolved complaints still open. Accordingly, the IEC decided to maintain the Level 1 non-compliance, Social Management Plan, Turkey (Commitment ID CH7 S2) until this situation is resolved

Pipeline Technical Management

As of July 2010, the BIL Technical Management Team consists of a Pipeline Technical Manager, a ROW Chief Engineer and a Reinstatement Supervisor, five ROW patrol teams for five pipeline zones and a ROW Maintenance and Geohazard Repair Contractor. In order to reduce illegal taps in Zone 5, a separate ROW patrol team will monitor the last 74 km of the pipeline in Turkey, visiting all locations every three days. BIL informed IEC that a final patrolling organization chart has not been defined yet and that patrolling services will be sub-contracted.

In addition to the ROW team, there are a GIS and Permits Supervisor and three GIS engineers.

4.2.2 E&S Management Organization and Resources - Recommendations

1. The BIL E&S team is fully operational but still limited by a number of key vacancies. In particular, the two environmental supervisor positions (pipeline and at the CMT) have remained open since June 2009. Although IEC understands BIL has encountered difficulties for recruiting adequate and prepared environmental engineers, it is recommended that BIL take immediate steps to fill those positions.
2. IEC observes that BIL is reconsidering to review PCR organization in order to take into account the new scenarios PCR Department. is facing. IEC recognizes that a new PCR team organization could effectively manage the remaining/new issues. Although the Level 1 non-compliance is rescinded, the IEC recommends that adequate PCR staff resources be maintained to guarantee the communication links established with the local communities.

4.3 ENVIRONMENTAL TRACKING AND PERFORMANCE

4.3.1 Observations

- BIL received ISO 14001 certification in May 2008 and continues to implement procedures in the BIL Information Management System (BIMS) for tracking of environmental performance. Two surveillance audits were conducted in 2009 and 2010;
- as of July 2010, BTC Environmental Tracking and Performance indicates that BIL has close-out 145 BTC Environmental Audit non-compliances out of 178 issues open and has closed 265 out of 327 BTC overall Environmental Audit Recommendations;
- regarding the ISO 14001 certification, BIL conducted an internal ISO 14001 audit in Dec 2009; following BSI conducted their 2nd audit in March 2010. During the audit, three minor non-conformances requiring action were identified. Upon completion of the BSI audits, BIL prepares Preventive Corrective Action Requests (PCARs) for each finding to initiate the root cause analysis process and to assign actions for closing out the finding.

A BSI re-certification audit is scheduled for February 2011. In July 2010, BTC informed IEC of the following:

- BTC and BIL conduct joint annual compliance audits. BTC undertakes quarterly site visits to all facilities, including a pre-audit visit in advance of IEC. During the visits non-compliances and recommendations resulting in corrective actions are identified and logged in the Facilities Environmental Action Tracking Database,
- BIL's ultimate target is to obtain an Integrated Management System certification,
- BIL Information Management System (BIMS) portal is set up: implementation of PCAR management system accessible on BIMS is nearly finalized,
- the implementation of the BIMS-based ECO-CARD action tracking system is currently underway with the trial period expected to be completed by end of 2010. In addition to the environmental action-tracking database, BIL also uses the STOP/SOC cards action tracker, also available on BIMS,
- the ECO-CARD system collates findings, observations and recommendations coming from the field. Data are stored into the system and made available to site HSE Engineer and environmental issues are transmitted to the Environmental Supervisor for their consideration. The HSE Engineer or the Environmental Engineer can than initiate by e-mail the response action to be adopted through the action tracking system,
- BIL EMS Supervisor will visit facilities to present and to introduce the use of the ECO-CARD tool to the site staff at the beginning of the implementation and then HSE and Environment Engineers will address the issues at sites when required.

4.3.2 Environmental Aspects and Impacts Register – Recommendations

1. The implementation of the ECO-CARD system represents a step forward in achieving an effective operations management. IEC encourages additional effort be made to improve the action tracking system to make it fully effective and accessible to all BTC and BIL operating sectors.

4.4 CONSTRUCTION CAMPS, INFRASTRUCTURE AND SERVICES

4.4.1 Construction Camps – Current Conditions

The July 2010 audit did not involve detailed visits of any construction camps. The only camps briefly visited were Hanak, Kars and Cardikaya. Kars and Hanak camps were handed over to Kars and Ardahan Governorships and demolished. Liability issues on Hanak and Kars camps have been transferred to the local Governorships with BTC following up the current and potential future use of these camps. Cadirkaya camp was observed to have been satisfactorily restored with fence maintained as per owner request.

In July 2010, IEC has been informed that camp sites closure reports and advisory memorandum were prepared by BP remediation department that is working with BTC to finalize closure reports. A total of eight issues associated to camps were closed according to BP RM's and BTC Environment Team's evaluations.

Sign off closure reports for the following eight camps are available: Andirin, Azizli, Koprukoy, Kova, Koyunkaya, Orensehir, Sivritepe and Yesilkent. Other outstanding items

regarding construction camps are currently under review by BTC. IEC was also informed that BOTAŞ Project Directorate (LSTK Contractor) has closed the 12 remaining construction camps although BTC final sign-off will take place after verification by the BP RM's and BTC Environment Team.

In 2009, IEC recommended that by the time of the next operations audit in 2010, BTC provide additional indication as to whether the construction camps will be closed and reinstated by 2011, or that an additional modification to the MOC will be required. As of July 2010, IEC has been informed that a MOC regarding the ongoing operation of construction camps at fixed facilities will be maintained open until at least 2011 to reflect current plans and future uncertainties regarding the camp sites. In particular, BIL/BTC are evaluating whether or not to convert campsite and PTs sites rental agreements into land acquisitions. IEC was informed that BTC has made funds available for this purpose.

4.4.2 Construction Camps – Recommendations

1. IEC recommends that sign off of closure reports for the remaining construction camps be finalized.
2. Concerning the camp sites reinstatement MOC, as noted in the June 2009 report, IEC requested BTC to consider the following:
    - BTC/BIL to make the final decision as to whether the construction camps will be closed and reinstated by 2011, or an additional modification to the MOC to consider the possible a land acquisition is defined by 2010;
    - plans and procedures for compliance to project standards with respect to operation of camp potable water supplies and WWTPs (CMT currently only in operation).

4.4.3 Aggregate and Excess Material Management - Observations

In July 2010, IEC again visited the excess material dumpsite DS1 at PT3 and noted the following:

- DS1: re-vegetation has progressed since 2009 but further monitoring is required to assess reinstatement success, given that this site is within ESA 19;
- the access road to the site has been reinstated to its original pre-construction condition as a path, de-compacted and re-vegetated so to satisfy the requests of the local stakeholders.

As of July 2010, IEC has been informed that on July 3rd, BTC conducted a site inspection to Kars Protegol contaminated soil disposal area. BTC reported that drainage channels located downgradient from the disposal site were in good condition, no excavation within the area was observed, and the integrity of the disposal area appears to have been maintained. The property owner could clearly locate the area and was fully aware of the requirements for maintaining the integrity of the site. No issue was identified.

4.4.4 Aggregate and Excess Material Management - Recommendations

1. Monitoring of reinstatement success should continue at the PT3 dumpsite given that the site is located within an environmentally sensitive area (ESA 19), as designated in the Environmental Impact Assessment;

2. Monitoring of reinstatement success should continue at Kars Camp Protegol contaminated soil disposal area.

4.5 WASTE MANAGEMENT

4.5.1 Non-Hazardous and Hazardous Waste – Observations

In July 2010, IEC re-visited the operations CWAA at the CMT and construction-phase CWAAs at PT3 and PT1. The following observations were noted as part of site visits:

- the new CMT Operations CWAA, located approximately 200-250 m from the BIL administrative complex, completed in March 2008, is now fully in operation. The use of the old CWWA at CMT was reported to have been discontinued with all waste removed and the punch list items completed during 2009;
- construction of permanent CWAA's at each Pump Station in Turkey has not progressed in the field since the June 2009 audit and no date for final implementation is currently known. However, the IEC was informed that a scope of work for the construction of permanent CWAAs at all BTC Turkey operations sites to fulfill the requirements defined in ESAP and in the WMP has now been developed. Although BTC believes that there is no immediate compliance issues with the current state of the CWAAs which are located in the construction camps, construction or enhancement works to be implemented at the different CWAAs have been identified and prioritized based on the condition of the temporary CWAAs;
- materials from the construction phase, including unused hazardous chemicals and construction material from Botaş were still noted throughout PT1 and PT3. Although this is an open issue since the June 2007 visit, during this visit the IEC was informed that BIL has recently reached an agreement with Botaş for inventorying/disposing/recycling construction phase materials and wastes. An official procedure to hand over these materials has been issued by Botaş and is currently under revision; and
- IEC reviewed the waste log register provided by BIL during the visit. As observed during past visits, the information continues to be well recorded in terms of waste description, class of waste, volume collected, transport, disposal, destination and receipt notification. IEC notes that there are some entries where the receipt notification has not been received or is in progress, including some hazardous wastes going to Izaydaş, records of oil filters, contaminated material, oily soil, and medical waste (PT1 and CMT). Although IEC was informed that follow-up does take place in the case of non-receipt of shipping manifests, confirmation that this is done on a regular and routine basis is required and the tool should be updated accordingly.

At CMT, IEC visited the operations CWAA and had the following observations:

- the site was clean and well operated with good housekeeping observed;
- contaminated soil and oily waste were properly stored into drums within a hangar and are reported to be shipped to Izaydaş twice a year for incineration;

- the oily water separator (OWS) was reported to be working properly although the effluents are not tested before discharge into the buried tank. The IEC was informed that this situation had been identified by BTC, a non conformance action (NCA) was submitted to BIL requiring them to include the testing of the OWS into their existing monitoring programme.

At PT3 at PT1, IEC reviewed waste management of the construction camp CWAAs and had the following observations:

- waste handling procedures at both facilities continue to be well conducted;
- both hazardous (stored in a locked area) and non-hazardous waste are temporarily stored here before disposal to Izaydaş (or at the CWWA at CMT for PT1) or recycled through licensed contractor;
- housekeeping throughout the sites should be revised as lot of scrap metal and other construction materials from the construction period are still stored at both construction camp sites;
- hazardous and non-hazardous material left from construction phase from Botas are stored into two hangars at the PT3 construction camp.

IEC was informed that a Best Practicable Environmental Option (BPEO) for the management of solid wastes was initiated and an implementation plan was being developed for 2010. Through a number of prioritization criteria such as the site capacity, the volume of expected waste, potential HSE and economic impacts, etc., the study identified five municipal landfills and four cement factories as potential disposal facilities for domestic waste and hazardous waste, respectively. The study is still ongoing with finalization expected by end Q3 2010. From the preliminary outcomes of the study, two potential municipal landfill sites, Erzurum and Antakya (already a Regional Development Initiative – RDI - Project of the BTC CSR Team) were identified as suitable options to be used instead of Izaydaş.

4.5.2 Chemical Storage Facilities at Fixed Facilities

At the time of the June 2009 visit, the chemical storage areas at CMT, PT2, PT1 and PT3 were observed to be nearing completion. During the July 2010 visit, the IEC was informed that the punch list items were resolved and all the chemical storage areas were constructed in 2009 and are now operational. During the trip, only the chemical storage area at PT1 was visited. The facility is now completed and ready to be used.

4.5.3 Final disposal of Protegol Spill material, Kars Camp

As of July 2010 IEC was informed by BTC that a site inspection of the Kars Protegol Disposal Area had been conducted by BTC at the beginning of July. No specific issues were identified from this survey. The integrity of the disposal area was found to be well maintained, the area is in overall good condition and the site owner is fully aware of the requirements for maintaining the integrity of the site.

4.5.4 Non-Hazardous and Hazardous Waste – Recommendations

1. During the visit it was reported that the effluents from the OWS at the CWWA at CMT are not tested before discharge into the buried tank. Although the potential environmental

effects associated with a spill are considered negligible, a proper testing procedure should be established.

2. Despite observations of good operating standards at construction camp CWAA's during audits, IEC notes that little progress has been made to finalize the construction and implementation of permanent CWAAs at fixed facilities. Now that a scope of work for the construction of permanent CWAAs at all BTC operations facilities has been developed, IEC recommends to put in fast track the process and start to replace the construction CWAAs currently used.
3. IEC observed that materials originating from the construction phase including hazardous chemical barrels are still being stored on-site at pump station construction camps and that BIL has not taken action to remove these materials, as they originate from BOTAŞ. IEC also observed materials stored into two hangars at the PT3 construction camp left from the construction period. IEC reiterates its recommendation to take actions to catalogue and remove all material to a proper disposal or reuse site, rather than leaving it onsite the construction camp CWAAs at fixed facilities.

4.5.5 Wastewater Management – Observations

As of July 2010, from the revision of the results of the periodical monitoring the IEC observes that WWTP discharges across the project remain consistently non-compliant. According to the 2009 BTC Annual Report a total of 32/72 WWTP samples taken in 2009 were non-compliant. According to the additional monitoring data provided to IEC during the visit, in the period June 2009 – May 10 30/48 WWTP samples collected at all facilities but CMT were not compliant. As noted in the previous visits, non-compliant discharges are not released to the environment but rather trucked to Project approved Municipal WWTP so this situation can not be considered an environmental concern. During the visit, IEC reiterated that while this is technically not a non-compliance with the Operations ESAP, it is inconsistent with Commitment ID CH4E53 of the Environmental Emission Management Plan (EEMP) ESAP that specifies operational commitments to WWTP performance as follows: "*The sewage treatment plant will treat all black and gray water arising on the AGI. The plant will be a self-contained activated sludge package unit and will discharge via the storm water pond. Treated effluents will meet the requirements of World Bank guidelines and Turkish regulations".* From the information provided in the field, the project wide review of all WWT systems started in 2007 is now almost completed and a final scope of work was developed to enhance the performances of the systems throughout all facilities. The proposed enhancement package is a combination of building new WWTPs, improving the existing OWSs, improving the Storm Water pond (SWP) and the Primary Withholding Pond (PWHP) and reviewing all connection pipes system by adding valves that allow diverting the different flows in case of plant failures or overflows. From what observed in the field, construction activities started at PT1 and PT3 where new WWTPs have been installed and were under start-up at the time of the audit. Engineering of similar WWTPs at PT2 and PT4 is ongoing although a final schedule for construction has yet to be defined. The following observations were noted as part of site visit:

- at CMT, the operation WWTP and the construction camp WWTP were visited. The first was upgraded by providing an additional settling tank and a flow meter to measure the influent to the plant and a mixer pump in the buffer tank to improve the distribution of solid material in the influent, although a procedure to keep records of the amount to be treated has yet to be established. After treatment, the effluent is discharged to the nearby

storm water pond or sent to the OSKİ Municipality WWTP if non compliant. The WWTP at construction camp was unchanged since the previous visit with no issues noted;

- at PT1 and PT3, the newly installed WTTPs were visited. The new plant packages include first and secondary sedimentation tanks, first and secondary Rotating Biological Contactors (RBC) units, sand filters and chlorination units. In addition to the technical features of the plant that represent the state of the art for treatment technology, one of the main operational improvement observed was the installation of a valve system at the outlet that allows diverting the outflow to the SWP, to recycle through the existing WWTP or direct to the environment (creek or seepage shaft). At both PTs, the use of the old WWTPs located at the construction camps has been discontinued and the water is hauled daily to the new operational WWTPs. Results from tests at PT1 and PT3 were in compliance.

4.5.6 Oily Water Separator Performance - Observations

In June 2009, IEC was provided with a copy of a third party review of OWS performance across all fixed facilities in Turkey that BTC completed in September 2008. The report identified operational and maintenance problems as the main causes for non-compliant test results in the effluent. A number of improvements were recommended including: facilitate the access to OWS, increase the amount of oil removed from OWS, install a by-pass line between OWS and the primary withholding pond, install block valve before the storm water pond. Furthermore, during the visit the implementation of a "Maximo" system to enhance the maintenance schedule of the OWSs was mentioned. However, as of July 2010, the situation effectively noted in the field has not changed since previous visits and no schedule for implementing the upgrades has been established yet.

4.5.7 Wastewater Management – Recommendations

1. Now that the process of enhancing the performances of the WWTPs at fixed facilities has started and an upgrade program is in place, the IEC recommends that the upgrading program be maintained so to be able to close this long-standing problem.
2. Now that the issues associated to the OWS have been identified and a site-specific action plan has been developed, IEC recommends that BTC and BIL implement the actions to finally solve these issues, particularly those relating to consistency of maintenance operations across all fixed facilities.

4.6 POLLUTION PREVENTION AND ENVIRONMENTAL MONITORING

4.6.1 Observations

Since June 2006, the Project has adopted a pollution prevention plan aimed at systematically identifying potential impacts from operations activities and implementing avoidance and mitigation measures to minimize potential adverse effects on the environment. The mitigation measures are aimed at preventing oil/chemicals spills and their management, monitoring air emissions, maintaining track of waste production and disposal at each facility, and protecting surface water and groundwater.

The Operations Environmental Action Tracker continues to be maintained and includes the records of environmental incidents and spills incurred, including their location, size information, clean-up actions undertaken, priority, the Preventive and Corrective Action Requests (PCAR), audit/inspection actions, MOCs and a list of enhancement actions. Based on information provided during the visit, it is understood that the overall oil response spill strategy throughout Turkey has been reviewed by an external consultant (Bernie Bennett) to assess BIL spill response capability to handle potential spills. BIL has contracted SESMEKE to provide the response services, including training, and contingency plan updating. According to the results of the report of the assessment to three out of the four bases and the CMT, the response capability in place at all facilities was judged appropriate in terms of location, equipments and response teams.

With reference to the ongoing Operations phase, DOKAY continues to be in charge to conduct all environmental monitoring activities at pipeline facilities as dictated by the Operations ESAP Environmental Emissions Monitoring Plan (EEMP) and Ecological Monitoring and Management Plan (EMMP).

Air Quality Monitoring

- as reported in the BTC Annual Report, ambient air quality monitoring was undertaken at ten locations in and around the CMT on four occasions in 2009. The annual average SO_2, NOx and BTEX values measured in 2009 were generally in compliance with the exception of CMT3 that reported higher concentrations of SO_2 due to the contribution of the quarterly average value in autumn 2009, reported to be probably associated with the burning of agricultural stubble at nearby farms. Data provided to IEC for January and March/April 2010 showed no exceedances; additional data beyond that time was not available. Changes to the CMT ambient air quality monitoring program were reported to be ongoing to review the BTEX sampling methodology, although the details of the study have yet to be defined;
- annual average values of benzene reported at the CMT in 2009 and in January/March/April 2010 comply with the BTC Project Standard and the limit value set forth in the Turkish Regulations;
- flue gas emissions originating from the gas fired reciprocating engines, water heaters, diesel fired generators were reported in compliance at all PTs, CMT and IPT1 during 2009. Results from April 2010 stack emissions sampling were not available at the time of the visit;
- a legal issue relating to the height of water heater and generator stacks was reported during the June 2008 IEC visit. In June 2009, IEC was informed that funding to increase stack heights has been secured and that BIL Engineering was proceeding with design for a planned implementation by July 2009. The stack extensions of wax handling boilers and IPT2 generator were undertaken by BIL. The Ministry of the Environment and Forestry (MoEF) identified the generators and fire pumps stacks as potentially non-compliant with Turkish Regulation for the Control of Air Pollution Originating from Industrial Establishments (RCAPOIE) and requested that a report be prepared by an academic to support BTC and BIL position. In response to this request, a scope of work has been defined, an agreement with a university signed and a report is under development that will be issued to MoEF as an attachment to the air emission permit application after it has been finalized;

- in June 2009 BIL reported that stack sampling ports were planned at camp facilities and that a tender process was ongoing. As of July 2010, it was reported that stack sampling ports were installed on heaters at all facility camp sites in 2009-Q3. One round of monitoring consistent with the Regulation on Control of Air Pollution Originated from Heating (RCAPOH) is expected to be undertaken in 2010 by BIL;
- during the June 2009 visit IEC was informed that BTC will have conducted a short-term emissions analysis to investigate VOC emissions during ship loading to confirm if the Continuous Emissions Monitoring system is required based on mass flow rate criteria given in the Turkish Air Quality Regulations. As of July 2010, a detailed VOC monitoring study has been completed which confirms compliance with emissions standards and that there is no need for a continuous emissions monitoring system. A copy of this report was not provided during the visit.

Noise

- at the time of the June 2009 visit IEC was informed that noise monitoring for environmental and Occupational Health purposes was conducted, a contractor was hired and the report in English was not yet available. As of July 2010, it was reported that internal workspace noise monitoring measurements were completed over 2009 at all Project facilities to assess workers exposure. A report with results of the assessment and recommendations were developed and provided during the visit. Although no major risks were identified, action such as shift rotation and extensive use of noise protecting device were prescribed to limit noise exposure at the noisiest areas.

Groundwater Monitoring

- in June 2008, IEC was informed that BIL was planning to monitor groundwater at the CMT by September 2008. According to the 2008 BTC Annual Report a full groundwater and surface water monitoring program was under development and scheduled to commence in 2009. According to the 2009 annual report, the monitoring program for operations has been developed by BIL but its implementation has been postponed to 2010. The scope of the plan will be to monitor the impacts of groundwater abstraction from the wells, the potential for groundwater contamination from BTC facilities operations and saline intrusion at the CMT;
- during this visit IEC was informed that groundwater sustainability studies to evaluate the impact of additional groundwater wells have been completed for CMT and PT1 and are planned for IPT1 and IPT2. A Water Quality Plan has been prepared for groundwater quality monitoring with field activities planned for 2010 following the completion of the ongoing tendering. No information was provided as to whether new piezometers will be installed and the rationale/procedures and parameters for the sampling program.

Management of Contaminated Soil

- the soil remediation site at the CMT was visited during the July 2010 mission. No differences were observed since the last visit in June 2009. According to the information provided, the only activity currently ongoing is the mechanical aeration of the soil to continue enhancing natural biodegradation. From the results of the latest chemical analyses, the soil can be classified as inert material. From what was understood from on site discussions, a final disposal method for this material has not yet been defined, pending a decision from the MoEF. Current final disposal options being considered are

incineration or landfilling at Izaydaş, incineration at a closer incineration facility licensed by MoEF, and continuing with land farming at CMT.

MOC for Treatment of Slops at the CMT

In 2007, IEC approved a MOC in which BTC proposed to build a reception facility at the CMT for the treatment of slops from tankers and the consequent discharge to sea of the treated effluent. BTC initiated design work on this facility. Since that time, BTC is now reconsidering as to whether such a treatment facility is necessary, given that of the over 700 vessels loaded at the CMT to date, none has yet requested to discharge slops. According to the information provided, BTC has developed a MARPOL compliance strategy and submitted a report to Turkish Government for consent at the end of 2009. A response from Turkish authorities was received in 2010 indicating some data gaps in the documentation provided and asking for a contingency plan to include oily slops as potential sources of contamination. BTC is now working to develop a revised approach to address this issue.

4.6.2 Pollution Prevention and Environmental Monitoring – Recommendations

1. IEC notes that steps have been taken to deal with legal issues with MoEF regarding water heater and generator stacks at IPTs and CMT and steps have been undertaken through the definition of a scope of work and the signature of an agreement with a university to develop a report to fulfill MoEF requests. Although this issue is not relevant to ESAP compliance, but rather legal compliance with Turkish regulations, IEC reiterates this request that this issue be dealt with promptly as it was raised in the June 2008 audit visit.
2. In June 2009 IEC noted that BTEX in air is measured as a parameter at the CMT, but that there are no Project standards, international standards or limits imposed by Turkish regulations. IEC requested the project to clarify how BTEX levels were measured in accordance to a project specific standard and the relevance of these measurements, given that no standard currently exists. BTC informed IEC that there are several international health guidelines/standards for BTEX compounds and that a comparison with these standards should have been considered. As of July 2010, BTC reported that a review of the previous monitoring results has started in 2009 with completion expected by 2010. The issue is therefore considered still open.
3. In June 2009 IEC requested BTC/BIL to provide additional information regarding VOC monitoring at the CMT and how VOC emissions will be compliant with project standards As of July 2010, IEC reiterates this request as we were informed that a detailed VOC monitoring study has been completed but were not provided with a copy of the study.
4. During the June 2009 audit IEC requested that BTC clarify the site-specific groundwater monitoring procedures planned at each facility such that these procedures would be consistent with BP standards at other fixed facilities similar to those of the BTC project. In response, BIL has added a groundwater monitoring framework to the BIL Environmental Monitoring Programme in 2009 and the original plan was to start monitoring in 2010. To date, the tender package is ready, but the contract is not expected to be awarded until August. The issue is therefore considered to be still open.
5. IEC notes BTC's clarification on the issue of the treatment of slops and awaits additional information in this regard, when available.

4.7 BVT 30 INCIDENT

On the night of August 6, 2008 an explosion at BVT30 site resulted in a fire and the burning of about 5,000 m^3 of crude oil and the release of further 940 m^3 of oil on to the surrounding land.

The oiled soils were excavated following the incident. The area of the excavation was about 1,560 m^2 and the volume of the excavated soil, estimated to be about 3,700 m^3, was stockpiled nearby.

Two specialized companies completed soil remediation and reinstatement works in the first half of 2010. The first company supervised the excavation of the contaminated soil around BVT30, as well as the excavation of the existing drainage pipeline and contaminated fill material around the pipelines, performed soil sampling from the excavation areas, backfilled soils, excavated contaminated soils, established a baseline of the new stockpile area and conducted gauging and sampling of groundwater monitoring wells. The second company was responsible for removing the stockpiled soil to the Izaydaş landfill facility and clearing the site to the condition it had been prior to the release of crude oil.

During the July 2010 visit, BTC provided IEC with the "Additional Excavation and Sampling Study at BVT-30" draft report (follow up to the 2009 report mentioned in the IEC 2009 report) and the "Remediation Completion Report for Removal of the Contaminated Soils From BVT30 Site" dated March 2010. The analysis of these documents indicates that:

- in November and December 2009, 297 hazardous waste truck loads representing 7,188.5 tons of oil contaminated soil, liner and geotextile were transported to the Izaydaş landfill for final disposal;
- when the company left the site, the remaining soils were sampled and tested to verify the removal of contaminated material and to assess residual risk at the site. The only remaining task required for full reinstatement of the site was to place clean topsoil in the stockpile area to enable the site to be re-used as farmland.

During the July 2010 visit, BTC informed IEC that the BVT30 site has been cleaned up and reinstated. Post-cleanup monitoring activities are underway with groundwater monitoring is still to be initiated.

4.7.1 BVT 30 Incident – Recommendations

1. IEC acknowledges that the remediation works were completed in a time effective manner. Subject to soil and groundwater monitoring results, IEC recommends identifying an appropriate long-term management strategy in order to completely close the consequences of the incident, and evaluating if further monitoring will be required.

4.8 ROW MANAGEMENT, EROSION CONTROL, REINSTATEMENT AND BIORESTORATION

4.8.1 Erosion Control, Reinstatement and Biorestoration - Observations

ROW Management and Reinstatement Progress

- since post-construction ROW reinstatement phase is being progressively completed, BTC/BIL are adequately adapting the ROW management organization toward an appropriate ROW maintenance phase. Notwithstanding the improvements observed during the July 2010 visit, actions to achieve permanent reinstatement and biorestoration conditions, monitor and maintain effective erosion control and re-vegetation success continue to be required at some locations. At this stage of the Project, IEC considers that this situation is normal. Reinstatement of the pipeline has reached the stage where the process is now effectively maintenance checks and reacting as appropriate and this is being done;
- since 2007, ROW maintenance was conducted by BIL. BTC only took some corrective actions for construction legacy issues. BTC and BIL continue to work together on the ROW maintenance and the management system appears to be coordinated satisfactorily. BIL has clear roles and responsibilities in the ROW management through its Pipeline Technical Management Department whereas BTC ensures remote sensing and GIS based biorestoration monitoring along the ROW. IEC understands that as of January 1st 2010, an integrated GIS-based ROW management system has been implemented and regularly updated;
- BTC still supports BIL for improving the GIS system, which in the near future is expected to be included into the central information source for ROW management, directly linked to the ROW and Access Road registers;
- as a result of an extensive geohazard maintenance program carried out throughout 2009 and planned for 2010, portions of the ROW affected by critical erosive or landslide phenomena are now under control and the most serious ROW terrain stability problems have been addressed. Nevertheless, the identification of a number of newly recognized geohazard locations, mainly related to land slides and erosion problems, indicate that site specific monitoring and action programs have to be considered by BIL and BTC. In fact, in 2010 a number of new landslides areas have been identified in Lot C between KPs 1007 and 1018. In terms of risk prevention and geohazard, each of the critical areas identified are being strictly monitored by BIL. In addition, the BTC satellite imagery analysis tool is still being used, although primarily for biorestoration-related issues (vegetation) and long-term erosion risk control.

BIL ROW Patrolling

Routine ROW patrolling activities are undertaken by BIL covering the entire pipeline corridor every 2-3 weeks; each of the 5 zones is patrolled by two ROW patrol teams covering approximately 10 km/day per team on a continual basis with the goal of surveying 20 km/day. Regular patrolling activity on pipeline section between KP 0 and KP 1001 is carried out seven months/year (approximately from April 15th to November 15th because of snow coverage in the north during the winter months). From KP1001 to the Cehyan Terminal (about 74 km), patrolling is maintained for 12 months per year, as this section is always free of snow. This section also records the highest risk for illegal tapping with a total

of 15 out of 23 illegal attempts recorded in 2009 occurring in this area. Patrolling Team monitoring frequency is three days per week in this section.

BIL ROW patrol teams improved their capacity to recognize potential problems. Reporting to supervisors is done on a systematic basis through daily reports with relevant information loaded in a timely manner onto the GIS database. The system is accessible at any time. In addition to the routine daily patrolling activity, 100 meters upstream and downstream embankments of all ROW rivers and irrigation channel crossings are checked in detail twice a year. The reports are supplemented with photo documentation taken every 25 meters. In order to document ROW conditions, patrol teams take photos of the ROW at 500 m intervals. Furthermore, patrol teams also monitor and follow up post maintenance groups' repairs. IEC understands that in 2009 the unified ROW register was transferred to BIL with a finalized version expected to be transferred by the end of 2010. IEC has not been provided with the copy of the ROW register.

BIL has established two different reinstatement procedures according to the degree of importance:

- minor findings, reported by the patrolling teams, evaluated at site by the reinstatement chief engineer and/or supervisor. Normally, the problem is fixed with local manpower, hand tools and light vehicles like tractors and pick-up trucks;
- major findings, reported by the patrolling teams and evaluated at site by the reinstatement chief engineer and/or supervisor. Based on the field observation data sheet, the repair method and necessary equipment are identified and shared with BTC.

The 2009 ROW repair contract in Turkey included more than 800 minor repair locations reported by the patrolling teams, which were fixed by the contractor. Additionally, major remediation works were carried out at 30 locations. 218 cases out of the 800 minor remediation works conducted in 2009 required additional actions in 2010. These types of repair works normally take 3 to 4 days each and are carried out by 2 teams of 5 people each. The working plan is to start the works from KP 0 towards Ceyhan. IEC understands that a possible reason for incomplete or insufficient repair works in 2009 could be related to insufficient BIL/BTC supervision or the Contractor's poor performance. BIL /BTC is going to implement an action program aimed to reduce/eliminate this problem.

The Patrol teams have reported an additional 58 minor repair locations in 2010 and BTC now has to approve intervention.

Geohazard Strategy

All geohazard findings gathered from the ROW patrolling activities and also from the environmental department and Jandarma observations are carefully evaluated and prioritized from high risk to low risk by the Pipeline Technical Manager or the Reinstatement Chief Engineer. Immediate and long term actions are defined either for high and low risk Geohazard issues that are of potential threat the pipeline integrity.

The BIL Geohazard Monitoring Procedure (Document: BIL-PRO-PLT-GEN-002 Rev. 000 of February 2010), follows and integrates the Geohazard Monitoring Strategy document released in 2009. In this document, BIL establishes the process and responsibilities to actively manage the pipeline geohazard risks, remedial actions and monitoring activities through a coordinated GIS based system.

During 2009, 36 major geohazard locations were identified for intervention. As part of the major remediation works carried out in 2009 at 30 locations, remediation works were carried out at five landslide sites, with one of these sites requiring additional intervention in 2010. IEC understands that in 2010, four new landslides areas have been identified in Lot C between KPs 1007-1018. Monitoring boreholes have been drilled although no interventions are planned in 2010, subject to monitoring results. Repairs might be planned in 2011, if needed.

The 2009 Physical Monitoring Report, outlines as erosional phenomena represent the prevailing concern in approximately 50% of the 236 slope locations considered in the study. In general, the erosion classes recorded in 2009 remained stable (29% of the locations) while improvement in erosion status was observed in 5% of the visited locations. The magnitude of erosion increased in 2% of the locations as compared to what recorded in 2008. Additionally, erosion has started to become a concern in 14% of the locations that were in good condition in 2008.

Geohazard monitoring procedure includes monitoring of active faults and the IEC understands that an active fault monitoring study is underway. Monitoring strategy, taking into account the earthquake records through an online alert to GIS from Boğazici University - Kandilli for any event greater than 3 Richter within 50 km of ROW, has been drafted. A final strategy is still to be finalized.

4.8.2 Erosion Control, Reinstatement and Biorestoration – Recommendations

1. As of July 2010, IEC notes that significant progress has been made toward establishing an effective ROW management system since the last audit, in particular regarding the implementation of a Preventive Corrective Action Request management system accessible on BIMS. As the ROW Register is intended to provide the most comprehensive and effective ROW management tool, it is recommended that environmental data entry into the BIMS be regularly maintained to ensure that monitoring data is updated on a current and consistent basis.
2. Considering the important role patrol teams have for providing day-by-day status of the ROW and feeding the BIMS system with observations collected in the field and as-built information to be stored in the ROW register and GIS database, it is recommended that the patrol teams be always fully operational during the patrolling season, adequately trained and provided with proper vehicles and technical resources necessary to carry out their duty. It is also recommended that patrol teams be provided with sufficient organization and personnel coverage to ensure the ROW coverage of 20 km/day per team on a continual basis instead of the present day quantity of 10 km/day. A more effective link between the patrolling team and the environmental team should be established such that both teams can benefit from the outcomes of their surveys.
3. Major erosion and landslides, reinstatement and biorestoration issues were effectively addressed over the past 12 months, but in 2010, newly formed landslide areas have been identified in a restricted zone of LOT C between KPs 1007-1018. Equally, 2009 Physical Monitoring Report findings indicate that, due to specific climatic and soil characteristics, major erosion problems generally occur in similar regions, in particular in those regions with frequent and heavy precipitation. IEC recommends that BIL and BTC define a monitoring strategy program to classify the whole ROW on the basis of the landslide risk and erosion risk potential. The areas characterized by a higher risk will have to be considered for specific monitoring and action strategies. Such a program should also be

able to allow for the early identification and of landslide risk along the ROW such as the situation IEC observed at KP 388.

4. BIL/BTC is developing a regional seismicity monitoring strategy that includes the recording of earthquakes within a distance 50 km from the ROW. IEC also recommends a program to measure if any fault creep is occurring at locations where the ROW intersects active faults zones, in particular those characterized by significant lateral movements (such as the North-Anatolian fault in the Erzurum area).
5. IEC recognize that a coordinated ROW GIS based maintenance management system has been developed, but it is recommended this system be progressively refined and fully integrated with all available resources, available data and information exchanged with all BTC sectors of activities (environment, access roads, public consultation and relations). The use of this tool by the environmental team should be strengthened.

4.8.3 Access Roads - Observations

In 2007, a Level II non-compliance (*Reinstatement CCP, Commitment ID: 2*) was raised with respect to final reinstatement of Project access roads. In response, BTC provided the Report BTC-REP-ESM-GEN-003 - Created Access Roads, Stockyards, Borrow Pits and Quarries dated 17 of December, 2007.

In 2008, IEC recognized the improvements resulted from the corrective actions undertaken and recommended that BIL and BTC prepare an Operational Access Road Strategy and Plan to coordinate procedures as to how access roads are to be used during the operations phase, and as a first step toward a final access roads reinstatement and closure strategy. In June 2009, the Operational Access Road Strategy and Plan was still not available; BTC informed IEC that out of the among 20 open access road issues, 16 had been closed. As of July 2010, IEC understands that 19 of the 20 issues are now closed, although this is not reflected in the Access Road Register. The issue is considered still open. The Access Roads Register does confirm the 2009 figures, giving a grand total of 798 access roads of which 87 are the newly built access roads plus 682 that were upgraded and 28 accidentally opened. All 2009 pending reinstatements issues in Lot B and Lot C are closed. Newly Built/Accidentally Opened access roads reported as not reinstated in the register have been kept permanently opened as result of separate agreements stipulated with villagers/land owners that requested this option. IEC has been informed that all these issues are closed. Specifically during this visit the IEC was informed of the following:

- the Access Road Register was finalized as of January 1st 2010;
- BTC shared closure reports were with BIL;
- finalized version of the Access Road Register is to be transferred to BIL by end 2010;
- access roads database has not yet been integrated into the GIS system; incorporation of this database into BIL's operating data management is in progress.

In July 2010, IEC visited the access road to Dump Site 1, adjacent to Environmentally Sensitive Area (ESA) 19 (excess soil dump site used for soils excavated for the construction of PT3). During the 2009 repair works campaign, this access road was reinstated to the condition of the original track as identified on the basis of aerial photos taken before construction by reducing the width of the access road. As part of reinstatement activities, the

access road was reduced to the minimal width that could be worked by a tractor, decompacted, seeded and fertilized.

IEC understands that permanent signage and community awareness programs have been defined for the Access Roads to Block Valve Stations (BVTs). Upgrading and maintenance activities are included under Geohazard scope in 2010.

4.8.4 Access Roads – Recommendations

1. IEC acknowledges the successful efforts of BTC and BIL to deal with access road reinstatement and closure arising from the construction phase, but recommends that the coordinated transition from the BTC access road register to BIL access road register for operations be finally achieved and that the only pending issue still open be closed.
2. IEC still recommends that BTC and BIL define an operational access road strategy to properly manage any possible liability issue that may arise with villagers, landowners and local authorities that requested to keep open some of newly-built or accidentally-opened access roads.

4.9 ECOLOGICAL MANAGEMENT

4.9.1 Observations

During this July 2010 visit, IEC observed that initial biorestoration efforts along the ROW in Turkey are satisfactory. Significant improvements in the quality and in the extension of the reinstated vegetative cover have been noted. Poor topsoil settling and irregular or absent vegetative cover are still present in critical steep slopes along the ROW in areas such as at KP 373 where diversion channels and slope breaks to prevent erosion and topsoil flushing are in the scope of 2010 reinstatement works.

In the second half of 2009, an Ecological Monitoring survey focused on species diversity and vegetation cover was carried out. As of July 2010, IEC has been provided with species diversity raw data including site records and datasheets covering a total of 111 transects selected in Lots A, B and C. Reporting is underway. The IEC is waiting for the final report.

BIL's Environmental Services Contractor (Dokay) carried out the 2009 Physical Monitoring Report. No significant problems in the ESAs in general are reported. Nevertheless, class 1-2 erosion is ongoing in three of the ESAs (ESA 4, 8 and 37) since the previous monitoring campaign in 2008. Furthermore, signs of erosion were observed this year in three additional ESAs (ESA 1, 24 and 35).

BTC remote sensing analysis provides an effective monitoring tool for controlling erosion and biorestoration and re-vegetation dynamics. The regular use of an integrated remote sensing tool for biorestoration/vegetation and geohazard monitoring purposes should be maintained.

As of July 2010, BTC informed that the following projects on reforestation areas have been developed:

- Lot A: on the edge Cildir Lake: Kars Province, Gulyuzu Village Afforestation Area (Ongoing, started in 2009 and to be completed in 2010);
- Lot B: Sivas Province, Yagdonduran Afforestation Area (Completed, 2009);

- Lot C: Kahramanmaras Esence Golet Afforestation Area (Completed, 2009).

4.9.2 Recommendations

1. IEC reiterates our recommendation to intensify restoration and revegetation efforts in those habitats where natural conditions make the re-growth very slow given that the findings of the 2009 Physical Monitoring campaigns demonstrate that erosion is not an issue in areas with good vegetative cover. Therefore, efforts should be made to improve the vegetation.
2. Consistent with the 2009 Physical Monitoring Report results, IEC recommends that specific actions be taken to restore the erosion features observed at ESAs 1, 4, 8, 24, 35 and 37 and also to prevent any further possible detrimental effects to the ecological equilibrium of the ESAs.

4.10 COMMUNITY LIAISON

4.10.1Observations

In 2008, IEC noted a lack of staff resources and vehicles for Public and Community Relations (PCR) staff restricted their effectiveness to effectively operate in more remote areas. A Level 1 non-compliance was assessed for the failure of the BIL organization to adequately address these known resource shortages. In 2009, IEC observed that the PCR teams have improved their operational capabilities although full-time PCRE presence was not provided in Area 3.

As of July 2010, IEC has observed that vacant positions in PCR Dept. have increased from 2009 as the PCR Chief and 3 PCRE positions for pump stations (PT1, PT3, and PT4) are not covered. BIL indicated that, rather than to appoint additional manpower for those positions, the PCR Dept. is undergoing a complete re-organization, due by the end 2010 (please refer also to Section 4.2.1 Public and Community Relations (PCR) Team).

IEC recognizes that the closure of the pipeline construction phase in the northern area (from Ardahan to Kahramanmaraş region) and the progressive closure of the related complaints/restoration/compensation pending issues may justify a reorganization of the PCR Department and reduces the requirements for community liaison. Nevertheless, information provided to the IEC indicates that the lack of PCR staff at PT1, PT3, and PT4 for 15 days at a time does impact the continuity of community relations and management of community issues such that there are still many unresolved complaints. It is also understood that current resources available to manage community relations are not sufficient, especially with respect to vehicles and this limits the coverage achievable by the PCREs such that community meetings are not organized in most of the villages and are focused only around AGIs. Accordingly, IEC continues the *Level 1 non-compliance, Social Management Plan, Turkey (Commitment ID CH7 S2)* until this situation is resolved.

BIL tracks complaints on the basis of a Reinstatement Complaints Register and Complaint Register. In the first half of 2010, 18 complaints have been received (against 89 complaints recorded in 2009 and 523 in 2008). Most of the complaints refer to payments (including payments to service provider) and reinstatement. As of July 2010 BIL reports a total of 159 complaints are open, 129 of which refer to reinstatement issues and 13 to damage to infrastructure and community assets.

Remedial reinstatement works was carried out by BTC Co to close legitimate reinstatement complaints and minimize the project footprint. As of end of 2009 223 legitimate reinstatement complaints were closed and 102 complaints will be closed after the completion of 2010 remedial reinstatement works.

Concerning PCR activities, IEC has several observations:

- village level information and consultation meeting continued throughout 2009 and 2010. After the local elections held on March 29, 2009, BIL's PCR team held village meetings with newly elected muhtars (village leaders) and local authorities such as Mayors, sub-governors and governors to inform them about BIL and its operations, land-use restrictions, third-party crossings, the complaint mechanism, emergency response etc. Contact numbers of PCREs and also public information booklets were distributed during these meetings. In total 406 community meetings were organized by PCREs in 2009 and 159 meetings up to June 2010. Additional meetings were also organized with other regional/national stakeholders (123 in 2009 and 233 in 2010);
- BIL ROW Monitoring and Maintenance team registers all land use violations and third party crossing issues (including those are caused by land users or owners and local authorities construction activities). BIL reported that during summer periods (both in 2009 and early 2010), PRCEs achieved significant progress on termination of the violations among the pipeline route;
- as of June 2010, BIL reported a total of 455 land use restriction violations, 152 of which are closed, 82 pending and 211 still open. BTC Co awarded a contract to a national company to develop training materials such as films and new brochures to start another round of awareness campaign along the BTC route in the second half of 2010 together with BIL PCREs;
- BIL PCR has a complaints management tracker that keeps the updated information of all complaints received;
- most complaints relating to land repair and compensation for damages associated with illegal taps have already been managed by BIL's ROW Maintenance Team;
- from the information provided in the field, the majority of the complaints received appear to be related to reinstatement issues. BTC will be supporting BIL and its contractor during their field study for closure of reinstatement complaints from construction period;
- second highest number of operational complaints received in 2009 and 2010 were related to compensation payments for camp sites;
- temporary and permanently acquired areas along the ROW were handed back to the original users in 2007, just after completion of reinstatement. BTC identified some outstanding reinstatement items that do require physical work or provision of due diligence documents by the lump sump turnkey agreement (LSTKA) Contractor. These areas were included in the punch list and warranty items submitted to lenders during financial close out. BTC signed a contract and closed all remaining reinstatement issues in Lots A and B in 2009. Each landowner signed Land exit forms. 223 sign-off forms were received for completed reinstatement works (Lots A and B) by the end of 2009 and 102 open complaints (identified in Lot C) are expected to be closed in 2010. Action plan completed for pipeline construction phase complaints in southern area of the pipeline

route (Kahramanmaraş to Adana villages); field study will be started following the completion of tendering process.

4.10.2 Recommendations

1. Although the Level 1 non-compliance, Social Management Plan, Turkey (Commitment ID CH7 S2) is rescinded, the IEC recommends that the reorganization of the PCR Dept. maintain adequate PCR staffing resources at each of the six zones and to keep active the communication liaison established at the local level.
2. In order to assess livelihood and other social evaluation procedures (undertaken by SRAP monitoring panel), BTC Co has hired external consultants to monitor CIP projects in the villages who are also responsible for providing feedback on social concerns raised by villagers and local authorities on monthly basis. BTC has indicated to IEC their opinion that current internal and external monitoring mechanisms are sufficient enough to understand and manage the social issues in the field. IEC recommends that, based on SRAP panel's RAP Close out Audit Report and their future recommendations, BTC re-evaluate the current monitoring regime.

4.11 ENVIRONMENTAL AND SOCIAL INVESTMENT PROGRAMMES

4.11.1 Environmental Investment Programme (EIP)

EIP is conducting an external evaluation audit in order to explore new project opportunities with both existing and new implementing partners (IPs) both in promoting biodiversity conservation and other areas of stakeholder concern. From 2010 onwards, in addition to promoting biodiversity along the pipeline route, EIP aims to extend into other areas of stakeholder concern including national environmental infrastructure, wildlife care and regulator awareness and experience. All ten EIP projects initiated in the construction phase (EIP 1 – 2003/2006) are now complete and eight operations phase (EIP 2) projects ongoing. As of end of 2009, a total of $6.5 million has been expended in Turkey since EIP initiation in 2003. As of July 2010, IEC was informed of the following key EIP initiatives:

- Conservation of endangered plants along the BTC pipeline – the project continues. A pilot garden was allocated and funded by the District Governorship of Cildir, Ardahan and a partnership established with the Cyclamen Society in UK for technical consultancy for rehabilitation and maintenance of the propagation gardens in Baskonus, Kahramanmaras;
- Eastern Mediterranean Marine Wildlife Rehabilitation Centre – although key stakeholders such as universities and the Ministry of Environment and Forest were identified, the project is still in the consultation phase;
- Small investments fund (SIF-II) – provides funds for local conservation efforts and engagement of local stakeholders along the BTC pipeline. The project was finished by the end of April 2009 with project document finalized and approved by the Ministry of Foreign Affairs. A third phase was expected to be launched in early fall, 2010;

- Eksisu Marshes – wetland conservation: a draft Wetland Management Plan was prepared and submitted to the Local Wetlands Committee for comments and revisions. The draft management plan is anticipated to be submitted to the National Wetlands Committee in December 2010, for approval. The plan will secure the sustainable conservation of the area and a smooth exit from the site upon the completion of the project. The project is developed in partnership with DD-Nature Association and the Erzincan Municipality;
- Conservation Investment Priority Analysis for the Central and Southern BTC region: the transfer of all EIP generated data into the national database (Noah's Ark) was completed. The project has led the General Directorate of Forestry (GDF) to appoint a Chief Engineer of Biodiversity to coordinate all biodiversity studies and to conduct forest biodiversity inventories. Priority sites and nature conservation priorities were identified together with the suggested actions to achieve their conservation. Preliminary management and monitoring guidelines are under development and planned to be completed by the end of 2010;
- Implementation of the Yumurtalik Lagoons Management Plan: thanks to the project, 98 local people received career trainings. Major achievements were the opening of the Yumurtalik Lagoons Education and Information Centre and the implementation of the Pasture Rehabilitation and Rehabilitation of Yumurtalik Lagoons projects. After extensive discussions between local stakeholders and state institutions another achievement was the definition of a multiple land use agreement involving agricultural and conservation interests in Yumurtalik;
- Kackar Mountains forest conservation and sustainable rural development project: the project is a continuation of the Lesser Caucasus Forest Gap Analysis and aims to demonstrate ecologically sound community development. In 2009 project activities led to the completion of additional income activities research and non-timber forest products research. Consultation with several local organizations regarding beekeeping lead to a workshop involving approximately 150 local;
- Terrestrial Wildlife Rehabilitation Project: the project, launched in April 2010 with construction foresees to start in August 2010, targets to establish and operate a terrestrial wildlife rehabilitation center. A protocol has been prepared and is in the process of being signed by all parties (Ministry of Environment and Forestry, Uludag University, Ikınci Sans Association, KuzeyDoga Association).

4.11.2 Community Investment and Regional Development Initiative Programmes (CIP and RDI)

BTC continues to implement Community Investment Programme (CIP) and Regional Development Initiative (RDI) as part of its commitment to enhance positive effects of business for project affected communities in Turkey. 2009 was the third year of Phase II CIP Implementation in Turkey. Out of the $2.4 million budget for CIP in 2010, about $2 million have been already committed and allocated. From the information provided:

- each CIP IP developed their 2 year exit strategy for CIP projects based on BTC's strategy document;
- several trainings and technical capacity supports provided to IPs on exit strategy, managing stakeholder relations and ensuring project visibility;
- contractual process for 6 projects was finalized in 1Q 2010 and activities started;

- contract termination with one of the IP realized and exit process on-going. Contracts signed with two IPs to implement projects in the same regions; by Q2 project activities started;
- common meetings and workshops are being held to improve the dialogue and information exchange between the project groups.

Active CIP projects as included in the BTC 2009 annual report and relative budgets for 2010 are:

- Ardahan Sustainable Rural Development Project was implemented by IBC for a 6 months period (until the contract was terminated) and by SURKAL for another 6 months period, in 37 villages with a budget of about $240,000 allocated for 2010;
- Kars Sustainable Rural Development Project implemented by SURKAL in 20 villages with a budget of about $291,000 allocated for 2010;
- Erzurum Sustainable Rural Development Project implemented by Atatürk University in 27 villages with a budget of $251,000 allocated for 2010;
- Erzincan Sustainable Rural Development Project implemented by PAR Consulting in 12 villages with a budget of $210,000 allocated for 2010;
- Sivas Sustainable Rural Development Project implemented by SURKAL in 22 villages with a budget of $308,000 allocated for 2010;
- Kayseri Sustainable Rural development Project implemented by PAR Consulting in 26 villages with a budget of $162,000 allocated for 2010;
- Kahramanmaraş Sustainable Rural Development Project implemented by IBC for a 6 months period (until the contract was terminated) and by PAR Consulting for another 6 months, in 24 villages with a budget of $197,000 allocated for 2010;
- Adana-Osmaniye Sustainable Rural Development Project implemented by PAR Consulting in 21 villages with a budget of $294,000 allocated for 2010.

2009 was also the 3rd year of implementation of Regional Development Initiative (RDI) programme in Turkey aimed at enhancing local economy, employment and Small and Medium Enterprises (SME) development, awareness among other investor's benchmarks. Two projects have been already completed:

- Organic Honey Production Project financed by IFC and BTC and implemented by Temari in Northeast part of Turkey. Temari still continues project activities through its own funds in Ardahan province which indicated the sustainability of the project;
- Supporting Sustainable Livelihoods for Yumurtalık and Gölovası Fishermen Project which resulted in the development of an artificial reef in Yumurtalık Bay, building a scaffold winch for the maintenance of boats and establishment of a fish storing and selling facility. The activities targeting fishermen communities around CMT conducted as a part of Adana-Osmaniye Sustainable Rural Development Project in 2010.

Four projects plus one feasibility project are ongoing:

- Antakya Landfill Facility Capacity Development Project in cooperation with Antakya Municipality and İSTAÇ to develop the capacity of the Municipality and its operating company to construct and manage the landfill in line with the EU standards;

- Employment and Enterprise Development Project based on Inter-sectoral Cooperation-Çukurova Region in cooperation with National Employment and SME Development Agencies – 2nd Phase;
- Credit Guarantee Fund Project for Micro, Small and Medium Scale Enterprises (MSMEs) in the BTC Pipeline Provinces with Credit Guarantee Fund Co.;
- Iskenderun Bay- Industrial Symbiosis Feasibility (IS) Project in cooperation with UNDP Turkey and State Planning Organization. The IS project led to treat the iron slag produced by iron and steel industry in the İskenderun Bay. After a dedicated workshop as part of the project, the option of sending the iron slag produced to a new dedicated facility that will use iron slag as a raw material and produce iron and purified slag. Slag will be sent to cement facilities and iron will be re-used by Yılmazlar and Ekinciler. This new facility applied for the license to the MoEF. Fundraising works are being conducted for the implementation phase of the IS Project (Phase II).

4.12 CULTURAL HERITAGE MANAGEMENT

In June 2009, IEC was informed that the second phase of cultural publications has been halted due to a lawsuit on publication copyright. The situation is unchanged as of July 2010.

New members of the BIL environmental and ROW maintenance team are given training on Cultural Heritage Management Plan commitments through a dedicated section on Cultural Heritage Management that was reported to have been included as part of the Environmental training. BIL has now an archaeologist in the HSE team to support in case of findings.

4.13 HEALTH AND SAFETY

4.13.1 Observations

In past audit reports, IEC has commented on aspects of health and safety during the construction phase, particularly as they related to concerns about community safety issues. Now that the Project has moved to the operational phase, there is much less work-related activity, although travel still represents the highest personal safety risk.

In particular, the increased number of personnel hired for working on the ROW patrolling and maintenance activities and outsourced maintenance and reinstatement activities require that full HSE awareness training is provided to all personnel. BIL continues to provide site-specific and role-specific HSE trainings to all new employees of BIL and subcontractors. In addition, the training given by BIL staff at the different facilities is supplemented by specific training modules provided by staff coming from Ceyhan or external companies specifically hired.

According to the project safety statistics for 2009 included in the 2009 BTC Annual Report for both construction[4] and operations phases, the majority of annual targets and key performance indicators were accomplished without any major incidents (MI) or high potential incidents (HiPo). According to the data provided, as of June 2010, 22 total accidents were recorded with 3 First Aid Injuries (FAI), 21 Near Misses, and 753 between Behavior Observation Safety System (BOSS) and Safety Observation and Conversation

[4] Construction phase concerns the construction activities as part of the DRA Project BTC completed in 2009.

(SOC). Procedures for incidents reporting are in place and maintained through incident notification form. Reports of incidents are collected and processed for project-statistics purposes in Adana and results published into the intranet and the BIL system. With reference to monitoring Occupational Health standards in workplaces, in 2009 IEC observed that major pollutant monitoring system should have been implemented at CMT and fixed facilities by including noise, VOCs/BTEX. During the July 2010 visit IEC was informed that noise monitoring at work locations was performed throughout 2009, high noise work spaces identified, and specific instructions (increased use of hear protecting devices and shift rotation) were given to limit worker exposure to noise. With reference to the issue of how the project is undertaking measures to protect workers and those using accommodation areas at the CMT and fixed facilities, it was reported that H&S reviews of facilities accommodation areas are properly conducted on a yearly basis although no data was provided to the IEC.

4.13.2 Recommendations

1. IEC recommends that BTC and BIL continue to work together to ensure that an adequate safety oversight, supervision and training be provided to all employees and to third party personnel for both fixed facility and pipeline operations.
2. IEC recommends that adequate and regular workplace monitoring systems be implemented for VOCs and BTEX. Additionally, IEC reiterates our request of clarification on how the project is undertaking measures to protect workers and those using accommodation areas at the CMT and fixed facilities.

APPENDIX A

TRIP SUMMARY- 12TH IEC MISSION BY D'APPOLONIA FOR THE BTC PIPELINE PROJECT – JULY 2010

APPENDIX A

TRIP SUMMARY- 12THTH IEC MISSION BY D'APPOLONIA FOR THE BTC PIPELINE PROJECT – JULY 2010

For this mission, three members of the team toured Turkey, Azerbaijan and Georgia. The trip summaries are presented below.

July 11 – Team arrives in Adana by air.

July 12 – Kick-off and E&S meetings at the CMT, presentation on project status from last visit, site visit and operations facility.

July 13 – Fly from Adana to Erzurum: ROW to PT3, visit at DSA1 near PT3, tour of PT3. Overnight on site.

July 14 – visit to ROW PT3 – Erzurum, ROW inspections KPs 484, 480, 457+700, 454+495, 457+442, and steep slopes. Overnight at Erzurum.

July 15 – Erzurum-PT1, ROW visits Lot A ('Syria', Sarikamis, Hanak and other). Overnight at PT1.

July 16 – ROW PT1-Georgian border, PT1 audit, PT1-Border ROW visit (Meri Castle, Posof RvX, ESA1 and other steep/side slopes, cross the border. Overnight at Akhaltsikhe.

July 17 – Review areas with difficult reinstatement and review the status of the overall program to protect Borjomi water. Overnight in Bakuriani.

July 18 – Continue ROW tour and visit to Kodiana Special Projects sites area, Tori – drive to Tbilisi with look at ROW. Visit to Tbilisi waste disposal facility and project landfill. Overnight in Tbilisi.

*July 19 – M*eetings at BTC offices to review status of environmental monitoring programs, in particular stack emissions MOC and operation of landfills. Visit of PSG-1 to review status of oil-water separation system, sewage treatment, CWAA, PSG-1 camp. Overnight in Tbilisi.

July 20 – Fly to Baku, meeting with AZ team, briefings on status of environmental monitoring, in particular stack emissions, EPPD and ROW access, the iris acutiloba status, tour of Serenja hazardous waste storage site. Overnight in Baku.

July 21 – Review condition of ROW in Gobustan Desert area, visit to Sumgait site, close out preparation. Overnight in Baku.

July 22 – Closeout preparation and 3-country closeout meeting (Videocon). In the night team departs.

APPENDIX B

TABLE B-1: NON-COMPLIANCES WITH ESAP

APPENDIX B

Table B-1: Non-Compliances with ESAP – Azerbaijan

Section Ref.	Observation	Non-Compliance	Level	Comments / Recommendations
2.4.1	Stack emissions for NOx non-compliant with ESAP	Emissions Management Plan - BTC Operations – Azerbaijan & Georgia (Commitment ID 1024)	II	Stack emissions testing is ongoing, but an MOC is needed to justify NOx levels or else define an offset program.

Table B-2: Non-Compliances with ESAP – Georgia

Section Ref.	Observation	Non-Compliance	Level	Comments / Recommendations
3.5.1	Stack emissions for NOx non-compliant with ESAP commitments	Emissions Management Plan - BTC Operations – Azerbaijan & Georgia (Commitment ID 1024)	II	Same as for Azerbaijan
3.5.1	Non-compliant discharge of retention pond water into surface water environment	Emissions Management Plan - BTC Operations – Azerbaijan & Georgia (Commitment ID Y9)	I	

Table B-3: Non-Compliances with ESAP – Turkey

Section Ref.	Observation	Non-Compliance	Level	Comments / Recommendations
4.10.1	Failure to implement an adequate PCR program during the Operations Phase	Social Management Plan, Commitment ID CH7 S2	I	IEC believes that the lack of PCR staff at PT1, PT3 and PT4 does impact the continuity of community relations and management of community issues with many unresolved complaints still reported. As a result, IEC maintains the Level 1 non-compliance assigned relative to commitments made in the Social Management Plan, Turkey.