



**BTC Project
Environmental and Social Annual
Report (Operations Phase)
2010**

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ABBREVIATIONS

ADC	-	Agricultural Development Cooperative
Ag	-	Silver
AGI	-	Above Ground Installation
AGT	-	Azerbaijan Georgia Turkey
AKUT-NGO	-	Çukurova University, Search and Rescue Association
Al	-	Aluminum
APA	-	Agency of Protected Areas
As	-	Arsenic
ASDA	-	Ajara Sustainable Development Association
AzSPU	-	Azerbaijan Strategic Performance Unit
bbl	-	Barrel
BIL	-	Botaş International Ltd
BNB	-	See RUDF
BOD	-	Biochemical Oxygen Demand
BOSS	-	Behavioural Observation Safety System
BPEO	-	Best Practicable Environmental Option
BTC	-	Baku-Tbilisi-Ceyhan Pipeline
BTEX	-	Benzene, Toluene, Ethyl Benzene and Xylene
BV	-	Block valve
BWRA	-	Ballast Water Risk Assessment
CARE	-	CARE International (Co-operative for Assistance and Relief Everywhere, Inc) – non-governmental humanitarian organisation
CBO	-	Community Based Organization
CBU	-	Cattle Breeders' Union
CC	-	Consolidation Centres
Cd	-	Cadmium
CDI	-	Community Development Initiative
CEM	-	Continuous Emissions Monitoring
CGF	-	Credit Guarantee Fund Project
CI	-	Continuous Improvement
CIP	-	Community Investment Programme
CITES	-	Convention on International Trade in Endangered Species
CLO	-	Community Liaison Officer
CMT	-	Ceyhan Marine Terminal
CO	-	Carbon Monoxide
CO ₂	-	Carbon dioxide
COD	-	Chemical Oxygen Demand
Cr	-	Chromium
CTU	-	Crude Topping Unit
Cu	-	Copper
CWAA	-	Central Waste Accumulation Area
DAFWC	-	Days Away From Work Cases (Frequency)
dB	-	Decibel
DSA	-	Designated State Authority (Turkey)

E&S	- Environmental and Social
EBRD	- European Bank of Reconstruction and Development
EDDF	- Emergency Drain Down Facility
EGF	- Enclosed Ground Flare
EIA	- Environmental Impact Assessment
EIP	- Environmental Investment Programme
EMS	- Environmental Management System
EPA	- Environmental Protection Agency
EPPD	- Export Pipelines Protection Department
ESA	- Ecologically Sensitive Area
ESAP	- Environmental and Social Action Plan
ESIA	- Environmental and Social Impact Assessment
ESMS	- Environmental and Social Management System
EU	- European Union
FCI	- Facilities Construction and Installation
Fe	- Iron
GABA	- Ganja Agribusiness Association
GCP	- Garadagh Cement Plant
GCT	- Group Crisis Team
GHG	- Greenhouse Gas
GIS	- Geographical Information System
GTA	- Georgian Tourism Association
H&S	- Health and Safety
H1	- First half of year (January – June)
Hg	- Mercury
HGA	- Host Government Agreement
HiPo	- High Potential Incident (frequency)
HSE	- Health, Safety and Environment
HSSE	- Health, Safety, Social and Environment
HT	- Hot-tap
IEC	- Lenders' Independent Environmental Consultant
IED	- Industrial Emissions Directive (2010/75/EU)
IFC	- International Finance Corporation
IGA	- Inter Government Agreement
IMS	- Incident Management System
IMT	- Incident Management Team
IP	- Implementing Partners
IPA	- Important Plant Area
IPPC	- Integrated Pollution Prevention and Control
IPT	- Intermediate Pigging Station, Turkey
ISO	- International Standards Organisation
IUCN	- International Union for Conservation of Nature and Natural Resources
KP	- Kilometre Point
KPI	- Key Performance Indicator

LGA	-	Local Governance Assistance
LLC	-	Limited Liability Company
MDL	-	Method Detection Level
MENR	-	Ministry of Ecology and Natural Resources (of Azerbaijan)
METU	-	Middle East Technical University
MOC	-	Management of Change
MoE	-	Ministry of Environment, Georgia
MoEF	-	Ministry of Environment and Forest
MOL	-	Main Oil Line
MSME	-	Micro, small and medium enterprises
MT	-	Metric ton
NDVI	-	Normalised Difference Vegetation Index
NGO	-	Non-Governmental Organisation
Ni	-	Nickel
NISP	-	National Industrial Symbiosis Programme
NO ₂	-	Nitrogen Dioxide
NOx	-	Nitrogen Oxides
OSGF	-	Open Society - Georgia Foundation
OSR	-	Oil Spill Response
OSRB	-	Oil Spill Response Base
OSRP	-	Oil Spill Response Plan
OWS	-	Oily Water Separators
PA	-	Protected Area
Pb	-	Lead
PCR	-	Public and Community Relations
PCRE	-	Public and Community Relations Experts
PDA	-	Provincial Directorate of Agriculture
pH	-	Potential of Hydrogen
PM	-	Particulate Matter
PSA	-	Pump Station, Azerbaijan
PSG	-	Pump Station, Georgia
PT	-	Pump Station, Turkey
PWHP	-	Primary Withholding Pond
Q1/Q2/Q3/Q4	-	Quarter 1 / Quarter 2 / Quarter 3 / Quarter 4
QC	-	Quality control
RAP	-	Resettlement Action Plan
RBC	-	Rotating Biological Contactor
RCAPOH	-	Regulation on Control of Air Pollution Originated from Heating
RDI	-	Regional Development Initiative
ROW	-	Right of Way
RRT	-	Roles and Responsibilities of Team
RT	-	Running Track
RUDF	-	Rural and Urban Development Foundation (now called BNB)
SCF	-	Secondary Containment Facilities
SCP	-	South Caucasus Pipeline

SDI	-	Sustainable Development Initiative
Se	-	Selenium
SES	-	Seacor Environmental Services
SESMeke	-	Joint Venture between SES and Meke Marine
SI	-	Smithsonian Institution
SIDA	-	Swedish International Development Cooperation Agency
SIF	-	Small Investments Fund
SLAP	-	Supplementary Land Acquisition Programme
SME	-	Small and Medium Enterprises
Sn	-	Tin
SO ₂	-	Sulphur Dioxide
SOC	-	Safety Observation and Conversation
SoLoNOX	-	Solar Turbines Dry Low Emissions Technology
SOx	-	Sulphur Oxides
SPJV	-	Spie Petrofac Joint Venture
SRAP	-	Social and Resettlement Action Plan
STP	-	Sewage Treatment Plant
SWP	-	Storm Water Pond
THC	-	Total Hydrocarbon
TPH	-	Total Petroleum Hydrocarbons
TTGV	-	Turkish Technology Development Foundation
TVA	-	Traffic Vehicle Accident (Rate)
UKDER	-	Ulaş Development Association
UN	-	United Nations
UNDP	-	United Nations Development Programme
USAID	-	United States Agency for International Development
USLE	-	Universal Soil Loss Equation
UV	-	Ultra Violet
VOC	-	Volatile Organic Compound
VPA	-	Vegetable Producers Association
WBH	-	Water Bath Heater
WMIP	-	Waste Management Implementation Plan
WMP	-	Waste Management Plan
WOP	-	Waste Offset Plan
WPP	-	Waste Projects Plan
WPRC	-	Waste Processing and Recycling Centre
WREP	-	Western Route Export Pipeline
WWTP	-	Waste Water Treatment Plant
Zn	-	Zinc

EXECUTIVE SUMMARY

Baku-Tbilisi-Ceyhan Pipeline Co. (hereinafter BTC) and its agents have complied in the development, construction and operation of the BTC Project with the Environmental and Social Action Plan (ESAP), applicable environmental laws and applicable Lender Environmental Policies and Guidelines in all material respects during the period covered by this report.

There were no fines or penalties incurred for environmental or social non-compliances, and no material environmental claims against BTC during 2010.

There was 1 Class III change submitted to Lenders for approval. This related to the temporary of medical waste at the BP Serenja Hazardous Waste Facility in Azerbaijan pending the mobilisation of the approved contractor. There were no Environmental and Social Impact Assessment (ESIA) addenda submitted.

During the year there were two reportable oil spills and no significant health and safety incidents. One oil spill was a result of an illegal tap in Turkey, which resulted in an estimated loss of 44 barrels of crude. The other was a minor spill of 0.06 bbl.

A number of Health, Safety and Environment (HSE) audits and reviews took place during the year.

The 12th post-financial audit by the Lenders' Independent Environmental Consultant (IEC), acting on behalf of BTC Lenders took place in July. One new Level I non-compliance was raised (a non-compliant discharge of retention pond water into surface water environment), 1 Level I non-compliance retained (lack of back-to-back Botaş International Ltd (BIL) community liaison staff in Turkey, Area 3) and an existing Level I non-compliance related to stack emission NO_x levels was upgraded to a Level II). Since the audit the non-compliances related to pond water discharge and NO_x emissions have been closed out.

In March BIL in Turkey were audited by BSI against the environmental management system standard International Standards Organisation (ISO) 14001. There were no major system non-compliances and BIL retained its ISO 14001 certification.

Reports for Azerbaijan and Georgia were received from the Social and Resettlement Action Plan (SRAP) Panel for the RAP Completion Audit quantitative and qualitative surveys that began in 2008. The draft audit report for Turkey is still awaited from the auditors, although the recommendations have been received. BTC has addressed all of the recommendations for all three countries and most issues are now closed.

Emissions monitoring for the operations phase continued and results were generally in compliance. Monitoring of gas turbine exhaust gases showed some exceedances of NO_x levels, believed to be due to the turbines operating at low load conditions. There were a number of cases where monitoring of aqueous effluents indicated that some parameters exceeded project standards. In such cases the effluent was not discharged to the environment but was taken to a treatment plant for final disposal. Overall, however, the management of liquid wastes improved in 2010, including the instillation of a number of new sewage treatment units in all three countries.

In Turkey the contaminated soil (approx. 4,000 m³) arising from the BVT30 incident in 2008 was removed to the Izaydas landfill. Final site clearance and demobilisation was achieved in December 2010.

Environmental and community investment programmes totalling US\$5.6 million for the year continued to benefit communities along the pipeline route.

1 INTRODUCTION

2010 was the fifth year of operating the BTC pipeline.

This BTC Annual Environmental and Social (E&S) Report has been prepared and structured in accordance with the requirements of Annex J of the ESAP governing construction of BTC and Annex H of the ESAP governing the operations phase of BTC. These requirements are reproduced in Appendix 1. It is the seventh Annual E&S Report post-financing and covers the calendar year 2010¹.

2 ESIA's / EIA AND PERMITTING

2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE ESIA'S²

There were no material modifications made to the BTC ESIA's in Azerbaijan, Georgia and Turkey in 2010.

2.2 SUMMARY OF MATERIAL PERMITS ISSUED IN 2010

2.2.1 Azerbaijan

There were no BTC related environmental permits issued in 2010.

2.2.2 Georgia

The only Statutory Environmental Permit acquired by BTC Georgia in 2010 is as follows:

- Changing mass emissions limits of air emissions for the BTC Georgia Pump Stations 1 and 2.

In 2010 the Emergency Drain Down Facility (EDDF) was granted an Acceptance into Operation (by Ministry of Environment and Natural Resources) satisfying EDDF Environmental permit condition IV-1.

2.2.3 Turkey

During 2010 the following activities took place with respect to material permits in Turkey:

- Non-Hygienic Establishments Operation Permits applications for permanent permits for Adana, Erzincan, Erzurum, Sivas, Ardahan and Kahramanmaraş provinces remained unchanged in 2010. Permits can be obtained after the approval of environment permits and operations certificates for those provinces. This process is ongoing.
- The application for 'Shore Facilities Operating Licence' that was made in 2009 for Ceyhan Marine Terminal (CMT) remained unchanged in 2010. The process is ongoing.
- An Emergency Response Plan related to Law 5312 (Response to Emergencies and Compensation of Losses in case of Pollution of the Marine Environment by Oil and Other Harmful Substances) was submitted to the Ministry of Environment and Forest (MoEF) in 2008. The process is ongoing.
- A Discharge Permit for the new Waste Water Treatment Plant (WWTP) built at the Intermediate Pigging Station, Turkey (IPT1) was received from Provincial Directorate of MoEF in April 2010.

¹ While construction started in 2003-Q2, the financing for the project was finalised in early 2004-Q1.

² Environmental and Social Impact Assessment. Note that in Turkey the formal terminology is EIA (Environmental Impact Assessment).

2.3 UPDATE ON STATUS OF PROJECT SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIA'S OR PERMITS

A summary of country-specific activities relating to ongoing studies or surveys as required under the ESIA's or permits is given below. Studies or surveys noted as completed in the 2009 Annual report are not shown.

2.3.1 Azerbaijan

The only 'Additional ESIA Study and Survey' as specified in the Operations ESAP relates to a groundwater monitoring programme.

Study/Survey:	Expected Timing:
Groundwater Monitoring Programme	Monitor water level and quality: Ongoing

Ref: 2004-Q1 (p5-3); 2004-Q2 (p3-3); 2004-Q3 (p3-2); 2004-Q4 (p3-2); 2005-Q1 (p3-2); 2005-Q2 (p3-2); 2005-Q3 (p3-2); 2005-Q4 (p3-1), 2006-H1 (p3-1), 2007 (p4); 2008 (p4); 2009 (p3)

Groundwater monitoring was carried out according to the ESAP requirements in May 2009 and November 2010. A summary of results is given in Section 4.2.1.5 and the data sheets are presented in Appendix 2.1.e.

Completion Status: ONGOING

In the Construction ESAP there was a requirement to translocate *Iris acutiloba* off the Right of Way (ROW) prior to construction. This requirement was fulfilled, and monitoring of the success of the relocation programme continued during 2010. An Offset Programme will be developed to compensate for Irises that did not survive. In addition, Irises from Garadagh Cement Plant (GCP) that would otherwise have been destroyed due to a development project were translocated to ROW between 22nd November, 2010 and 13th December, 2010. A total of 11,787 Irises were planted at BTC Kilometre Points (KPs) 7, 11.8, 24.1, 25 and 26. Annual monitoring of these Irises will be conducted for 5 years to verify survival rates.

The Cultural Heritage programme Phase V (Analysis and Reporting) was ongoing during 2010.

A summary of the results of both these programmes is given below:

Study/Survey:	Expected Timing:
<i>Iris acutiloba</i> Monitoring Programme	Monitoring: Ongoing

Ref: 2004-Q1 (p5-2); 2004-Q2 (p3-2); 2004-Q3 (p3-1); 2004-Q4 (p3-2); 2005-Q1 (p3-1); 2005-Q2 (p3-2); 2005-Q3 (p3-1); 2005-Q4 (p3-1), 2006-H1 (p3-1), 2007 (p5); 2008 (p4); 2009 (p3)

A total of 32,905 rhizomes were planted along BTC/SCP ROW in 2006 during ROW final reinstatement: 8,105 off ROW and 24,800 on ROW. Monitoring and evaluation began in 2008 and was continued in 2010.

The monitoring results for 2010 identified 2,645 individual rhizomes off the ROW and 671 individuals on ROW. The continuing reduction in numbers of translocated *Iris acutiloba* is believed to be a result of intensive grazing and low nutritional resources in the rhizomes. Due to the low survival rate the next round of monitoring will be postponed until 2012.

However, rare species monitoring will be carried out in 2011 at 5 permanent quadrants located along Gobustan ROW, where 11,780 *Iris acutiloba* individuals from the GCP extraction site were transplanted in late 2010. The results will be reported to GCP management and Ministry of Ecology and Natural Resources (MENR) of Azerbaijan over the next 5 years.

Completion Status: ONGOING

Study/Survey:Cultural Heritage – Archaeology Phase V
(Analysis and Reporting)**Expected Timing:**

Phase V: Ongoing

Ref: 2004-Q3 (p3-2); 2004-Q4 (p3-2); 2005-Q1 (p3-2), 2005-Q2 (p3-2); 2005-Q3 (p3-2); 2005-Q4 (p3-1); 2006-H1 (p3-1), 2007 (p5); 2008 (p5)

The BTC/SCP Cultural Heritage Programme in Azerbaijan is implemented by the Smithsonian Institution (SI). This 3 year programme started in 2008 and includes both capacity building element and public outreach components. BP and its co-venturers have allocated US\$1,078,000 to support the programme.

The following milestones were achieved during 2010:

- In December 2010, the SI published 1000 copies of “Past and Future Heritage in the Pipelines Corridor”, which describes the cultural heritage programme and artefacts discovered along the BTC/SCP route. It is available in English-Azerbaijani languages;
- In April 2010, the web site describing the BTC/SCP Cultural Heritage Programme and the artefacts discovered along the BTC/SCP pipelines was launched. It also forms part of SI website: <http://www.agt.si.edu/>;
- In April 2010, the SI conducted a two-day cultural heritage workshop for Azerbaijani and Georgian scientists/archaeologists who participated in the BTC/SCP pipelines archaeological programme. The workshop focused on assessment, collection and conservation techniques. It was led by a group of international experts including scientists from SI, the Arizona University and the National Museum of Berlin. Forty-three representatives of the Gobustan State Historical-Artistic Reserve, the Azerbaijan Institute of Archaeology and the Georgian National Museum participated in the event.
- In 2010 the archaeological exhibition opened at the Caspian Energy Centre and attracted 4395 visitors.

Completion Status: ONGOING

2.3.2 Georgia

The following ‘Additional ESIA Studies and Surveys’, as specified in the Operations ESAP were conducted in Georgia during 2010.

Study/Survey:Kodiana Special Projects and Other Legacy
Projects**Expected Timing: 2010-12**

Monitoring: Projects / Operations

Ref: 2006-H1 (p3-2); 2007 (p-6); 2008 (p-5); 2009 (p-4).

Biorestitution of Kodiana access road (KPs 181-183), completed in 2009 with the planting of 9000 tree and shrubs representing five indigenous plant species was followed by survivability monitoring survey and consequent compensative planting in accordance with the planned maintenance schedule.

Reinstatement and official hand over of the Andeziti Pipe Yard (Spie Petrofac Joint Venture [SPJV]) to Landowners was completed. Reinstatement/reimbursement and hand over of Akhaltsikhe camp to Landowners is planned to be completed 2011-Q3.

Construction of the Secondary Containment Facilities (SCF) was completed. Landscaping commitments associated with the EDDF and SCFs have been implemented, including remaining grass seeding and tree planting (5310 trees and shrubs) in 2010-Q3; Vegetation regrowth at the Tori SCF site will continue to be monitored; additional planting will take place as necessary to facilitate stable ground conditions.

The status of other activities is as follows:

- Installation of sewage treatment plants at Borjomi Oil Spill Response Base (OSRB) is complete;
 - Civil and mechanical works at PSG1 STP are 100% complete; electrical works are planned to be complete at the end of 2011-Q2.
 - Modification of Retention Ponds Bottom (PSG1 & PSG2) was completed in 2010-Q4.
 - Construction of SCP Area 80 permanent camp is due to be completed at the beginning of 2011-Q2.
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- Design work completed for PSG2 Accommodation Addition and construction is planned to commence in the middle of 2011-Q2.
- Oily Water Separators (OWS) modifications at PSG1 and PSG2 is ongoing and due to be completed in 2011-Q4. At the same time construction is planned to commence for PSG1 warehouse by 2011-Q3.

Completion Status: ONGOING

2.3.3 Turkey

The 'Additional ESIA Studies and Surveys' as specified in the Operations ESAP for Turkey are summarised below.

Study/Survey:	Expected Timing:
Landscape Plans and Monitoring for Facilities	Construction and Operations
Ref: 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-4); 2005-Q4 (p3-4); 2006 Annual (p6); 2007 Annual (p7); 2008 Annual (p16); 2009 Annual (p4)	

The status of landscaping, which was implemented at all facilities by BTC Co. and handed over to BIL in late 2008, is being monitored during ad-hoc site visits and annual compliance audits. In parallel, BIL's ROW Monitoring and Maintenance and site teams monitor the condition of landscaping and take necessary action when required.

Completion Status: MONITORING ONGOING

Study/Survey:	Expected Timing:
Marine Turtle Survey	Operations
Ref: 2004-Q1 (p5-10); 2004-Q2 (p3-8); 2004-Q3 (p3-6); 2004-Q4 (p3-5); 2005-Q1 (p3-5); 2005-Q2 (p3-6); 2005-Q3 (p3-6); 2005-Q4 (p3-5); 2006-H1 (p3-4); 2006 Annual (p7-8); 2007 (p7); 2008 (p16); 2009 (p5)	

The annual marine turtle survey was conducted from June to September 2010. As in previous surveys, the survey was carried out at Sugoza, Akkum, Botaş and Hollanda beaches which are in the vicinity of CMT jetty. In 2010, a total of 104 *Chelonia mydas* (Green Turtle) nests and 1 *Caretta caretta* (Loggerhead Turtle) nest were observed in the study area.

A summary of the number of nests observed this year compared with previous years is as follows:

	2002	2003	2004	2005	2006	2007	2008	2009	2010
<i>Chelonia mydas</i> (Green Turtle)	42	44	213	29	198	57	160	163	104
<i>Caretta caretta</i> (Loggerhead Turtle)	18	3	3	7	0	1	1	4	1

The number of Green Turtle nests observed in 2010 is higher than the findings of 2002, 2003, 2005 and 2007 but lower than or close to those of the 2004, 2006, 2008 and 2009 nesting seasons. There are inter-annual fluctuations in the nest numbers of Green Turtles between 2002 and 2010 while the number of Loggerhead Turtle nests is too small to draw any firm conclusions regarding trends, particularly given that past experience has shown that year-to-year fluctuations can occur.

As with previous surveys, hatchling success was quite high and predation was lower than previous years because of effective caging.

Generally, neither any significant death of the hatchlings due to scorching effect of the sun nor any significant disorientation (i.e. disorientation due to light sources at night) was determined along the studied beaches.

A summary of the hatchling success observed this year compared to previous years is as follows:

Beaches	2007	2008	2009	2010
Sugoza	80.9%	87.2%	76.5%	86.6%
Akkum	84.5%	86.6%	77.1%	87.9%
Botaş	44.4%	60.7%	83.9%	91.2%
Hollanda	44.4%	77.0%	80.5%	96.0%
Overall	82.3%	82.9%	77.8%	89.1%

Completion Status: ONGOING

2.4 OTHER STUDIES

2.4.1 Azerbaijan

Study/Survey:

Vegetation Cover: April 2010

Expected Timing:

Operations

In 2010, biorestitution monitoring includes 4 years of percentage cover values, and 2 years of species-diversity data, collected from 55 transects located along the length of the ROW. The results of the 4 years of the biorestitution monitoring programme can be summarised as follows:

Data indicate that over half of the ROW transects have vegetation cover equal to or greater 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 in vegetation cover over the 4 years of monitoring.

There are noticeable differences in establishment of vegetation cover between different habitats. Establishment of vegetation cover has been particularly slow in habitats where high temperatures, high soil salinity and high wind speeds are likely to have a major impact on seedling establishment and survival.

Species-commonality between the ROW and adjacent, undisturbed areas is low (mostly around 30%, although some are much lower), and in most habitats there was only a small increase in the commonality recorded between 2007 and 2009.

In general, the vegetation recovery on the ROW is following the pattern that would be expected. Vegetation cover establishes relatively quickly as species colonise the ROW, but this mostly comprises ruderal species that are not characteristic of the adjacent, undisturbed vegetation.

Analysis of frequency data for selected species shows that, in general, there is an increase in characteristic perennial species, and a decrease in ruderal species on the ROW.

Three transects in the Sangachal area have remained stable over the 4 years of monitoring, with an average of 5% cover in every year, and they are unlikely to show an increasing trend in the near future.

Completion Status: ONGOING

Study/Survey:

BTC/SCP Biorestitution (Seeding)

Expected Timing:

Monitoring: Ongoing

The short to medium term objective of the biorestitution programme is to establish sufficient vegetation cover to meet or exceed the requirements of Erosion Class 3. The longer term objective is to create stable landform conditions that in turn are conducive to the re-establishment of the original mix of plant species.

To assist this natural process, ephemeral and perennial provenance seeds have been collected and broadcasted on the ROW in selected areas (e.g., Ecologically Sensitive Areas [ESA] and areas prone to erosion).

Approximately 488 kg of perennial and 202 kg of ephemeral seeds were broadcast along Gobustan and Samukh ESAs in spring 2010.

191 kg *Salsola nodulsa* and 122.5 kg *Artemisia lerchiana* perennial species seeds were collected in 2010 and stored at seeds storage for sowing the erodible and poor vegetation covered areas in 2011.

The methodology of 2011 seeds sowing activity will be different to previous years. A trial project will be implemented by sowing of the collected aforementioned seeds directly into a nursery bed, established in a native habitat; and then the seedlings will be translocated to the area identified for biorestitution within the ROW in September-October 2011.

Completion Status: ONGOING

Study/Survey:

Landscape Monitoring of FCI-ROW

Expected Timing:

Monitoring: Ongoing

BTC committed to undertake landscape monitoring along Facilities Construction and installation (FCI) ROW. The programme and corresponding methodology aims to record changes to landscape over time in order to either demonstrate progress in restoring the landscape, or areas where additional intervention is necessary.

Monitoring from 90 vantage points began in 2005 and continues annually. The vantage points were selected to represent a cross-section of landscapes and features and include: river and stream crossings; slopes and gullies liable to erosion; areas with high visibility to communities; borrow pits; permanent Above Ground Installations (AGIs), and Block Valves/Control Valves (BVs/CVs); temporary AGIs' areas; and road crossings within environmentally or socially sensitive areas. Areas that are fully restored or served by local municipality and cultivated for agricultural purposes for more than 3 years have been removed from the monitoring programme and will not be monitored in 2011.

Completion Status: ONGOING

Study/Survey:

BTC/SCP running track reinstatement

Expected Timing:

Monitoring: Ongoing

One of the key commitments of the BTC ESIA and the Resettlement Action Plan (RAP) is to ensure that areas disturbed during construction are returned their pre-disturbed conditions.

Since this commitment was made, a Government of Azerbaijan Decree (2003) resulted in the formation of the Export Pipelines Protection Department (EPPD). The EPPD provides security for the WREP, BTC and SCP pipelines in Azerbaijan. It is a state military organisation and is not controlled by BP.

Since 2005, EPPD has patrolled the BTC and SCP ROW by vehicle on a 24 hour basis. These activities have the effect of compacting soils and encouraging the creation of running tracks along the pipeline ROWs. Both outcomes effectively prevent BTC from fulfilling many of its reinstatement and biorestitution commitments.

Accordingly BTC has had extensive discussions with the EPPD with the objective of reducing patrol traffic on the ROW and thus minimizing impacts. As a result of these discussions it was agreed that, at several locations, EPPD would use alternative roads for routine patrolling and these locations would be reinstated by BTC. The results of monitoring showed that 13 sections could be reinstated. A trial project was carried out in March/April 2010 in which 15 m of track was reinstated at the entrance and exit of each section. It was confirmed that EPPD were no longer using 5 of these sections. These were therefore fully reinstated in Autumn 2010. An area of 2968 m by 4- 5 m was restored to the off ROW condition. The reinstatement results were presented to EPPD branches at regions in December 2010 to ensure that they no longer use these reinstated sections. BTC is planning to reinstate the remaining 8 sections in spring/autumn 2011. The next step is to agree with EPPD further RT sections for permanently reinstatement.

Completion Status: ONGOING

2.4.2 Georgia

There were 9 'Other' studies/surveys carried out in Georgia in 2010:

Study/Survey:

Vegetation Cover Recovery and Potential Erosion Risk Assessment within BTC & SCP ROW, 2010

Expected Timing:

Operations

Vegetation cover regrowth trends and erosion risk potential are being monitored annually. The main findings of the vegetation cover analysis and erosion risk assessment within the BTC and SCP ROWs, based on the data collected over the 4 years of observation (2007-2010), are summarized below.

All habitats³(based on 100 m long ROW sections⁴):

- Vegetation cover ratio of 70-100% was calculated for 55% of the ROW sections, for which Normalised Difference Vegetation Index (NDVI) was acquired for in 2010. The vegetation cover ratio exceeded 100% at 29% of the 100 m sections (i.e., vegetation cover value within the ROW exceeded the same parameter off the ROW). Regression in the ratio of vegetation cover occurred in 13.2% of the 100 m ROW sections between 2010 and 2007.
- In 2007 8.5ha of disturbed areas (representing all habitats) had vegetation cover in the range 0-10%. In 2008 vegetation cover of 0-10% was observed in 12.3ha, while in 2009, the area of such sections reached almost 16ha; in 2010 the total area of such sections was substantially lower and comprised approximately 3ha. Total area with vegetation cover above 70% reached 166ha while total area of the ROW sections with vegetation cover below 70% comprised 108ha.

Erosion Potential Assessment Using GIS-Based Universal Soil Loss Equation (USLE)

Erosion potential assessment was conducted based on the methodology detailed in the report "Vegetation Cover Recovery Trend & Potential Erosion Performance Analyses by Satellite Imagery" produced by BTC Co.

Desktop USLE evaluation shows that, in 2010, 99.8% of the ROW sections met the biorecovery target achieving Erosion Class 3 or better along the ROW. Areas assessed as being Erosion Class 4 or greater comprise only 0.2% of the 100 m ROW sections for which the NDVI was acquired in 2010.

The next round of vegetation cover, species diversity and erosion potential assessment monitoring is scheduled to commence in April 2011.

Study/Survey:

Bat Mitigation Pilot Project

Expected Timing:

2008-2011

Progress:

The 2010 fieldwork involved 2 activities: monitoring colonization of artificial shelters by bats; and shelter cleanup. The 2010 surveys showed that although 2 shelters were destroyed, 9 were found to be occupied by bats, which comprises 20% of the total number of the installed shelters. These findings show that the pilot project is returning promising results, given that available literature suggests approximately 30-33% of the artificial bat boxes may become colonized. The remaining 28 boxes were inhabited by various animals including insects (butterflies, wasps, bees and spiders), birds, mice and dormice.

Completion Status: ONGOING

Study/Survey:

Rare floral species management programme

Expected Timing:

Operations

Progress:

The main objective of the rare species monitoring programme was to measure the survival rates of translocated species against the objective of re-establishing a minimum of 75% of the original population within the areas designated for translocation. The above commitment has been achieved in case of 8 species out of 11. No individuals of *Gentiana angulosa* (2 populations) and *Orchis coriophora* were recorded on the reintroduction sites.

As was the case in 2009, in 2010, no individuals of *Gentiana angulosa* were recorded in flowers or fruits in both populations on Tskratskaro Descent and Kodiana Pass. Both locations are characterised by extreme environmental conditions and this permanent abiotic stress may have caused failure in adaptation of this species. At present a separate project involving propagation of the Gentian from seeds has commenced aiming at compensation of Gentian population at above locations.

No individuals of *Orchis coriophora* were recorded on the reintroduction site during the field studies. This could be partly explained by the fact that only 3 specimens were reintroduced back to their original habitat and eradication of even a single individual largely affects and reduces the value of vitality and fertility index. Statistical analysis revealed a statistically

³ Excluding agricultural land.

⁴ In total, NDVI for 411 of the 100 m long sections (i.e. 41 km length of the entire ROW) was acquired in 2010.

significant change in total number of individuals in permanent plots and study areas. Considerable reduction in abundance has been recorded for *Dactylorhiza urvilleana* (populations at KP 96) and *Dactylorhiza euxina*.

Surveys to assess survivability rates will continue to be undertaken in 2011.

Completion Status: ONGOING

Study/Survey:

Control of Invasive Common Ragweed
Ambrosia Artemisifolia and Survey of
Alien/invasive Species along BTC/SCP ROW

Expected Timing:

Operations

Progress:

Mechanical control measures of common ragweed were developed for short-term interventions by specifically investigating the effect of the timing of the intervention on the performance of both ragweed and its accompanying vegetation. Cuttings were performed at 2 different dates and sites in the Tetrtskaro and Akhaltsikhe districts, in differing climatic conditions. Experiments clearly showed that the later cutting date (at the time of ragweed flowering) in mid September, as compared to cutting in mid August, resulted in greater suppression of ragweed and this effect was especially evident at the former arable site with a cover reduction from 40% (control) to less than 3% (late cutting).

It was proposed to re-visit the sites in spring and summer 2011 to assess longer-term effects of these treatments, and to repeat the late cutting treatment.

A walkover survey of the BTC/SCP ROW, conducted in 2010, revealed the presence of populations of 8 alien species on the ROW. Out of the 8 species identified, 2 (*Ambrosia artemisiifolia* and *Robinia pseudoacacia*) are invasive taxa. The majority of alien species are naturalized annuals; high proportion of annual aliens in certain areas of the ROW should not be regarded as a threat to local biodiversity as at later stages they will be gradually replaced with native perennials. Further monitoring is recommended to identify trends in the populations of invasive species.

Completion Status: ONGOING

Study/Survey:

Landscaping projects around PSG1&2

Expected Timing:

Operations

Progress:

The 2009 Landscaping project outcomes and mitigation activities included the planting of approximately 5ha of land adjacent to BTC pipeline pump station (PSG2, located in Tetrtskaro administrative district) in the mid-mountain zone in fall 2009. This was followed up with regular maintenance applied to the plantation in appropriate seasons. In September 2010 the plantation survival / mortality rate was assessed by a third party consultancy and various damaging factors / causes were identified. All failed and missing saplings identified during the assessment have been replaced with new stock. Firmness of plant supporting stakes has been checked and failed stakes replaced.

Completion Status: ONGOING

Study/Survey:

Assessment of Survival of Trees and Shrubs
Planted at PSG1, PSG2 and along Kodiana
Access Road

Expected Timing:

Operations

Progress:

Monitoring of the survival rate trees and shrubs planted at PSG1, PSG2 and along Kodiana access road was carried out in September, 2010. As a result, different replacement planting strategies are proposed for areas around the pump stations and the Kodiana access road, subject to gradual implementation in the following monitoring years.

Completion Status: ONGOING

Study/Survey: Propagation of Fritillary and Gentian by Seeds and Reintroduction to Original Habitat	Expected Timing: 3-year project (2010-2012)
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Progress:

The monitoring surveys of rare species, conducted in 2009, identified the absence of gentian (*Gentiana angulosa*) populations at Tskhratskaro (KP 176) and Kodiana (KP 193) passes. Both populations were reintroduced back to their original habitats upon completion of the ROW reinstatement. Several thousand of the gentian individuals were planted in these areas, however, their adaptation seems to have failed.

BP Georgia has implemented a rare species restoration programme aimed at propagation and subsequent reintroduction into original habitats of fritillary and gentian.

In summer/autumn 2010 all collected seeds underwent adequate treatments; during early March 2001 these seeds will be sown in a previously prepared soil mixture at a greenhouse. In warmer months (from the end of March to the first decade of April) all seedlings established from pre-treated seeds will be moved outdoors.

Completion Status: ONGOING

Study/Survey: Revegetation of EDDF and SCF Sites	Expected Timing: Operations
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Progress:

The project ESIA requires the development of a revegetation plan for the Emergency Drain Down Facility (EDDF) and Secondary Containment Facility (SCF) areas where existing vegetation had been removed. The key objective of the plan was to re-establish the original plant communities around the target sites in order to restore ecological balance and blend the artificially created landscapes with the local environment. During September and early October planting schemes were prepared for each of the following sites:

- Tskhratskaro SCF site (Andeziti);
- Kumiska 1 and 2;
- Oshora 1 and 2;
- EDDF temporary site; and
- EDDF staging area 1.

Through these the landscaping commitments associated with the EDDF and SCFs have been implemented, including remaining grass seeding and tree planting (5310 trees and shrubs) in 2010-Q3. To achieve maximum potential for planted stock survivability maintenance programs were also drafted.

Completion Status: ONGOING

Study/Survey: Weed management in BTC/SCP ROW	Expected Timing: Operations
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Progress:

As a part of the ESAP commitments, visual inspections for weeds and alien species has been conducted along the BTC/SCP ROW as part of the general biorecovery monitoring programme.

Weeds species, which have proved to be a problem in monitoring areas, were removed through mechanical cutting as they are considered to be natural impediment to seasonal seed spread.

Completion Status: ONGOING

Study/Survey: Landscape photo survey along BTC/SCP ROW	Expected Timing: Operations
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Progress:

Monitoring of the recovery of landscape features has been conducted along BTC/SCP ROW with revised scope since 2008. In accordance with ESAP requirement 5.3.7, time tracking using a photographic record from standard vantage points, has been implemented.

The photographic record was developed for a range of landscape types such as agricultural, forest, desert/semi desert, grasslands, steppe, scrub/woodland, wetland, etc. in order to capture changes over time. Determined vantage points were later uploaded into a GIS system representing ROW restoration reliable track record.

2010 photo survey (with scope revised in 2008) proved a necessity for reconsideration of the 121 vantage points consisting existed scope based on the vivid improvement in reinstatement quality and time analysis.

Completion Status: ONGOING

2.4.3 Turkey

Ten other studies were carried out during 2010 in Turkey. Details are as follows:

Study/Survey: Ecological Monitoring (Vegetation Cover)	Expected Timing: Operations
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Ref: None

Ecological Monitoring consists of 2 components; monitoring of vegetation cover and monitoring of species diversity. The survey is required to be undertaken annually for vegetation cover monitoring and biannually for combined monitoring (species diversity & vegetation cover). The 2010 Ecological Monitoring consisted of vegetation cover monitoring only, and this was carried out in July.

It has been observed that the primer and invasive plants have gradually recolonised the ROW and succession follows an evolutionary trend. This is secondary succession and sub climatic or climatic vegetation (final/stable vegetation) would be attained by the restoration of eroded areas. Since climax process is affected by climate, edaphic factors, topography, etc., the areas along the route would reach climax state at different times. The ROW is in a good state in general. According to survey results, in areas that have attained sub climatic and climatic vegetation, the nature would have completely repaired the damage and restored the area to its original state.

Completion Status: ONGOING

Study/Survey: Marine Sediment Survey	Expected Timing: Operations
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Ref: 2006 Annual (p9-10); 2007 Annual (p11); 2008 Annual (p21); 2009 Annual (p22)

The annual marine sediment survey was conducted in August 2010.

The majority of the survey area is covered with muddy intertidal sediments. The sea bed is mainly composed of muddy formations such as silty sand and clay with very small grain size. This kind of habitat has low productivity and cannot support a healthy benthic life.

Sediment grain size analysis shows that sediments change from fine sand to silty clay from coast line to offshore stations.

The study area was colonized mainly by polychaetous annelids. These are often used as pollution indicators as they can tolerate differencing amounts of organic materials in the sediments.

Concentrations for Mercury (Hg), Cadmium (Cd), Lead (Pb), and Zinc (Zn) in all of the sediment samples were below the established international and national guideline values.

Tin (Sn), Copper (Cu) and Iron (Fe) concentrations of sediment samples were above some of the international guideline values. These concentrations might be attributed to the existence of industrial facilities, such as steel and fertilizer factories, at the east of the BTC Jetty in Iskenderun Gulf.

Hg, Aluminum (Al), Cu, Cd, Zn concentrations were unchanged from 2005 to 2009 levels whilst Pb and Chromium (Cr) concentrations decreased and Fe concentrations increased at all stations.

Total Petroleum Hydrocarbons (TPH) concentrations in the survey area were below 10µg/g, which is lower than the other reference areas in the Mediterranean (Rhône River, France (25-170µg/g) and Egyptian Coast (50µg/g)).

The organic matter contents of sediments were higher than the 2009 results. This may be linked to changing grain size, distribution.

Completion Status: ONGOING

Study/Survey:

Coastal Processes Survey

Ref: 2007 Annual (p13); 2008 Annual (p23); 2009 Annual (p23)

The coastal processes survey was carried out between December 2009 and January 2010.

The monitoring works for coastal processes are carried out at both macro and micro level. Macro-level studies are based on analysis of the aerial photographs and topographic maps of the survey area between 1953 and 2002. Micro-level studies consist of 30 profile-based bathymetric measurements along the survey area and water depths along each profile starting from the coast line extending to a depth of 5 m. Changes in the sea bottom were evaluated by bathymetric measurements at the 30 profiles. Along with coastal monitoring works, wind climate studies are carried out. In view of macro and micro-level studies and prevailing winds, sediment accretion effect is expected South-West of the BTC jetty. Key observations are as follows:

- The January 2010 study indicates that there is no significant effect of BTC Jetty on the natural coastal development pattern of the survey area in parallel to the previous studies.
- No impacts observed on the existing benthic and nektonic communities.
- The effect of Jetty is observed as sediment accretion at the SW side of connection point to the shore. This particular sediment accretion at the SW part of the Jetty might contribute to the formation of a nesting area for the marine turtles since the subject locality is a controlled and protected area. No impacts are expected on the existing benthic and nektonic communities.
- The summer houses along the coastline belonging to Gölovası Village are the closest settlements to the BTC Jetty. Since the sediment accretion concerns only a very limited area, no significant impacts are expected with respect to nearby settlements as confirmed by the profile measurements.

Completion Status: ONGOING

Study/Survey:

Right of Way (ROW) Physical Monitoring

Expected Timing:

Operations

Ref: 2009 Annual (p23)

Physical monitoring of the ROW is conducted on a yearly basis. Four monitoring programmes have been completed to date: in 2007 (May and June), 2008 (May and June), 2009 (June and July) and 2010 (June).

The scope includes an assessment of erosion, landscape restoration, oil contamination and ROW access, with a particular focus on priority areas such as archaeological sites, river crossings, ESAs, illegal tap locations as well as side and steep slopes.

37 archaeological sites were inspected. All archaeological sites were found to be in good condition and no problems exist in any of the sites in terms of erosion, landscape or vandalism.

50 ESAs were covered within the scope of 2010 monitoring programme. The findings indicate that ESAs are in good condition in general and there are not any significant problems. The only problematic area recorded was at ESA 48 due to the fact that some part of the ESA intersected by the old Osmaniye-Kadirli Road was damaged due to road rehabilitation works.

74 river crossings were inspected as part of the 2010 monitoring programme. Assessments were made in these locations with respect to the condition of rip-raps and gabions, signs of contamination on the water bodies (oil spills, sediments etc.) and marks of erosion on the banks of water bodies. While the majority of river crossings are in good condition, deformations on rip-rap and erosion (in about 30% of the locations visited) represented ongoing concern.

18 illegal tap locations were visited. In general, the visited illegal tap locations were in safe condition and no signs of oil contamination were identified since the previous monitoring campaign of 2009.

273 slope locations (69 in Lot A, 131 in Lot B and 73 in Lot C) were covered during the 2010 monitoring programme. About 87% of the monitored slopes were found to be in a good state. For the remaining 50%, erosion was a prevailing concern.

Completion Status: ONGOING

Study/Survey:

Waste Water Feasibility Survey

Expected Timing:

Operations

Ref: 2007 Annual (p12); 2008 Annual (p22); 2009 Annual (p22)

Construction of the new WWTPs was finalized at the Pump Stations PT1 and PT3. In addition, provision of a permanent power supply to WWTP areas was completed safely and as per the plan. Both plants have been running compliant with the Project discharge standards. The handover process to BIL is ongoing. Monthly monitoring of plants was included into BIL's Environmental Monitoring Programme.

There have been 3 additional reviews related to BTC facilities waste water systems:

- BTC Co. contractor to conduct water and gravel sampling and monitoring from both Primary Withholding Pond (PWHP) and the Storm Water Pond (SWP) at all facilities (in total 12 ponds) to understand the characteristic of the water stored and define any existing contamination that would assist decision-making during any future enhancements related to ponds.
- BTC Co. contractor conducted a monitoring programme for the existing WWTPs at PT2 and PT4 in order to identify the waste water influent and effluent quality, to measure the flow to existing system which will be used during the upcoming scoping works for waste water related enhancements at those facilities.
- BTC Co. contractor conducted a trend analysis study for the existing aqueous discharges, monitoring data between August 2009 and August 2010, which would assist on decision-making during any future enhancements related to ponds at PTs and the CMT and to generate waste water characteristics data to inform the design process of the new WWTPs. The study only focused on the relationship between the data rather than discussing compliance.

The results of all studies will be used to help determine how the performance of the waste water systems can be improved.

Completion Status: ONGOING

Study/Survey:

Ballast Water Management Study

Expected Timing:

Operations

Ref: 2007 Annual (p10-11); 2008 Annual (p22); 2009 Annual (p23)

Three different Ballast Water Risk Assessment (BWRA) studies were undertaken for the CMT by Tübitak MAM (Marmara Research Center) in order to help calculate the relative overall risk of introducing a harmful alien species to İskenderun Bay. The first BWRA covered the period between 4th June 2006 and 28th May 2007 and included 54 source ports (source port is the port that a tanker takes its ballast water before its journey). The second covered a 2 year period, between 4th June 2006 and 2nd November 2008 and included 102 source ports. The last study covered a 4 year period, between 4th June 2006 and 2nd June 2010 and included 133 source ports.

A general comparison of 2007 and 2010 BWRA studies is presented in the table below.

BWRA	Assessment period	No. of visits record	No. of source port	No. of source port in the following risk categories:				
				highest	high	medium	low	lowest
First study (2007)	12 months	164	54	6	8	10	11	19
Second study (2008)	29 months	573	102	13	16	18	22	33
Third study (2010)	47 months	1,126	133	17	20	23	28	45

Tubitak MAM also reviewed the Marine Ecology and Marine Sediment survey results that were conducted by BIL between 2007 and 2009 and incorporated the findings into the BWRA. According to the findings, 63 alien species were identified in the CMT marine area, of which, 17 species were among the '100 Worst Invasive Species' in the Mediterranean. 29 species from 63 alien were not observed during the 2007 survey, although their first records in the Iskenderun Bay were made before 2007. According to literature, the possible introduction vector of the majority of the alien species is thought to be Lessepsian, however, 11 species, observed in the port survey, were introduced by shipping. Of these 11 species, all were first sighted in the Iskenderun Bay before tanker traffic started in the CMT.

Completion Status: ONGOING

Study/Survey:
CMT Volatile Organic Compound Speciation Analysis

Expected Timing:
Operations

Ref: 2009 Annual (p24)

In late 2009, a BTC Co. contractor conducted a Volatile Organic Compound (VOC) emissions assessment at the CMT to:

- Identify the VOC emissions limit that would apply to the Enclosed Ground Flare (EGF);
- Identify and quantify VOC species in the EGF effluent;
- Establish the efficiency of the EGF; and
- Determine whether Continuous Emissions Monitoring (CEM) is required for the EGF.

The study results confirmed that the mass flow rate of emissions was below the regulatory threshold to justify CEM.

The test has also shown that VOC emissions at the EGF are non-detectable and below the limits given in the national regulation.

The review report will be presented to MoEF by BIL during the air emission application process.

Completion Status: COMPLETED

Study/Survey:
Waste Management Best Practicable Option Study

Expected Timing:
Operations

Ref: 2009 Annual (p24)

A Best Practicable Environmental Option (BPEO) for the management of solid wastes arising from BTC operations in Turkey was initiated in 2009 with the development of an implementation plan. After finalizing the audits and BPEO study itself for the selected waste streams, 4 Continuous Improvement (CI) projects were developed

The first two CI projects, on domestic waste, were finalized within the year (Step:7). There have been recommendations for the current case and possible future case. For the future case, among the landfill sites audited, Erzurum and Antakya sites were considered as potential sites for the disposal of domestic wastes. Antakya landfill site was already built as a European Union (EU) compliant site, which was a finalized Regional Development Initiative (RDI) Project of BTC Co. Corporate Social Responsibility (CSR) Team. Erzurum landfill site was not fully compliant with EU Directives. However, this site was re-built to higher standards and may become compliant with some technical support and/or compliance gaps absorbed through a BPEO review.

The results of the 2nd CI project were as follows:

- Saving 61% of total distance driven - in total 61,000 km saved per annum by route optimisation and evaluation of new in-country disposal options;
- Reduced HSE risks due to fewer transport movements
- Saving 56% of total cost (US\$35.600 saved per annum);
- Reduced Greenhouse Gas (GHG) emissions (by 61%);
- Developed operational and technical capacity of local Municipalities; and
- Setting an example on local capability improvement and optimisation for the Region.

An early outcome of the BPEO study for domestic waste was a protocol between Antakya landfill site and BIL. BIL began using the site for disposal of their domestic wastes in Q4, 2010.

The study on hazardous waste which forms the other 2 CI Projects is ongoing (Step:3).

The remaining BPEO studies for the recyclable and reusable wastes will be carried out by BIL.

Completion Status: ONGOING

Study/Survey:

Emergency Units Stack Heights Review

Expected Timing:

Operations

Ref: None

In Q3, a review of BTC facilities emergency units (fire pumps, generators, etc.) stack heights for compliance with the national regulation was conducted. The review showed that no extensions would be needed for those units as the units with their existing heights do not pose any risk to people and environment. The review report will be presented to MoEF by BIL during the air emission application process.

Completion Status: COMPLETED

Study/Survey:

Review of CMT Ambient Air Quality Monitoring Results

Expected Timing:

Operations

Ref: None

In Q3 2010, BTC Co. contractor carried out a review of the CMT ambient air studies starting from 2004 covering a period of almost 6 years monitoring data. The results are as follows:

- Ambient Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) levels are increasing in the project area as more industrial sources are increasing their activity levels without implementing adequate control measures.
- There are unusually high short-term (2-weekly) BTEX measurements which may be due to short-term air pollution episodes. These episodes may be due to short-term releases of pollutants under adverse meteorological conditions. There are no QC measurements/data available to prove or disprove that these high concentrations are due to erroneous measurements.
- Annual average pollutant concentrations are in compliance with the new and old ambient annual (long-term) air quality standards. However, by 2011 Benzene levels may exceed the annual limits as the standards are made more stringent.
- Annual average Toluene, Ethylbenzene, and Xylene concentrations are below the California EPA's Chronic Reference Exposure Level criteria.
- There is an increasing trend in sulphur dioxide (SO₂) levels at CMT-3. This could be due to local sources (i.e. a nearby village) or an elevated source further away. The exact cause is not known at the moment.

Completion Status: COMPLETED

3 CHANGES

As reported in previous Annual Reports, the BTC Project uses a management system process called Management of Change (MOC). Proposed changes with potential associated environmental or social impacts are graded by 3 Classes – I, II or III, as defined in the ESAP. Class III changes are the most significant. Changes are subject to a process of review and approval by BTC, including review and approval by the Lenders for Class III changes. Class I and II changes do not require direct approval by the Lenders, but are assessed as part of the in-country monitoring process by the IEC. The following sections summarise BTC approved changes as recorded during 2010.

3.1 AZERBAIJAN

There were 2 changes in Azerbaijan in 2010.

Asset	Class	Approved Internally	Description of Change
BTC/ SCP Az	I	2010	<p>Sampling Ports on PSA2/PSG1/PSG2 Diesel Generators</p> <p>Change of sampling ports at BTC PSA2 Diesel Generators as required in US EPA guidance (i.e. they are not 8 stack diameters downstream and 2 duct diameters upstream from any flow impedance) is not feasible due to engineering restrictions.</p> <p>Therefore, routine stack Emissions Monitoring at these locations will be carried out by the use of the existing sampling locations as per US EPA second recommended location (i.e. 2 stack diameters downstream and ½ a stack diameter up stream).</p>
BTC/ SCP Az	III	2010	<p>Temporary storage of medical waste pending mobilisation of approved contractor</p> <p>Temporary storage of medical waste at BP Serenja Hazardous Waste Facility in the short term until the selected contractor, Ekol-AA Services Joint Venture, is mobilised and its incinerator operational.</p>

3.2 GEORGIA

There were 5 changes in Georgia in 2010.

Asset	Class	Description of Change
BTC PSG1 & PSG2	I	<p>Diesel Generator Sampling Ports</p> <p>Change of sampling ports at BTC Pump Station, Georgia (PSG) 1 and PSG2 Diesel Generators as required in US EPA guidance is not feasible due to engineering restrictions.</p> <p>Therefore, routine stack Emissions Monitoring at these locations will be carried out by the use of the existing sampling location as per US EPA second recommended location (i.e. 2 stack diameters downstream and ½ a stack diameter up stream).</p>
BTC PSG1 & PSG2	I	<p>Retention Ponds Connection to Reed Beds</p> <p>Connecting of retention ponds to reed beds for further treatments is not necessary as there is no sewage treatment system connected to retention ponds itself.</p> <p>Therefore, keep 2 separate waste stream sources from the BTC PSGs. One as a retention pond for storm water and process areas treated water and the other as a reed bed for treated sewage effluent.</p>

Asset	Class	Description of Change
BTC PSG1 & PSG2	I	Frequency and timing of the effluent discharge monitoring Monitoring of effluent discharge from retention ponds and reed beds to be done on a monthly and quarterly basis as per parameters' monitoring requirements, regardless of the number of discharges. The exception would be during the dry summer season and during winter freeze for retention ponds.
BTC PSG1 & PSG2	I	Heavy metals analyzed from reed bed effluent Due to the type of water being discharged via reed beds, remove heavy metals from the spectrum of parameters to be analyzed from reed bed effluent. Sewage effluent from sewage treatment plant is being discharged into the reed beds for additional sediment purification and de-nitrification. As no other water type is mixed with sewage final effluent prior to entering reed beds, its discharge, by definition, could not contain heavy metals.
BTC ROW	II	Two faunal species from off ROW biodiversity monitoring programme As monitoring has shown increases in the population of both Caucasian Mud-Diver (<i>Pelodytes caucasicus</i>) and Snake-Eyed Lizard (<i>Ophisops elegans</i>), these 2 species will be omitted from off ROW Biodiversity Monitoring Programme.

3.3 TURKEY

There were no Class I, II or III changes in Turkey during 2010.

3.4 CROSS-COUNTRY CHANGES

There were no cross country changes approved in 2010. However a Class III change related to NOx emissions from gas turbines in Azerbaijan and Georgia was submitted to IEC in draft form for comment in 2010. This change was submitted formally in early 2011 and was approved by IEC, thereby ending the non-compliance in this area. Under the MOC BTC will implement a number of projects, including installing renewable energy systems at sites where they will provide a social benefit, in mitigation of NOx emissions in excess of ESAP limits. Further information will be given in next year's annual report.

3.5 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MATERIAL MODIFICATION TO AN ESIA, ESAP, THE RAP, THE ESMS OR ANY OSRP

3.5.1 Azerbaijan

No material amendments to the Azerbaijan BTC ESIA or RAP were made in 2010.

The BTC Environmental and Social Management System (ESMS) continued to be maintained and in November 2010 the system was internally audited by Integrated HSE Assurance Audit Team.

The Azerbaijan Oil Spill Response Plan (OSRP) was updated and amended as described in Section 5.3.

3.5.2 Georgia

No material amendments to the Georgian BTC ESIA, ESAP or RAP were made in 2010.

Execution of material modification to the BP operations in a form of commissioning an Emergency Drain Down Facility (EDDF) led to amending BTC ESMS.

3.5.3 Turkey

There were no material changes to the Turkey BTC Environmental Impact Assessment (EIA), ESAP or RAP other than those described in Section 3.3.

4 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW

4.1 SUMMARY OF ANY NOTICES OF NON-COMPLIANCE, REMEDIAL ACTION, ANY FINES OR PENALTIES PAID AND FINAL DISPOSITION OF ANY REGULATORY PROCEEDINGS

All notices of non-compliance served by the IEC in 2010 are detailed in Appendix 3 of this report.

4.1.1 Azerbaijan

There was 1 Level II non-compliance incurred in Azerbaijan from the IEC. This non-compliance related to stack emissions for NO_x being found out of compliance with the ESAP. An MOC has since been submitted to, and accepted by, IEC to address this.

There were no government fines or penalties incurred for environmental or social non-compliances, and no material environmental claims were made against BTC in Azerbaijan during 2010.

4.1.2 Georgia

There was 1 Level II non-compliance in Georgia relating to stack emissions. An MOC has since been submitted to, and accepted by, IEC to address this

There was also 1 Level I non-compliance in Georgia for discharge of non-compliant retention pond water into the surface water environment.

All notices of non-compliance served by the IEC in 2010 are detailed in Appendix 3b of this report.

4.1.3 Turkey

There was 1 Level I non-compliance in Turkey relating to BIL's resources to manage public and community relations activities. Details are provided in Appendix 3c.

There were no government fines or penalties incurred for environmental or social non-compliances, and no material environmental claims were made against BTC in Turkey during 2010.

4.2 MONITORING RESULTS

During 2010 environmental monitoring on the operation of the BTC Pipeline continued in accordance with the BTC Emissions Management Plans. These plans were developed to ensure compliance with project standards as well as to monitor, minimise and, where necessary, mitigate the environmental impact of pipeline operations.

4.2.1 Azerbaijan

4.2.1.1 Ambient Air Quality

In July 2010 ambient air quality monitoring was carried out at PSA2. (As compliance with project standards had been demonstrated in 2009, the ESAP does not require further annual monitoring.). Sampling devices were deployed for 4 weeks at 5 locations around the PSA2 station and PSA2 camp. Analyses were carried out for nitrogen dioxide (NO₂), SO₂, and Benzene.

Monitoring at the Intermediate Pigging Station (IPA1) was not conducted in 2010.

All results were within the ESIA specified limits for the annual mean except for elevated concentrations of SO₂ at monitoring point 7, reed beds (32.5µg/m³ compared with a project standard of 20µg/m³) and point 5, KP 244 (37.4µg/m³ compared with a project standard of 20µg/m³) (annual mean).

A summary of monitoring results is provided in Appendix 2.1a.

4.2.1.2 Stack Emissions

Stack emissions monitoring was carried out for all major combustion plants at BTC Pipeline Stations: (PSA2 and PSA3 Main Power Generators, 4 Turbines and Water Bath Heater (WBH), IPA1 and IPA2 Main Power Generators). All of the stacks were sampled for NO_x, carbon monoxide (CO), SO₂, and Particulate Matter 10 (PM₁₀).

The monitoring results of all BTC diesel generators (PSA2 Generators A, B, C; IPA1 Generators A, B) and WBH indicated that the NO_x, CO, SO₂ and PM concentrations are well below the limits specified for these plants in the BTC Azerbaijan ESIA (AZSPU-HSSE-PMT-00571-A1) and ESAP Emissions Management Plan (AZSPU-HSSE-PMT-01265-2).

However monitoring results of the BTC PSA2 Main Oil Line (MOL) Turbines indicated that NO_x concentrations were higher than the 75 mg/m³ limit specified in the BTC ESAP (AZSPU-HSSE-PMT-01265-2) for this plant, but lower than the 125 mg/m³ limit specified in the BTC Azerbaijan ESIA (AZSPU-HSSE-PMT-00571-A1). An offset programme was suggested by the IEC in order to compensate the exceeded part of NO_x emissions. An MOC that sets a framework for such an offset programme has subsequently been submitted to IEC. This was approved in early 2011. The precise details of the offset programme are currently being prepared. Further information will be given in next year's annual report.

A summary of monitoring results is provided in Appendix 2.1b.

4.2.1.3 Noise

In 2010 environmental noise monitoring was conducted in accordance with ESAP requirements at 2 pre-identified receptors around PSA2, at 3 pre-identified receptors around IPA1, and at 6 Block Valves (BV-4, BV-7, BV-10, BV-11, BV-13, BV-14) which are located within 300 m distance of community receptors.

Results indicated compliance with the ESAP standards for all locations, except BV-7 (due to close proximity to a highway) and BV-10 (due to open door of the overheating security generator) where slight elevation was observed compared to ESAP night time limit.

A summary of monitoring results is provided in Appendix 2.1c.

4.2.1.4 Effluent

BTC's effluent discharges in 2010 comprised treated sewage from PSA2, PSA2 camp and IPA1.

Sewage treatment systems at PSA2, PSA2 camp, at IPA1 have the same design and undergo the same 3 stages of treatment: biological treatment, Ultra Violet (UV) sterilisation, and final polishing in reed beds. This system was successfully commissioned at IPA1 in January 2010 and the final treated effluent has been continuously discharged from the reed beds to a nearby drainage canal. Discharges to the environment were in full compliance with the ESAP standards at all times for 3 parameters, namely Potential of Hydrogen (pH), Total Suspended Solids (TSS), Chemical Oxygen Demand (COD).

During first month of operation, the discharged water from IPA1 reed bed was out of compliance with regard to Coliform bacteria (ranging from 700/100 ml to 16,000/100 ml compared with the standard of 400/100 ml), Nitrogen Ammonia (11.45 mg/l compared with the standard of 10 mg/l) and Total Nitrogen (25.7 mg/l compared with the standard of 15 mg/l). The cause of this exceedance was investigated and corrective actions were taken. During the year Total Coliform bacteria exceeded the standard in April (1600/100 ml), May (2,200/100 ml) and in November (1600/100 ml). These exceedances all occurred during periods of heavy rain and it is believed that they may be due to bird and animal droppings being washed from the reed beds.

In April 2010 the operation of Rotating Biological Contactor (RBC) in PSA2 camp was stopped due to the crack identified in one of the chambers of RBC unit. All untreated sewage was sent for treatment to the BP approved waste water treatment plant. The unit was successfully re-commissioned and re-started in July.

All results from the PSA2 reed bed were in compliance with ESAP standards with exception of total Coliform bacteria. The parameter exceeded the standards in February (920/100 ml), July (9000/100 ml) and again in October (910/100 ml). The investigation confirmed that the RBC unit was working correctly and rain was again suspected as being the cause of the total Coliform bacteria exceedance.

The waste water monitoring procedure was updated and rules to be followed in case of a non-compliance of discharged water were added.

A summary of monitoring results is provided in Appendix 2.1d.

4.2.1.5 Ground and Surface Waters

In 2010 surface and groundwater monitoring was carried out in May and November. In May groundwater samples were taken from 5 monitoring wells at the Karayazi aquifer (because 2 wells were dry and 1 had been vandalised) and from 2 wells at PSA2. The destroyed monitoring well (KarM7) was successfully re-drilled in July 2010. In November groundwater samples were taken from 6 monitoring wells at the Karayazi aquifer (because 2 wells had been dry) and from 2 wells at PSA2. Surface water samples were taken from upstream and downstream locations at IPA1 and PSA2.

All the results indicated no significant deterioration from pre-project baseline conditions.

A summary of monitoring results is provided in Appendix 2.1e.

4.2.1.6 Waste Management

During 2010, waste management practices were maintained and improvements undertaken to minimize waste generation through awareness sessions, tool-box talks etc. All wastes were handled and disposed of in accordance with BP Azerbaijan Strategic Performance Unit (AzSPU) waste management requirements.

A summary of waste generated is provided in Appendix 2.1f.

4.2.2 Georgia

4.2.2.1 Ambient Air Quality

There was a single round of monitoring conducted in 2010 (from May to June) at PSG1 and PSG2. Monitoring frequency around all the sites had been ceased in 2010 to an annual due to the compliance demonstrated in 2009.

Measurements were taken at 5 locations around each of the stations for NO_x, SO_x, and Benzene. All results demonstrated compliance with the relevant standards, with the exception PSG1 point 3, which showed threefold increase in SO_x due to ongoing construction activity for the construction of the PSG1 OSRB

A summary of monitoring results for Ambient Air Quality is provided in Appendix 2.2a.

4.2.2.2 Stack Emissions

The annual round of the stack emissions monitoring was conducted from November to December 2010 for most of the equipment of PSG1 and PSG2. PSG1 Generator 2 and PSG2 MOL Turbine were not monitored as they were not operational at the time. Crude Topping Units (CTUs) are activated on a quarterly basis and were monitored in Spring 2010.

All of the stacks were sampled for NO_x, CO, sulphur oxides (SO_x) and calculations for PM₁₀ had been performed. Carbon dioxide (CO₂) monitoring was also conducted for operations purposes.

The monitoring results for PSG MOL Turbines demonstrated general compliance with ESAP standards with the exception of NO_x for those turbines, which had been monitored with the Solar Turbines Dry Low Emissions Technology (SoLoNO_x) mode off. Surprisingly the PSG2 MOL Turbine 2 showed compliance with the ESAP NO_x standard despite not running in SoLoNO_x mode. This result could not be explained by site authorities or by Solar representatives.

The monitoring results for BTC PSG Generators, WBHs and CTUs demonstrated full compliance with all the ESAP standards.

A full set of results is given in Appendix 2.2b.

4.2.2.3 Noise

In 2010 environmental noise monitoring took place on annual basis around PSG1, PSG1 camp, PSG2, PSG2 camp, Akhaltsikhe camp and Tsalka and Borjomi OSRBs. The EDDF was monitored on quarterly basis.

Most of the locations indicate compliance with the ESAP project specified standards with the exception of one location, Borjomi OSRB, due to the cumulative noise background of rain, nearby river and site generator.

A summary of monitoring results for environmental noise is provided in the Appendix 2.2c.

4.2.2.4 Effluent

Effluent discharges in 2010 comprised treated oily water and storm water from PSG1 retention pond and PSG2 retention pond and treated sewage from PSG1 camp reed bed, PSG2 reed bed, PSG2 camp reed bed, EDDF STP and Akhaltsikhe camp reed bed. All of these discharges are subject to regular monitoring. The monitoring was completed on a monthly basis. It should be noted that heavy metals were removed from the monitoring requirements for camps, as described in the MOCs approved by the IEC in 2010.

The results for most of the locations indicate general compliance with the project specified standards with the following exceptions:

- PSG1 retention pond: Out of a total 9 readings for each parameter, results showed 2 pH, 1 COD, 3 TSS, and 3 Coliform bacteria readings as being outside project standards. The PSG1 retention pond had not been monitored in July, August or September due to the absence of water.
- PSG2 retention pond showed 1 out of 4 Coliform bacteria readings above project standards. The PSG2 retention pond had not been monitored in January, February, March, July, August, September, October or November due to the absence of water.
- Both of the retention ponds were radically upgraded in 2010. The upgrade programme, which was completed by the end of Q3 2010, included installation of new chopper discharge pumps, concreting of the retention ponds' bases and installation of the new pH meters, which are to be connected to the sites' control rooms.
- In addition, sluice gates were installed at specific locations to enable storm water from non-hydrocarbon areas to deviate from retention ponds of.
- No sewage water is discharged to the retention ponds.
- At the PSG2 new RBC type Sewage Treatment Plant (STP), out of 12 readings, – 2 detected ammonia and 3 showed Coliform Bacteria. These non-compliances took place during the commissioning and set up of the new STP.
- PSG1 camp resulted in 3 out of 12 readings showing Coliform bacteria. The existing PSG2 camp STP had been moved to the PSG1 camp where it replaced the old project period Tetem type STP, which had not been working effectively. The results show a significant improvement in quality of treated waste water.
- PSG2 camp showed Coliform bacteria in – 2 out of 12 readings. The old Tetem unit remained at the PSG2 camp after the STP had been moved to the PSG1 camp. However, it shows quite good treatment quality with water sent to the reed bed for additional treatment.

The new STP at the EDDF was installed, but failed to function effectively despite continual maintenance. Therefore, the STP was stopped and a septic tank installed to collect of the EDDF sewage, which is then transported to Akhaltsikhe camp STP for treatment and disposal. A new RBC type STP is planned to be installed at the EDDF.

The new RBC was installed at Tsalka OSRB and the Borjomi OSRB RBC has been fixed. New reed beds have also been constructed for both OSRBs for additional treatment of the water. However, no sample has been taken from OSRBs as there was no discharge from reed beds, all the water having soaked away within the reed beds.

A summary of monitoring results is provided in Appendix 2.2d.

4.2.2.5 Ground and Surface Waters

Two full seasonal rounds (from May to July and September to October 2010) were conducted for BTEX, Naphthalene from Polycyclic Aromatic Hydrocarbon (PAH) and Total Petroleum Hydrocarbon (TPH).

The results for most of the locations demonstrated compliance with the set Method Detection Levels (MDLs) with the following exceptions:

- During the first round, the increase in Xylene at TMW8 and in TPH ranges C12-C40 at TSW13 were detected.
- During the second round, the increase in Toluene at KTMW9 and in TPH range C22-C40 at KTSW15 were detected.
- Toluene at BMW4 was elevated during both rounds of monitoring.

For all the above locations the elevated levels indicate isolated instances, and were not linked to any spill or leakage from the pipeline.

A summary of groundwater and surface water monitoring results is provided in Appendix 2.2e.

4.2.2.6 Waste

A summary of waste generated in 2010 is given in Appendix 2.2f. The Central Waste Accumulation Area (CWAA) continues to be utilised by Operations for the management of hazardous waste that cannot be recycled or disposed of in accordance with appropriate standards.

All generated non-hazardous waste is collected at the Waste Processing and Recycling Centre (WPRC) for secondary and final segregation. Recycling waste (plastic bottles, paper and cardboard) is stored in special containers. Non-recyclable waste is sent to landfill for final disposal on a monthly basis.

In 2010, BP Georgia continued using local *Caucasus PET Company* for recycling of plastic waste (140 tonnes). In addition, Vargi Ltd recycled 150 m³ of paper/cardboard and 36.6 m³ of metal waste was sent to NSM & Company.

75 m³ of Asbestos waste was disposed of at the new asbestos cell at non-hazardous landfill. 190 m³ of inert waste sent to Rustavi inert waste landfill. Also, from a total of 988 oily solid waste drums, 602 were compacted by new equipment and 386 emptied.

Various waste plans were approved during 2010. These were the Waste Management Plan (WMP), Waste Management Implementation Plan (WMIP), Waste Offset Plan (WOP) and Waste Projects Plan (WPP).

In May 2009, the first EU-standard non-hazardous waste landfill in Georgia began operations. During 2010, the landfill received 242.4 m³ of compacted waste.

BP continued using food waste macerators and a dewatering system. In so-doing, the volume of food waste was able to be reduced by 70-80%. Macerated and dewatered food waste was then sent to WPRC for composting. Composted food waste is used for various purposes, including conditioning of ROW, final covering for the landfill, and by local farmers.

4.3 TURKEY

4.3.1.1 Ambient Air Quality

Ambient air quality monitoring is undertaken only at the Ceyhan Marine Terminal (CMT). The results are presented in Appendix A.2.3. No ambient air monitoring is required at the Pump Stations (PTs) as the major sources of emissions (pump drivers and water heaters) use natural gas as a fuel.

Passive diffuser tubes were used to monitor air quality. VOCs (benzene, toluene, ethyl benzene and xylene–BTEX), SO₂ and NO_x are measured at 10 locations at and around CMT once in every three months.

In 2010, 4 surveys were undertaken between January and December (although the January 2010 survey actually began in December 2009).

- The annual average values of parameters measured in 2010, are very close to or lower than the associated values of 2007, 2008 and 2009 as well as baseline values. All annual average measurement results of parameters are in compliance with the Project-specific Standards and limit values set forth by the Turkish Regulation. Anomalously high results for benzene (up to 269 µg/m³) were obtained for four sites in the autumn round of monitoring. However it was noted in the diffusion tube analysis report of these monitoring locations that Benzene was co-eluted with another substance and therefore, the concentration could not be

determined accurately. Also these very high levels of benzene were not accompanied by a corresponding increase in other BTEX levels as would be expected, not were elevated levels of benzene detected in nearby monitoring stations. It was therefore concluded that these were erroneous readings.

4.3.1.2 Stack Emissions

The flue gases originating from gas fired reciprocating engines, water heaters, diesel fired generators and wax handling boilers were monitored by DOKAY in accordance with ESAP EEMP.

In addition, one round of monitoring consistent with the Regulation on Control of Air Pollution Originated from Heating (RCAPOH) was realized in 2010 by BIL.

Stack emissions monitoring results for 2010 are shown in Appendix A.2.3. The results demonstrate compliance at all facilities except for the CMT camp site heater soot result. The maintenance of that piece of equipment was done by BIL Maintenance Department.

4.3.1.3 Noise

The project standard for noise specifies a maximum of 45 dBA for night time ambient noise levels at sensitive receptors or a 3dBA increase above background levels. Noise modelling was undertaken as part of the ESIA process (Volume II, Section 7.9.4) and indicated that 40dBA is reached a maximum of 50 m from the perimeter fence at each pump station. The closest residential receptor to any of the facilities is 1.5 km. Monitoring at off-site residential receptors is therefore not considered necessary unless in response to concerns raised by residents or if there is evidence that on-site noise is rising. Neither of these situations arose during 2010, consequently, no ambient monitoring was conducted.

4.3.1.4 Aqueous Discharges

Aqueous discharges originating from project facilities, as well as downstream surface water bodies which receive the aqueous discharges are monitored on a monthly basis. Upstream water bodies are similarly monitored to establish 'control' conditions. Aqueous discharge monitoring results for 2010 are shown in Appendix A.2.3.

Number of aqueous discharge streams did not meet project standards. In such cases the effluent was re-cycled or trucked to Project approved Municipal WWTPs for further treatment.

The details of the studies carried out for waste water systems improvements at all facilities are provided in Section 2.4.3 of this report.

4.3.1.5 Groundwater

Groundwater quality monitoring programme for operations was developed by BIL in 2010, however tendering process prolonged and monitoring not commenced in 2010. It is anticipated that the programme will commence in 2011.

Objectives of monitoring program are as follow:

1. The operational impacts of groundwater abstraction from the wells,
2. The possible contamination by BTC facilities on groundwater,
3. Groundwater level (static and dynamic) in order to assure that the safe yield is abstracted from the aquifer.

4.3.1.6 Waste Management

In 2010, about 542 tonnes of solid waste was disposed off-site. Of this, 31% was hazardous waste that was sent to Izaydas for incineration, 26% was domestic waste sent to Izaydas for landfill and the rest, was non-hazardous waste that was re-used or re-cycled. Appendix A.2.3 provides details of waste volumes generated.

For details of the Waste Management BPEO Study refer to Section 2.4.3 of the Report.

4.4 STATEMENT OF COMPLIANCE

BTC and its agents have complied with the ESAP, applicable environmental laws and applicable Lender Environmental and Social Policies and Guidelines in all material respects during 2010.

All non-compliances that have been identified in 2010 are summarized in Executive Summary and shown in Appendix 2. Non-compliances relating to other audits are given in Section 11 (and detailed in Appendices 3 and 4). For all non-compliances identified, corrective actions have been developed and implemented.

4.5 CHANGES IN APPLICABLE ENVIRONMENTAL LAW⁵

4.5.1 EU Legislation

DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions (integrated pollution prevention and control)

This Directive lays down rules on integrated prevention and control of pollution arising from industrial activities.

It also lays down rules designed to prevent or, where that is not practicable, to reduce emissions into air, water and land and to prevent the generation of waste, in order to achieve a high level of protection of the environment taken as a whole.

In July 2010, the European Commission agreed the final text of the long-awaited Industrial Emissions Directive (2010/75/EU) (IED). It supersedes the Integrated Pollution Prevention and Control (IPPC) Directive and entered into force on 6 January 2011. Member states have 2 years to apply the IED in their national legislation.

4.6 CHANGE IN NATIONAL LEGISLATION

The following summary of changes in national legislation of Azerbaijan, Georgia and Turkey aims to give an overview of new legislation and highlight recent developments. Although some may have direct relevance to BTC, inclusion of specific legislation into this Report does not imply its applicability to BTC.

4.6.1 Azerbaijani Law

There were no environmental related legislative changes in 2010 that were potentially relevant to BTC Azerbaijan.

4.6.2 Georgian Law

The following environmental related legislative changes occurred in 2010 that were potentially relevant to BTC Georgia:

⁵ Applicable environmental laws as defined within the HGA and Inter Government Agreement (IGA).

Regulation Title	Regulation Topic	New / Revision	Impact on BTC Georgia Operations
<i>Law of Georgia on Inspection of Environmental Protection (No.3048 May 4, 2010,)</i>	Inspection and monitoring of sites	New	Sites may be subject to inspection and monitoring
<i>Order No.2 of the Minister of Protection of Environment and Natural Resources, dated February 2, 2011 on Approval of Methods for Determination (Calculation) of Damages Inflicted to Environment</i>	Provides a framework for the calculation of damage inflicted to the environment in the process of use of natural resources and/or production	New	To be assessed
<i>Code of Administrative Misdemeanours (December 15, 1984), latest amendment December 17, 2010</i>	Covers violations related to sea pollution, rules of registration and nuclear and radiation activities.	Revision	None likely
<i>Order No.29 of the Minister of Protection of Environment and Natural Resources, dated August 2, 2010 on Approval of the Listing of Stationary Objects of Atmospheric Air Pollution Registered and Identified by the year 2010</i>	Official listing of sources of air pollution.	New	BTC is included within the list. All pipelines are categorized as material objects of pollution, while the pumping stations are categorized as medium pollution objects
<i>Order No.745 of the Minister of Protection of Environment and Natural Resources, dated November 13, 2008, latest amendment September 27, 2010 on Approval of Technical Regulations for Environmental Protection</i>	Extraction of surface water	Revision	None
<i>Law of Georgia on Environmental Impact Permit (No.5602, December 14, 2007), latest amendment – October 28, 2010</i>	Environmental Impact Permits	Revision	Minor. Certain amendments were introduced to the list of documents required to be submitted for the purposes of obtaining the Environmental Impact Permit (technical resume of applicant activities). The conditions of changing the terms of permits have also been modified.
<i>Order No.297/N of the Minister of Labor, Health and Social Protection, dated August 16, 2001 on Approval of Norms of Environmental Quality, latest amendment October 25, 2010</i>	Requirements and rules for water usage, contamination and discharge. Air emissions	Revision	None likely
<i>Law of Georgia on Atmosphere Air Protection (No.2116, June 22, 1999), latest amendment - November 12, 2010</i>	Ozone depleting substances	Revision	None likely

Regulation Title	Regulation Topic	New / Revision	Impact on BTC Georgia Operations
<i>Law of Georgia on Protection of Environment (No.519, December 10, 1996), latest amendment – May 4, 2010</i>	Regulation of crimes against environmental protection and use of natural resources.	Revision	None likely
<i>Resolution No.154 of the Government of Georgia, dated June 4, 2010 on Approval of Instruction on Rules of Submission of Safety Declarations</i>	Safety declarations and their application, <i>inter alia</i> , to main pipelines, gas pipelines, storages of oil and oil products, terminals and stations of gas discharge with the total volume of reservoirs exceeding 1,000 m ³	New	To be assessed
<i>Resolution No.132 of the Government of Georgia, dated August 11, 2005 on Approval of Regulations on the Terms and Rules of Issuance of Licenses for Use of Forest latest amendments January 21, 2011</i>	Forest usage	Revision	To be determined
<i>Resolution No.241 of the Government of Georgia, dated August 13, 2010 on Approval of Rules on Care and Restoration of the Forest (latest amendment September 28, 2010)</i>	Care and restoration of the forest	Revision	Minor or none
<i>Order No. 6 of the Minister of Protection of Environment and Natural Resources, dated February 15, 2010 on Approval of form of Environmental Impact Permit</i>	Environmental Impact Permits	Revision	Minor or none
<i>Order No.5 of the Minister of Protection of Environment and Natural Resources, dated February 15, 2010 on approval of Rules of Granting a Special Purpose Category to the Lands of State Forest Fund, latest amendment – January 31, 2011</i>	Forestry	New	Minor or none
<i>Labor Code of Georgia (No.4113, December 17, 2010)</i>	Termination of employment	Revision	Minor or none
<i>Law on Public Health (No.5069, June 27, 2007), latest amendment – November 12, 2010</i>	Control over safety of technological processes	Revision	Minor or none Control now to be carried out by Technical and Construction Inspection (Ministry of Economic Development of Georgia).

4.6.3 Turkish Law

The list of national environmental regulations that were published or re-issued in 2010 is shown below, along with a statement regarding BTC's likely response:

Official Gazette No	Effective Date	Regulation Topic	New / Revision	Impact on BTC Turkey Operations
27533	01.04.2010	Landfill of Waste	New	None. This regulation is coherent with EU Directive that BIL's activities are already in compliance with.
27601	04.06.2010	Assessment and Management of Ambient Noise	New	None. BIL is exempt from the regulation.
27605	08.06.2010	Soil Contamination Control and Areas Polluted by a Point Source	New	Most of the articles will be put into force in 2012. An evaluation will be completed by this time.
27605	08.06.2010	Massive Combustion Facilities	New	None. As the regulation is applicable for plants with thermal powers >50 mW.
27761	04.08.2010	Use of Sludge Derived from Domestic and Urban Waste Water Treatment Plant in Soil	New	None.
27716	01.10.2010	Methods and Elements of Stimulating Measures from that Waste Water Treatment Plants may Benefit depending on Environment Law 29 th Article	New	Installation of a separate electrical meter for WWTPs is a pre-requisite to apply this incentive on electricity consumption. The feasibility study was completed by the BIL Engineering Department. As a start, the application to install the meter was done for CMT.
27721	06.10.2010	Incineration of Waste	New	None. However, this will be utilized during the evaluation of hazardous waste incineration at licensed cement factories option of the Waste Management BPEO Study.
27757	12.11.2010	Environmental Accountees and Environmental Consulting Companies	New	A Centralized Environmental Unit will be established at CMT by BIL. E-signature was obtained from MoEF for the staff that will be member of the unit. The unit will be declared to MoEF once established.

5 OIL SPILL RESPONSE

5.1 SUMMARY OF OSRPS COMPLETED, UPDATED, OR AMMENDED DURING THE YEAR

The OSRP for Azerbaijan was amended and updated in February 2010 as summarised in Section 5.3.

5.2 SPILL AND REMEDIATION SUMMARIES

BTC reports any material release that reaches the environment (i.e. is uncontained) or that is greater than 1 barrel, even though it may be contained. Gas releases are always classified as uncontained. All material releases (liquids, gases or solids) are internally reported and investigated. There is no minimum reportable volume for internal release reporting and investigation. A summary of these releases is given in Table 5.1.

Table 5.1: BTC Material Releases in 2010

Asset	Liquid			Gas
	< 1 bbl	> 1 bbl		
	Uncontained	Contained	Uncontained	
BTC Azerbaijan	0	0	0	1
BTC Georgia	0	0	0	0
BTC Turkey	1	0	1	0

Further details on the material releases shown in Table 5.1 are provided in the following sections.

5.2.1 Azerbaijan

There was 1 material release of CO₂ on 27th August 2010 due to faulty actuation of the Emergency Fire and Gas system at ABV 17. As a result, approximately 180L of CO₂ was released into the atmosphere.

There was a minor spill of fuel recorded during the year at IPA1. It was contained and therefore is not discussed further in this report.

5.2.2 Georgia

There was no contained spill greater than 1 barrel (bbl) recorded during 2010 reporting period.

5.2.3 Turkey

5.2.3.1 Contained

There were no contained spills greater than 1 bbl recorded during 2010 reporting period.

5.2.3.2 Uncontained

There were 2 spills in 2010:

Estimated 0.06 bbl crude oil (PT2 – October 2010)

While the wax handling unit was running, crude oil sprayed from the rear cap flange connection of heat exchanger #3. The exchanger was repaired, the spill was cleaned up and contaminated gravel was collected and stored at the CWAA.

Estimated 44 bbl crude oil (ROW – December 2010)

A spill occurred due to an illegal tap activity at KP 254 and KP 659 (HT-25). A villager observed crude oil leakage on the ground and informed PT2 station management. Once station staff arrived at the location, they observed an approximate 2 m² excavation area which was full of crude oil and also heard a leak sound coming from the underground. BIL and BTC Co. IMTs were activated. The oil contaminated area was cleaned up and contaminated soil of approximately 65 tons was sent for disposal to Izaydas facilities. Soil sampling was conducted during and after cleaning activities. As there was no pre-existing groundwater no monitoring was conducted.

5.2.3.3 Illegal Taps

Two illegal taps were discovered in 2010:

- HT-24; discovered at KP 1066 and KP 825 on 02.08.2010. There was no spill. The tap was capped off and the damaged location was repaired.
- HT-25; discovered at KP 254 and KP 659 on 07.12.2010. The tap was capped off and the damaged location was repaired. Refer to Section 5.2.3.3 for details.

5.2.3.4 Remediation

A bio-remediation programme for approximately 150 m³ of contaminated soil which originated from previous illegal taps was implemented by BIL at the CMT. The programme is ongoing with monitoring activities.

BVT30

BTC Co. carried out additional groundwater monitoring study at BVT30 in 2010. The monitoring programme was performed in 2 rounds during rainy and dry seasons.

- The rainy season sampling was conducted in order to observe the effects of the snow melt and heavy precipitation on groundwater levels and the transport mechanism of any crude oil contamination potentially left behind. The groundwater analysis results showed that all TPH fractions and BTEX concentrations were below the laboratory detection limits.
- The dry season sampling was conducted to observe the impacts of the decline of water levels following the dry summer months on the movement and dissolution of the potentially entrapped crude oil in the unsaturated zone. The groundwater analysis results showed that all TPH fractions and BTEX concentrations were below laboratory detection limits. No indication of residual contamination due to transport, resulting from seasonal changes in groundwater elevation, was observed.

5.3 SUMMARY OF MATERIAL MODIFICATIONS TO THE OSRPS

The OSRP for Azerbaijan was amended and updated in February 2010.

The OSRP for Azerbaijan included the following changes:

Section 1: Figure 1.1.1 replaced, 1.1.5 plan names and numbers updated;

Section 1.7: IMT roles and responsibilities and Figure 1.7.2 changed to reflect updated Incident Management System (IMS). Name of GCT (Group Crisis Team) changed. Section on RRT (Roles and Responsibilities of Team) added, Section 1.8.10 information on Community Liaison Officers (CLOs) added;

Section 2: Notification of authorities changed to reflect updated IMS. Action cards of IMT changed to reflect updated IMS;

Section 3: Contact details changed and updated. Response equipment updated. Training updated to reflect changes to training standards and IMS. Source control added to Scenarios and containment sites (CS) names updated. Tier 3 contractor notification and mobilization forms updated.

6 ADDITIONALITY PROGRAMMING

6.1 SUMMARY OF EIP

6.1.1 Azerbaijan

Since 2009 the Azerbaijan Environmental Investment Programme (EIP) no longer exists as a separate programme but rather sits within the framework of the Sustainable Development Initiative (SDI) and the Community Development Initiative (CDI), see Section 6.2.

6.1.2 Georgia

6.1.2.1 Construction Phase EIP Projects

The Ktsia-Tabatskuri Managed Reserve Management Plan project was jointly funded by both EIP funds and separate offset funds⁶.

The initial goal of preparing a Management Plan was completed in 2009. The second goal involving actual capacity building and implementation covering outlined activities per existing grant agreement was conducted and completed by the International Union for Conservation of Nature and Natural Resources (IUCN) in November 2010.

6.1.2.2 Forest Eco-Compensation Project

BTC Co. and SCP Co. committed to compensate for forest areas removed during pipeline construction by assisting in an environmental project. Under an agreement with the GoG dated February 2010 the pipeline companies will contribute US\$3.5 million to the Sataplia State Reserve Infrastructure Development Project and will have no further obligations other than those in the Biorestitution Specification Plan.

6.1.2.3 Operations Phase EIP

The Eco-Awards Programme is funded by BP on behalf of BTC and SCP. It rewards individuals and organizations involved in promoting awareness of the environment and its protection. The budget allocated for the programme is US\$900,000 for 3 years (2008-2010). The first transfer of US\$300,000 was made in December 2008. The second transfer of US\$300,000 was made in December 2009 and the third transfer of US\$300,000 was made in December 2010.

In October 2010 BTC Co. and SCP Co. reached an agreement (part of which addresses EIP) with the Ministry of Environment. Namely, regarding further implementation of the Eco-Awards programme during 2012-2014 as a close-out of some of BP's commitments stipulated in the ESIA. A total of US\$300,000 was committed under the grant agreement with US\$100,000 spend each year starting from 2012.

The following section discusses the various projects implemented under the Eco-Awards Programme.

⁶ In addition to the Georgia EIP budget of US\$3 million, an additional US\$1.3 million was designated for Offset Programmes. To take advantage of synergies with EIP, offset money spent on Ktsia-Tabatskuri Managed Reserve is managed under the EIP.

Projects Funded under Eco-Awards in 2008

1. Organization: Wild Plant Conservation Association (WPCA)

Project title: Ex-Situ Conservation and Commercial Use of Some Economically Important Species of Wild Flora Protected by the Convention on International Trade in Endangered Species (CITES) Convention

Goal: To support conservation and commercial use of economically important species of wild flora protected by the CITES Convention.

Start/End dates: 25.03.2009 – 24.09.2010

Outcomes: Conducted field visits and collected seeds in Ajara. Seeds were sown in laboratories, greenhouses and in natural conditions outside.

2. Organization: Georgian Tourism Association (GTA)

Project title: Market-Oriented Sustainable Tourism Development in Protected Areas (PAs) of Georgia

Goal: To facilitate market-oriented, participatory sustainable tourism for the Lagodekhi, Algeti and Kintrishi PA in Georgia.

Start/End dates: 23.03.2009 – 22.10.2009 (extended till January 15, 2010)

Outcomes:

Workshops: local products for sustainable tourism in Mtirala national park, Algeti national park and the Vashlovani national park.

Video clips: of Kintrishi and Mtirala national parks, Vashlovani national park, and the Lagodekhi national park. <http://www.tourism-association.ge>; <http://www.youtube.com/user/georgiantourism#p/u>)

School camps: in Algeti national park, Vashlovani national park, and the Lagodekhi national park.

Construction in Algeti national park of picnic area, toilet facility, garbage container, marking of path with signs, road signs, explanatory boards and informational desk.

Printing materials: maps, brochures, photo-documentation, guesthouse booking system (webpage with details and photos).

3. Organization: Biological Farming Association Elkana

Project title: Reviving the Meskhetian Wheat *Tsiteli Doli* through an Effective Marketing Chain

Goal: To reduce the negative impact of agriculture on the environment in the Samtskhe-Javakheti Region and preserve local agricultural biodiversity by introducing the sustainable use of endemic species.

Start/End dates: 01.06.2009 – 04.02.2011

Outcomes: Organized a 'Farmers' Day' in Akhaltsikhe and completed the selection of farmers to participate in the day.

4. Organization: IUCN Programme Office for the Southern Caucasus

Project title: Facilitating Stakeholder Participation in PAs of Georgia

Goal: Promote environmental protection in Georgia through facilitating stakeholder participation in Protected Territories.

Start/End dates: 23.03.2009 – 23.11.2010

Outcomes: A strategic framework document was developed to help establish PA Advisory Boards. Stakeholder analysis was carried out, a questionnaire developed and the first charter of the Friends Association was drafted.

5. Organization: Association for Environment Protection and Sustainable Development MTA-BARI

Project title: Support to the cultivation and sale of economically important species of Adjara wild flora in the buffer zone of Mtirala National Park

Goal: To support sustainable use of resources in the buffer zone of Mtirala National Park that envisages sustainable use of economically important and endangered indigenous species of flora and involvement of local population in the marketing development.

Start/End dates: 15.04.2009 – 14.08.2010

Outcomes: 22 families were selected to participate in this programme and a brochure developed containing information on cultivating and marketing economically important species in the region.

Projects Funded under Eco-Awards in 2009

1. Organisation: Association Flora and Fauna

Project title: Reducing the Negative Impact of Ghost Fishing and the Predator Mollusk *Rapana Venosa* on the Black-Sea Eco-system

Goal: To contribute to the preservation of the Black Sea eco-system and resolution of 2 important problems: 1) expansion of *Rapana venosa*, a predatory mollusk, and its impact on biodiversity and 2) *ghost fishing* (the term used for lost or abandoned fishing gear that harms the environment).

The association Flora and Fauna is undertaking a one-year project along the Black Sea coast (Ajara, Guria, and Samegrelo) that aims at increasing public awareness of these problems through an active information campaign, including special lectures, seminars/roundtables, as well as brochures and the introduction of safe methods of catching *Rapana venosa*. The project includes special training on diving for selected fisheries and purchase of special diving equipment for them. Selected brigades equipped with scuba have committed to catching *Rapana venosa*. This will contribute to preserving local biodiversity and improving the socio-economic conditions through the sale of *Rapana venosa*. At the same time, the divers will remove lost and abandoned nets in the sea. The grantee will also conduct seminars/trainings for fishermen on the preparation and use of special traps for *Rapana venosa*. The grantee will also publish a special booklet giving recipes for cooking with *Rapana venosa* and suggestions of how to use its shell, e.g. creating souvenirs. All the materials and information prepared will be uploaded on the organization's web-page: www.florafaua.org.

Period: 12 months (24.03.2010 – 31.03.2011)

1. Organisation: Association Zekari

Project title: Development of Demonstrative Model for Recovery of Erosive Slopes and Prevent Landslides in the High Mountainous Region of Racha

Goal: To reduce the negative impact of erosion and prevent landslides in the high mountainous regions of Racha, the Association Zekari is undertaking a 10-month project to introduce environmentally safe and effective mechanisms to prevent and improve erosive slopes and conduct a public awareness campaign among local stakeholders. As part of the project, the grantee will prepare, publish, and distribute a special brochure on the specifics of erosive slope recovery. In order to test the proposed mechanism, a pre-selected erosive slope will be recovered. The grantee will conduct meetings/seminars with residents of 9 communities that are affected by landslides. The project will be carried out in cooperation with the local municipality.

Period: 10 months

2. Organisation: Adjara Sustainable Development Association

Project title: Support to Further Sustainable Development of Protected Areas of Georgia through Introduction of Alternative Energy Sources and Tourism Development

Goal: To support further sustainable development of Protected Territories, the Ajara Sustainable Development Association (ASDA) is undertaking a 3 month project in Ajara region (the Mtirala National Park and Kintrishi PA) to improve infrastructure and provide knowledge to local residents on possible income-generation activities connected to eco-tourism. The grantee will install solar-power electricity and water-heating systems and increase public awareness on the benefits of using environmentally safe alternative energy sources. The practical knowledge of local residents and other interested parties about approaches to offering tourism services as a means of boosting economic sustainability will be improved through cooperation and involvement of another winner of the Eco-Awards Programme 2010, GTA. The GTA is committed to providing the relevant training free of charge. The project will also contribute to improved cooperation among projects supported within the Eco-Awards Programme, as well as between residents and administrations of the Mtirala National Park and the Tusheti PA through information-sharing activities such as a study tour.

Period: 3 months (24.03.2010 – 30.06.2010)

3. Organisation: Georgian Tourism Association

Project title: Enhancing Sustainability of Tourism Development in PAs of Georgia

Goal: To enhance sustainable, nature-based tourism, the GTA is undertaking a 7-month project in 3 different PAs across the country (namely Tusheti, Borjomi-Kharagauli, and Algeti) to improve infrastructure, boost knowledge, and involve young people in conservation. The GTA will work with local people in each protected area to develop sustainable products and services for both international and domestic visitors, and to make all of Georgia's PAs more widely known. Through the project, solar-powered electricity and water heating systems will be installed in 5 guesthouses within the Tusheti PA. The practical knowledge of local producers and other potential tourism partners about approaches to offering tourism services as a means of boosting economic sustainability will be improved in the Tusheti PA and the Borjomi-Kharagauli PA.

The project will also contribute to initiating a cooperative programme between the rangers in 2 protected areas and regional youth as a means of fostering environmental awareness and practical stewardship. The project is carried out in partnership with the Agency of Protected Areas (APA). At the same time, GTA will cooperate closely with another winner of Eco-Awards Programme 2010, ASDA that will implement project envisaging similar components within the Mtirala National Park and the Kintrishi PA. Thus, the project will also contribute to improved cooperation among projects supported within the Eco-Awards Programme, as well as between residents and administrations of the Mtirala National Park and Tusheti PA through planned information-sharing activities such as a study tour.

In addition to this, HSBC Bank (which joined BP and its co-ventures Eco-Awards Programme in 2010) with its financial contribution of US\$15,000, will also support the project with its human resources, including helping project implementers install informational displays, mark paths, and/or participate in the Young Rangers Camps to clean certain surrounding areas.

Period: 7 months

4. Organisation: Rural Advisory Service

Project title: Ecologically Safe Pastures

Goal: To improve the management of local pastures in selected municipalities in the region of Samtskhe-Javakheti the Rural Advisory Service will implement a 13-month project to increase public awareness about preventing ecological risks through the effective use of pastures. The grantee will conduct special training and provide relevant information in the form of booklets and leaflets to the local population through partner Community Based Organisations (CBOs). About 300 farmers from 3 villages and surrounding areas that are actively using pastures will be informed about cost-effective and environmentally safe technologies for pasture management. The grantee will develop 3 demonstration plots, where the effective and environmentally safe usage of pastures will be modelled. Seeding will be demonstrated using the “overseeing” technique, which is environmentally safe and limits soil damage. The grantee will purchase special equipment for over-seeding and, after project completion, provide this service for a fee to local farmers. In addition to this, another 3 land plots will be selected, where insects and flora, that naturally restore pastures, will be raised in a protected environment. The grantee will prepare a special brochure on the results of these activities at the end of the project.

Period: 1 year

6.1.3 Turkey

Ten of the construction phase projects (EIP I) were successfully completed. During the operations phase, EIP has 9 projects out of which three were completed. Two of which will end by mid-2011 and the remaining 3 projects will continue until the end of 2011. The Terrestrial Wildlife Rehabilitation Centre Project will end by December 2012.

Table 6.1: EIP Turkey: Summary of Activities

	Project	Phase	Started	Completed	BTC Funds Spent US\$
1	Sea Turtle Expedition	Construction (EIP 1)	01.08.2003	31.12.2005	175,000
2	Research on Monk Seals	Construction (EIP 1)	01.08.2003	31.12.2004	100,000
3	Improving the Conservation and Status of Caucasian Black Grouse in Turkey	Construction (EIP 1)	01.08.2003	31.12.2005	230,000
4	Important Bird Areas in the BTC Pipeline Region	Construction (EIP 1)	01.08.2003	31.12.2005	215,000
5	Important Plant Areas in the BTC	Construction (EIP 1)	01.08.2003	31.12.2005	260,000
6	Lesser Caucasus Forests Gap Analysis	Construction (EIP 1)	01.02.2004	31.04.2006	305,000
7	Small Investments Fund – Phase 1	Construction (EIP 1)	01.09.2004	30.04.2007	250,000
8	Awareness Raising Materials on Biodiversity Along the BTC Pipeline	Construction (EIP 1)	01.11.2004	30.10.2008	200,000

Project	Phase	Started	Completed	BTC Funds Spent US\$
9 Yumurtalik Lagoons Wetland Management Plan and Erzurum Marshes Conservation Zones	Construction (EIP 1)	01.11.2004	31.12.2007	545,000
10 Participatory Eco-System-Based Planning and Management of Ardahan-Yalnizcam Forests	Construction (EIP 1)	01.06.2005	30.05.2008	1,110,000
11 Eksisu Wetlands Management Project - Phase 1	Operations (EIP 2)	01.12.2006	On-going	419,000
12 Biogas/Fertilizer Demonstration in Kahramanmaraş - Phase 1	Operations (EIP 2)	01.12.2006	31.12.2009	62,000
13 Conservation Priority Analysis for Central and South BTC Region – Phase 1	Operations (EIP 2)	01.12.2006	On-going	1,253,000
14 Grand Kackar Project	Operations (EIP 2)	01.12.2006	31.12.2010	50,000
16 Small Investments Fund – Phase 2	Operations (EIP 2)	01.05.2007	31.05.2009	420,000
17 Yumurtalik Wetlands Management – Implementation Phase 1	Operations (EIP 2)	01.12.2008	On-going	270,000
18 Conservation of Commercially Important Endangered Endemic Plants in Ardahan and Kahramanmaraş	Operations (EIP 2)	01.12.2007	On-going	260,000
19 Terrestrial Wildlife Rehabilitation Centre Project	Operations (EIP 2)	01.04.2010	On-going	250,000
21 Small Investments Fund – Phase 3	Operations (EIP 2)	01.01.2011	On-going	200,000
TOTAL				6,574,000

The original EIP strategy focussed entirely on the issue of promoting biodiversity. Having met most of the objectives in this area, BTC has considered extending EIP into other areas where further substantial national benefit would be obtained from capacity building. Three additional areas that have been identified for further opportunity are:

- National environmental infrastructure (i.e. waste disposal and waste water treatment facilities);
- Wildlife care; and
- Regulator capacity support (awareness and experience).

6.1.3.1 Project Status as of December 2010:

A summary of key EIP developments in 2010 are as follows:

- **Conservation of Endangered Plants along the BTC Pipeline Region (Phase I):** The project targets the offset habitat creation for BTC Impacted Plants. Local conservation actions are being taken for 10 endemic plant species. Propagation of endemic plants in Ardahan and Kahramanmaraş successfully continues. 10,000 seeds were planted in a pilot garden allocated and funded by the District Governorship of Cildir, Ardahan, which is being monitored by the project for capacity building concerns. The guideline for the propagation of bulbous plants is being prepared by the implementing partner. Design and draft of the guideline is completed. This guideline is anticipated to be used by volunteer propagators and will be one of the most important outcomes of the project.
- **Small Investments Fund (SIF-II):** The project provides funds for local conservation efforts and engagement of local stakeholders along the BTC pipeline. The first 2 phases of the project were completed in partnership with the United Nations Development Programme (UNDP). Consultation meetings were held with the UNDP for the third phase of SIF. The General Directorate of Forestry will be a partner in this project during the third phase which is a new requirement from the UNDP to implement projects under direction from national executing agencies. The project document is finalized and approved by the Ministry of Foreign Affairs. The project started in January, 2011. The thematic areas for SIF-III are anticipated to be:
 - Cultivation of endemic and/or local plants as non-timber product alternatives;
 - Alternative energy such as biogas);
 - Eco-friendly grazing in forestry areas along the BTC pipeline
- **Eksisu Marshes for Nature and People (Phase I):** The project aims to maintain momentum towards conservation of a wetland ecosystem. A draft Wetland Management Plan was prepared and submitted to the Local Wetlands Committee for comment and revision. The draft Wetland Management Plan is anticipated to be submitted to the National Wetlands Committee in May 2011 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.
- **Conservation Investment Priority Analysis for the Central and Southern BTC Region:** The project aims to mainstream biodiversity conservation into the forestry sector. The project also disseminates data and information by collecting and standardizing all EIP generated data and transferring it into the national database. The process of standardization and control of EIP generated data to be transferred in the national database has been complete. The guideline for integration of biodiversity in forest management plans was also completed and a workshop was organized in order to share the outcomes of this study with the General Directorate of Forestry and to evaluate the approaches and methodologies as well as implementation and dissemination of the guideline.
- **Implementation of the Yumurtalik Lagoons Management Plan (Phase II):** The project aims to maintain momentum towards conservation of a wetland ecosystem and reducing some of the land use complexities that local stakeholders are facing. The project is implemented in an area close to the pipeline where social non-technical risks are quite high. The project concentrated on sustaining and catalyzing the implementation of actions in the management plan. Monitoring of the water quality continued in 2010. Freshwater connection from the river to the lagoons was established. The Management Plan is being implemented as planned however, due to the continuation of the legal case, some of the activities concerning the status of the National Park are currently on standby.

- **Kaçkar Mountains Forest Conservation and Sustainable Rural Development Project:** The project is a continuation of the Lesser Caucasus Forest Gap Analysis Project and aims to demonstrate ecologically sound community development. The project ended in December 2010 with the completion of additional income activities research and non-timber forest products research.
- **Terrestrial Wildlife Rehabilitation Centre Project:** The project aims to establish and operate a terrestrial wildlife rehabilitation centre and an operation system with the aim of caring for sick, injured and orphaned wildlife and acclimatizing in Turkey in wildlife rehabilitation. The protocol between the Ministry of Environment and Forestry, Uludag University, İkinci Sans Association, KuzeyDoga Association and BTC Co. was signed in 2010. The construction of the rehabilitation centre is anticipated to begin in April 2011.

6.1.4 EIP Expenditures 2010

Table 6.2 shows the amount budgeted for the EIP and the cumulative amount spent since its inception. Table 6.3 shows the breakdown of expenditures for 2010.

Table 6.2: EIP Budget and Expenditures (US\$), 2003-2010

	Azerbaijan	Georgia	Turkey ⁷	TOTAL
EIP Budget	3,467,000	3,000,000	7,440,000	13,907,000
Total Spent to date (at end 2010)	1,697,298	2,877,548 ⁸	6,574,000	11,148,846

Table 6.3: Summary of EIP (Operations Phase) Expenditures (US\$), 2010

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	0	300,000	610,000	910,000
Actual	0	300,000 ⁹	610,000	910,000

6.1.5 EIP Budget, 2010

The EIP and Community Investment Programme (CIP) budgets in Azerbaijan were consolidated and became part of the overall social investment budget (refer Table 6.5).

Table 6.4 shows the breakdown of the 2011 planned budget.

Table 6.4: EIP Budget (US\$), 2011

	Georgia	Turkey	TOTAL
Budget 2011	750,000 ¹⁰	610,000	1,360,000

6.2 SUMMARY OF CIP¹¹

The following table summarises the projects performed across all 3 countries under the CIP (Table 6.5). This is followed by an outline of project activity in each country.

⁷ Includes technical support to grantees on top of the grants awarded.

⁸ Includes US\$500,000 under the Agreement on Bakhmaro Resort Zone Forest Recovery and Reforestation Program and Eco-wards program.

⁹ Additional \$145K to the initially planned \$300K was added in 2009 for Ktsia-Tabatskuri Reserve Management implementation project.

¹⁰ Includes US\$450,000 from PEIP budget.

¹¹ In Azerbaijan term Community Investment Program (CIP) has changed to Community Development Initiative (CDI).

Table 6.5: BTC/SCP CIP and Other Investments - Visualising the Benefits (to year end 2010)

Investment Type	AZERBAIJAN	GEORGIA	TURKEY
Number of communities benefitting	161	77	330 in total (in 2010 Projects focused on 220 villages)
Amount of money invested (US\$)	14.86 million ¹²	5.668 million ¹³	21 million (including 2.4m which was allocated for 2010)
Implementing Partners (IP)/ Number of local/national Non-Governmental Organisations (NGOs)	5 IPs and 12 local NGOs	1 IP and 5 NGOs assisting	3 IPs (all national) implementing the projects in partnership with 90 village based organisations (association, Coop. farmer union) and local authorities along the BTC route
% Women in Community Action Groups	38.2	22%	Varies from 8% to 55% according to region. (All CIPs have separate projects targeting 100% women)
Number of medical facilities improved	42	2	11
Number of education facilities improved	56)	5	133 schools upgraded (in addition 622 women/girls applied to open school programme new register not accepted last two years)
Number of water supply systems improved	99 (potable and irrigation)	26 potable, 25 irrigation	<ul style="list-style-type: none"> 123 potable water systems including 12 electrical motor pump systems improved, 97 irrigation systems (drip, sprinkling and concrete channel) improved, and 178 water systems for animal were improved.
Km of road upgraded	347.64 km	10 km	Road improvements were not included in CIP Turkey In 2010. Village roads were improved as part of reinstatement activities during construction phase.
% Infrastructure project achieving >25% community contribution	62.3	100%. Contribution was no less than 50%	438 quick impact projects have been completed between 2003 and 2010. 95% All infrastructure projects have cash or in-kind beneficiary's contribution.
Number of medical staff trained	497	0	401
Number of people receiving direct medical support	183,970	0	37,700 people received general health trainings (also over 13,000 people received Reproductive Health training from an EU funded project implemented by a CIP IP in Ardahan)

¹² Amount invested: until 31st 2006 – accruals plus amount disbursed, from 1st January 2007 – only amount disbursed. This amount includes spend on BTC/SCP projects within SDI.

¹³ Figures contain the budget of CDI 2, FIM, CDI 3 (BTc/SCP), CDI (WREP)

Investment Type	AZERBAIJAN	GEORGIA	TURKEY
Number of micro loans issued	54,642 ¹⁴	4,262	Except for Geben association micro-loans were cancelled in Turkey and funds are used for collective income generation activities in agro-businesses by cooperatives; 6 micro credit used at Geben in 2010, 307 from beginnings.
% Repayment rate for micro-loans	97.5%	100%	100% for Geben Association in Kahramanmaraş
Average value of micro-loan (US\$)	2,346 ¹⁵	1,500	660 for Geben in Kahramanmaraş
% Women receiving micro-loans	21%	42%	20% for Geben in Kahramanmaraş
Number of demonstration farms / agricultural trainers	75 demonstration field plots and 53 agricultural trainers	150 demonstration farms. 30 demonstration farming groups; 11 trainers	2,418 demonstration farms were established in the project villages (333 agricultural trainers were trained)
Number of farmers trained	5,608 farmers, additionally 60 youth participated in youth business plan and marketing training	4,698	Over 131,199 (also 800 beekeepers)
Number of livestock vaccinated	—	828	Repeatedly 1,039,291 livestock vaccinated, CIP giving support to Cattle Breeders Unions; 51,764 cow artificially inseminated from the beginnings
Weight of high quality seed provided	32.2 tonnes	21.5 tonnes	Over 1,375 tones (also over 63,000 unit fruits saplings provided)
Number of co-operatives established	1 Dev. Resource Centre in Yevlakh 7 Agricultural Service Centres 8 Water Purification Limited Liability Companies (LLC's) 5 youth funds established	25 co-operatives (15 producer and 10 service groups are created)	<ul style="list-style-type: none"> • 70 village-based organisations established (Coops, Associations and informal CBOs). • In total 133 village-based organisations (including coops, VDAs and Unions) received support from the project since 2003 under capacity building theme of CIP.

¹⁴ By the end 2009, EBRD and BP representatives agreed to focus on technical assistance to Azerbaijani financial institutions. In this regard, it was agreed to use the RDI special funds (USD 1,600,000) for implementation of the 2.5 years project called Azerbaijan MSE Credit Advisory Services. The project primarily focuses on supporting the institutional strengthening of the partner institutions enabling them to provide MSE loans in urban and rural regions on a sustainable level with no or limited TC in the future, with backstopping measures for partner institutions, to focus on: - lending operations/credit review; - staff selection and training; - sustainability; - internal and supervisory controls; and - synergies with other organizations and enterprise support programs; and crisis response (as above) on an as needs basis. Up to 8 financial institutions are supported under this project. All the data re micro-loans includes the data from micro finance projects of Sustainable Development Initiative.

¹⁵ Average value of micro-loan for year 2010 is \$USD 2,346.

6.2.1 Azerbaijan

In 2010 BP in Azerbaijan continued to support sustainable community development initiatives along the BTC and SCP pipelines.

Our community programme (CP) was implemented in 90 communities across Azerbaijan in 2010. The focus was on income generation and the creation of wider economic opportunities. Together with our co-ventures we allocated US\$1,157,752 to the programme. We and our co-venturers supported many projects including:

- **Development of the Garadaghly community agricultural sector** This one-year project was launched in November, 2009, in Garadagly village of Ujar region. The project is implemented by Ganja Agrobusiness Association (GABA). The goal was to provide sustainable income generation tools for those members of the community involved in agriculture. As part of the project 140 farmers received training in soil improvement, livestock breeding, crop cultivation and business management. More than 4.8 thousand kilograms of fodder and vegetable seeds were provided to 150 farmers and a new fodder processing facility constructed. Some 1,785 people benefited directly from the initiative which was completed in December, 2010.
- **Developing Khatinly community** Another agricultural development project supported by us and our co-venturers was also implemented by GABA and covered Khatinly community. It began in June, 2009, and ended in December, 2010. A fodder processing facility and cold storage warehouse were designed and constructed. New crops to produce high quality fodder were introduced and biogas provided for organic fertilizer composting. A Limited Liability Company (LLC) was established to manage the new facilities. Around 2,400 people have benefited from this project.
- **Development of greenhouse agriculture in Goranboy communities** The third project that we supported and was implemented by GABA began in June, 2010, with the establishment of “greenhouse agriculture” in Azizbeyov, Yolpag, Nadirkend, Jinli Boluslu villages in Goranboy region. Twelve greenhouses were constructed and 23 training sessions provided to 332 community members. A total of 452 residents benefited from the project in 2010.
- **Improvement of Agstafa Agro Service Center (ASC)** Launched in August, 2009, this project ended in February, 2011 and was implemented by the Local Governance Assistance Public Union. Sixteen communities along the BTC and SCP pipelines in Agstafa region were targeted. The aim was to boost ASC productivity and expertise. Fourteen business development workshops were conducted and various services provided to the farmers. Around 300 people attended training sessions and 2,000 community members benefited directly.
- **Management of community micro projects** This project started in January, 2009, with a budget of US\$1,389,295. It was implemented by UMID Support to Social Development (SSD) and was designed to equip 39 communities from Agsu to Agstafa with the skills and resources required for sustainable socio-economic development. Within the initiative 39 micro projects were completed successfully. Community members attended a total of 148 specialised training sessions on leadership, team work, project management and contract development. The project ended in November, 2010.
- **Expansion of economic opportunities and community skills programme** Implemented by UMID SSD the 18-month project began in October, 2009, and takes in communities in Kurdamir, Ujar and Agdash regions. Its objective is to improve the local environment for entrepreneurship and to support youth employment. In 2010 44 apprentices received training and 30 apprentices were able to find a job. More than 160 capacity building workshops were conducted for community members and 11 business ideas originated in the communities were supported with grants worth of US\$60,000.

- **Provision of community-based support to dairy producers** The project implemented by UMID SSD began in October, 2009, and will last for three years. It aims to expand dairy production of small- and medium-sized farmers and promote regional collection centre linkages to commercial processors for the sustainable development of existing private dairy farming households and small farmers. The project's main funder is the United States Agency for International Development (USAID) and it is co-funded by BP in Azerbaijan and its co-venturers. A total of US\$86,000 in BP funds has been budgeted for this project, of which US\$60,000 was spent in 2010. In 2010, the project-related plans were prepared and submitted to USAID for approval. Public awareness sessions were held in seven regions, among 50 communities. Villages in five regions (Yevlakh, Goranboy, Samukh, Shamkir, GoyGol) were selected as target communities. Within the project's framework, seven milk collecting points and 25 milk processing points were surveyed. Two of the milk processing points were selected and an agreement memorandum was signed with one of them.

Supporting Youth Development

BTC Co. also funded a number of initiatives to improve the skills and capacity of young people in Azerbaijan:

- A project overseen by Umid SSD to improve the skills and revenues of young community entrepreneurs by encouraging them to act as a catalyst in the community business development process. The project will run through June, 2012.
- A year-long youth development project led by The Eurasia Partnership Foundation to enhance the economic and entrepreneurial opportunities of young people through experience in business start-ups and in micro-economic projects. Five Youth Funds were set up comprised of young people from ten target communities in five regions. Each Youth Fund had seven members who provided capacity-building and business training for others in their communities. Financial assistance through the Youth Funds was given to the best two or three business plans or micro-economic projects in each region. In total 100 young people benefited.
- The "Youth Employment and Economic Opportunities Expansion Initiative" led by Umid was focused on communities in the Baku Corridor. The objective was to provide young people with vocational and entrepreneurship skills and to support them either in finding a job or in starting their own business. The project lasted three years and ended in August, 2010. A total of 214 young people completed the courses. Of them, 145 were subsequently employed and 45 were enabled by Jump Start Economic Project grants to set up their own business.
- In December, 2010, a fourth project aimed at empowering entrepreneurship skills among the young got underway. It will run through June, 2012. Implemented by Azerbaijan Community Development Research, Training & Resource Centre, it offers skills development training. Some 600 young people are likely to benefit.

Supporting pre-school education

This project is designed to improve the quality of pre-school education at public kindergartens' and to broaden access to such facilities in Azerbaijan. It is run by the centre for innovation in education and began in December, 2010, and will last a year. It covers five communities in the Shamkir, Tovuz and Samukh districts and has a budget of US\$103,475.

6.2.2 Georgia

The CDI 2 programme which was launched in August 2006 was due to be completed in January 2010. However, to achieve a smooth transition process from CDI 2 to CDI 3 some of the activities of CDI 2 were extended until the beginning of the new, third phase program.

CDI 2 ended in mid 2010. Highlights were as follows:

- CDI 2 put effort and resources into communities having potential to develop further. A competitive grant process was initiated to encourage the Community Based Organizations (CBO) to participate. In total 57 projects were implemented, with a community contribution of 50%. Economic projects, such as irrigation and potable water system rehabilitation brought more benefits and had direct impact on households' livelihoods
- Fifty-one individual demonstration farms and 19 agricultural demonstration groups were established within CDI 2, bringing together a total of 151 individual farms, 15 producer groups, 10 service groups and 19 agricultural demonstration groups (consisting of 8 farmers each)
- Within CDI 2 more than 300 households received various agricultural services, from plot cultivation to livestock veterinary service. During the lifetime of the programme 381 farmers attended 1,469 individual and 342 group training sessions on different topics and consultations were provided during 3,234 monitoring visits, 15,407 kg various inputs were received and new technologies were adopted for better farming practices. As the result of these activities the programme achieved a 54% increase in potato production, 18% increase in wheat production and a 38% increase in cheese production. There was a 25% increase in revenues and net assets of the target beneficiaries (instead of projected 20%) over the baseline
- Eighty-nine young women entrepreneurs were granted approximately US\$800 to US\$1,000 per individual to start up initiatives that varied from agricultural production to social services to community members. Ninety-two percent of all funded businesses are operational.
- One hundred percent of all operational businesses led by women are successfully using basic accounting principles, 89% of women claim to have improved their financial-economic conditions while 79% have developed an individual income opportunities and increased their self-esteem and 58% of women improved their positions within their families.
- As part of the programme to support farmers to have better access to credit, 4,138 loans were disbursed including 16 loans issued directly to producer and service groups.
- Rehabilitation projects were implemented in 5 target schools. Five eco clubs within the target schools managed to implement 18 environmental projects focusing on the challenges relevant to the rural areas.

CDI 3 commenced in May, 2010 with CARE International (CARE) in Caucasus as the lead partner. The third phase of CDI will continue until the end of January 2012 with a total budget of just over US\$1.8 million.

CARE International will develop the strategy for localization of programme implementation partners. It will result in the transition of programme activities to local NGOs during the second year of CDI 3 under CARE International supervision.

At the start of CDI 3 CARE International has been working with two national NGOs to support communities implement and sustain self-help projects, thereby improving the livelihoods and opportunities for pipeline-affected communities through a partnership relationship with BP.

The 2 local organizations (working as CARE International sub-contractors) are the Centre for Training and Consultancy (CTC) and the Constanta Bank.

The following themes are being implemented to achieve the main goals of CDI 3:

- Community mobilisation;
- Infrastructure rehabilitation;
- Social entrepreneurship;
- Economic and agricultural development; and
- Support for business start up and provision of micro credit.

The main goal of CDI 3 is to enhance positive relations between BP and communities along the BTC/SCP pipeline route through sustainable socio-economic development. Two main areas - agriculture and civil society capacity building - have been identified as the most suitable areas for further intervention.

The main outputs of CDI 3 during the reporting year are as following:

- Proposals of 11 infrastructure rehabilitation projects were selected and implemented by communities with 50% of community contribution.
- As part of the strategy of CBO future development, CDI 3 works closely with at least 10 active and sustainable CBOs to establish social enterprise in villages.
- Training was provided to interested CBOs on social enterprise activities, organizational development skills, and business proposal writing. Eleven CBOs submitted business proposals. Selection of the better ones will be finalized during the first quarter of 2011.
- Continued work with 51 individual demonstration farms and 30 demonstration groups as well as with the service and producer groups established during CDI 2.
- Following increases in prices for combined fodder, assistance has been given to farmers in its purchase, with a 50% contribution required from farmers.
- Service group activities focused on carrying out treatment to livestock. A total of 70 services were delivered to 70 households.
- Thirty-one start-up grants were disbursed to 25 businesses through the competitive grants process.
- The program supported disbursements of agricultural loans within the subsidised loan scheme. 124 agricultural loans were disbursed compared with a target of 120.

The project "Farmers to Market" which commenced in 2008, will be completed in 2011. This project continues to operate within its themes, which are:

- Giving farmers increased access to agricultural product buyers via establishing 4-6 Consolidation Centres (CC);
- Giving farmers increased skills, knowledge and tools for improved marketing of their products.

As a result of the project operation 6 agricultural CC's were established. These CC are:

- One honey processing centre;
- Two milk collection and cheese producing centres;
- Two cereal collection and fodder producing centres; and
- One chicken egg collection and incubator centre;

All these CCs managed to purchase several products from target farmers and established chains to the market to support permanent product delivery.

The project outputs during 2010 were as following:

- 1,200 kg of honey was purchased from 40 farmers;

- 1,596 kg of honey was packed and 300 kg of packed honey was sold;
- Nearly 500,000L of milk was purchased from 480 farmers;
- 65,000 kg of cheese was produced and sold;
- 88 cereals were purchased;
- 25,000 kg fodder was produced and sold, (the remainder is being dried);
- 58,000 chicken eggs were purchased from 128 farmers; and
- A total of 40 new jobs were created by all CCs.
- The third agricultural trade show was organized. A total of 107 farmers participated in the event and 1500 guests, buyers and purchasers attended the show. Up to 120 buyers expressed willingness for future cooperation which resulted in exchanging contact information with over 40 farmers. Out of a total 45 MT of presented produce, 44.5 MT was sold.

6.2.3 Turkey

In Turkey 8 community investment projects have been implemented in 220 villages along the BTC route. Each project focuses on activities supporting income generating activities and capacity building of individuals, community based organizations and local authorities along the BTC route.

In early 2009 BTC Turkey developed a 3 year exit strategy (2009-2011) for on-going CIP's to ensure smooth transition of the roles and responsibilities from national Implementing Partners (IPs) to local organisations (most of which are cooperatives, village development foundations and unions established and supported under CIP since the start of CIP in Turkey).

In this context, within Turkey CIP, approximately 110 CBO's were supported in the following areas:

- Training provided on project design and implementation;
- Training on financial management and legal requirements for CBO's;
- General and on-the job training on the types of activities implemented by these organizations such as milk collection, fodder crop production and animal husbandry;
- Training on networking and fund raising from other donor organisations; and
- Financial support to CBO's to realize their projects.

These Village based organisations (cooperatives, village development associations, unions etc) are the back-bone of the exit strategy in Turkey. The aim is to develop strong organizations (financially and technically) which can continue to provide socio-economic benefits to their communities without the need for national development institutions or BTC in the future.

In order to manage this transition from national IPs to local partners, BTC provided significant support to national IPs to develop their exit strategies for each project region (in line with the principles defined in the BTC CIP exit strategy) through training, workshops and one-on-one technical consulting during the design and implementation of projects.

In 2010, BTC engaged external development experts who provided technical assistance both to the CIP IPs and local organisations on various areas such as the identification of the risks and gaps in the implementation of the exit strategy, and development of action plans for local organizations through general workshops, focus group training and field visits.

In other words the 2010 annual strategy was designed and implemented with the purpose of raising awareness of local stakeholders to take over project missions after 2011 exit as defined in the 2009-2011 BTC exit strategy described above. Therefore

Projects focused on ensuring the sustainability of the local organizations which were established in pipeline affected settlements.

As a result of this strategy, almost all of the village based institutions implemented at least 1 project and managed to leverage approximately US\$7,000,000 from other development institutions (primarily from government agencies).

Ardahan-Kars Sustainable Rural Development Project implemented by SURKAL Association in 63 villages in Ardahan (37 settlements) and Kars (26 settlements) provinces

A summary of highlights on key achievements in community development projects is as follows:

- Ardahan and Kars projects were integrated by mid-2010 due to financial and logistical advantages in management of the community development projects at the Georgian border.
- In Ardahan, 1 of the main objectives of the project is capacity building of 2 local Agricultural Development Cooperatives (ADCs) which are engaged in milk collecting activities in 6 villages in cooperation with 550 milk producers. As a result cooperatives have:
 - adopted a more transparent governance mechanism
 - increased the number of milk producers and production capacity: For example, in 2010, Damal ADC realized a 57% increase in amount of milk collected.
 - increased the capital for investment with US\$546,700 as an advance payment to producers to purchase 2,150 tons of milk in 2011.
 - learned how to fund raise to implement their additional activities. Hasköy ADC has leveraged US\$16,000 from its members and local government to establish a milk collecting facility whereas Damal cooperative developed an action plan to increase the use of Machinery Park by villagers.
 - initiated veterinary support including protective vaccination to 3,000 milk producers and awareness training to 500 cooperative members.
 - supported Ardahan Governorship to organise “Ardahan District Livestock Breeding Problems and Resolutions Seminar” with the participation of 86 leading producers, cooperative management/members and local authorities.
- The Project’s target group in Kars province comprises 2,652 households (over 17,000 individuals) in 26 villages in Merkez, Susuz, Sarıkamış, and Selim districts.
- In Kars, the Project supported animal husbandry through capacity building of Kars Cattle Breeders’ Union (CBU). The Project exceeded its targets in 2010, as described in the following section:
 - The project raised awareness on animal health; protective vaccination was given to approximately 33,000 animals in the project villages and infection rates for septicemia decreased from 40% in 2005 to 5%.
 - One thousand farmers received general training on animal husbandry and 327 producers from 22 villages received training on combating animal diseases. Twenty-seven women from villages were trained as intermediary staff on mastitis.
 - As a result of comprehensive technical and financial support provided to CBU, the following targets were achieved:
 - CBU opened 2 new offices in Sarıkamış and Selim districts on the BTC route, providing veterinary support to farmers;
 - The number of CBU members increased to 4,200 individuals;

- 1,096 animals were artificially inseminated;
- 1,338 households benefited from a 112% increase in fodder crop cultivation area. This yielded 21,414 tonnes of fodder; enough for 14,100 animals.

Erzurum Sustainable Rural Development Project implemented by University of Atatürk in 63 villages in Erzurum Province

In Erzurum Project, high levels of technical and financial support were provided to the Erzurum CBU in order to improve animal husbandry activities in the villages along the BTC route. The CBU became more active in providing veterinary support to producers in Erzurum. In 2010, the following results were achieved:

- The Erzurum CBU completed preparation activities to open 2 new branch offices in the districts along the BTC route;
- The number of members of the CBU increased 45% to 631;
- The number of sick animals decreased more than 90% as a result of successful application of liming in 6 project villages;
- Protective vaccination was given to 20,345 animals and 205 cattle from 88 households were treated.
- CBU and its activities were presented in all project villages and 600 brochures were printed.
- Technical visits were organized for the management of CBU and other cooperative leaders.
- The project supported the Vegetable Producers Association (VPA) and 11 other Agricultural Development Cooperatives in the villages along BTC route.

Erzincan-Gumushane Sustainable Rural Development Project

The Erzincan-Gumushane Sustainable Rural Development Project has been run by PAR Consulting since June 2003 in 49 settlements across 2 provinces. In 2010 it helped to establish the Erkadin Women's Cooperative. This acts as a women's social centre and supports alternative income generation, raises awareness on health and nutrition, and supports the enrolment of women in formal education.

Sivas Sustainable Rural Development Project

The Sivas Sustainable Rural Development Project, launched in 2004, has been implemented in 54 villages of Sivas province. One of the aims of the project is "to promote organic production" in order to increase household income. Its target group consists of 260 households living in 22 villages. The highlights of 2010 were:

- Techniques of greenhouse production have been explained to villagers in Sivas: There are now 260 greenhouse facilities across 22 villages, giving a total area of 12,500 m², of which 7,000 m² is managed by women.
- A local NGO, Ulaş Development Association (UKDER) was established. This will takeover the project's mission on undercover and organic agricultural production after BTC's exit. In 2010, UKDER produced 36,000 seedlings and carried out organic cereal farming over an area of 120,000 decares in Sivas with 650 producers.
- Strawberry production was introduced to the region. 156 producers received strawberry seedlings and on the job training from the BTC CIP project.
- Activities were carried out to widen the production and use of high-quality fodder crops. Production increased to 12,640 decares of land with all seed costs met by the producers.

Kayseri and Kahramanmaraş Sustainable Rural Development Project

The Kayseri and Kahramanmaraş projects were integrated in mid-2010 under IP PAR Consultancy which since 2004 has been implementing the Kayseri project in 33 villages and the Kahramanmaraş project in 29 villages.

In Kayseri the main focus of the project is to promote fruit and greenhouse production and to support the producers' unions, which will take over the role of the IP in the future. The following summarises the achievements of 2010:

- Approximately 40 households planted fruit trees in 11 villages, with the total number of orchards reaching 78. After installing trial orchards in 2006, established dwarf and walnut orchards' plots have now reached 460 hectares. The average annual income was US\$800 per producer from the 700 m² plot in 2010.
- After these demonstration fruit gardens, the demand for fruit production in the region has increased. In 2010, 20 households in 11 project villages established their own orchards. Technical assistance was provided to 19 households from 7 non-project affected villages.
- The total size of the greenhouses was 3,206 m², established by 18 households. Additional greenhouses, which were established due to project impacts, has reached 5,000 m².
- Support was given to agricultural consultants from Directorate of Agriculture who will take over regular control of the orchards after CIP exit.

The Kahramanmaraş project has initiated raspberry and blackberry production in Andırın and under-cover vegetable production in Göksun District. The following summarises the achievements of 2010:

- The total area of raspberry and blackberry gardens increased from 49 to 55 decares. 30 tons of fruit were harvested and sold to an ice cream factory or at the local market.
- Technical assistance and on the job training was given to 83 farmers from 9 villages.
- 8 project-supported greenhouse vegetable producers sold 38 tons of cucumber and 21 tons of tomato.
- Two project supported greenhouse producers produced 15,000 cucumber and tomato seedlings, an activity critical for the sustainability of this activity.
- Training on silage production was provided to 82 farmers.
- Support was given to an Andırın Cherry Producers Union project to establish a 1200 tonne capacity cold storage facility. This was submitted to DOĞAKA (Regional Development Agency) which has approved funding a US\$934,000 budget. The project will also benefit raspberry and blackberry producers who experience difficulties in storing products.
- Technical support was given to the Andırın Sub governorship to develop two projects to be submitted to the Regional Development Agency. These projects were: "Marketing the Exportable Agricultural Products" and "A feasibility study on cold storage house". Both projects were approved and implemented, with a total budget of US\$23,000.

Adana-Osmaniye Sustainable Rural Development Project

Adana-Osmaniye Sustainable Rural Development Project was launched in 2004 and has been implemented in 32 settlements in Adana and Osmaniye Provinces. The focus of the project has been supporting income generation through improving agricultural activities and supporting animal husbandry.

In 2010, a two pillar programme was performed; to increase the productivity of the dominant production form in the region and; to spread alternative products through the *Leader Farmers Program* and *Model Implementing Areas (MIAs)*.

The following summarises the achievements for 2010:

- Seventy-eight model implementation areas were established in collaboration with the Leader Farmers. The impacts of the Model Implementing Areas on production, such as sulphur application, shattering the soil chunks and application of appropriate fertilizers to improve the quality of the soil, were investigated. According to harvest results, 31% increase in wheat, 33% increase in peanut and 4% in cotton were confirmed, which created a significant increase in their seasonal income;
- Sulphur usage campaign for soil improvement was completed on a 20,000ha area in villages of Ceyhan. A sub-soiling process was performed on more than 4,000ha agricultural land;
- Nine producers from 6 villages cultivated approximately 145ha of land with alternative products such as onions, melons, beans, peppers and cucumbers. If compared with the regional average wheat production, this produced additional profits of 333% for melon producers, 1,200% for onion producers and 100% for bean producers. 4 producers gained Good Agriculture Practices Certificate.
- A harvest day was organised in November with the participation of 110 people including local authorities, head of agricultural cooperatives, leader farmers and other volunteer farmers. The yield of a field, where maize was cultivated as a second product was 959 kg per hectare, an increase of 209 kg on the previous year.
- Support to fishermen around the CMT continued in the form of vocational training, and supporting entrepreneurs such as hairdressers and support for pensions.
- The project continued providing input and marketing support to the Fisheries Cooperative in Gölovası. The project established a cold storage facility. With the marketing support, fishermen made approximately 23% profit from the sale of shrimp.

6.2.3.1 Summary of the RDI Programme

2010 was the fourth year of implementation of the RDI programme in Turkey. During the year 2 RDI projects were completed, making total 4 projects completed since the start of the RDI in 2007; 2 have continued and 2 new projects were launched.

PROJECTS COMPLETED IN 2010:

Technical Assistance for Management of the Antakya Landfill Facility in line with International Standards

This project aimed at developing the capacity of the Antakya Municipality and the operator company who manages the landfill facility. Capacity building was in line with EU standards. This mitigates HSE risks that BP's operator (BIL) faces in sending all of its domestic waste to the Izaydas landfill facility (close to Istanbul) from AGIs along the pipeline route and from CMT.

The major achievements of the project can be summarised as follows:

- Alignment of the construction design of the first landfill area constructed by the Municipality with the EU standards;
- Development of environmental management plans for the facility;
- Training of both Municipality and contractor company staff;
- Construction of a new landfill lot which is almost 3 times bigger than the original landfill site in line with the EU standards. Approximately US\$2,000,000 was allocated by the Municipality as matching funds;

- 49 Municipalities benefited from the facility as well as companies in the region (including BIL);
- Another project has been developed to reinstate the previous wild waste dump site close to this new landfill facility. The project is approved by MoEF. Negotiations are on-going with the Ministry to finance the reinstatement activities;
- An opening ceremony was organized together with BTC Co. and the Antakya Municipality. BTC Co.'s operator, BIL, signed a protocol at the opening ceremony to send their domestic waste to this facility giving over 60% cost saving for BIL and a significant reduction in H&S risks due to a shorter distance for waste transportation.

Industrial Symbiosis (IS) Project in the Iskenderun Bay (close to CMT) - Phase I (Feasibility)

The project Towards an Industrial Symbiosis Programme in Iskenderun Bay Area – Phase I, implemented by UNDP Turkey with the cooperation of the State Planning Organization, was finalized in 2010 concluding that IS implementation in Iskenderun Bay is feasible. This created interest and awareness from industries and governmental agencies in the region. It also identified several areas for potential synergies between industries in the region. Other outcomes of this feasibility project included:

- Several one-on-one and group workshops with industries in Iskenderun Bay were held with over 100 companies attending;
- Linkage with National Industrial Symbiosis Programme (NISP) in UK and Canada - through an international workshop organized in Turkey.
- Feasibility report was completed which concluded that there are many areas for IS in the Bay.
- Engagement of the Turkish Technology Development Foundation (TTGV), Middle East Technical University (METU) and NISP in UK as the best suitable partners for the implementation of the project.
- One pilot IS cooperation between 2 iron and steel companies and a cement company is on-going.

NEW PROJECTS:

Industrial Symbiosis Project in the Iskenderun Bay - Phase II (Implementation)

Following the feasibility study, another project is developing concrete IS examples in the region and, working with relevant Ministries in Turkey, a national IS programme model. The project agreement was signed with TTGV, which will cooperate with NISP in UK and METU in Turkey during the implementation phase in 2011.

Ceyhan Fire and Natural Disaster Training Centre (CEYDEM Project)

The Ceyhan Fire and Natural Disaster Training Centre was initiated with a protocol signed between the Çukurova University, Search and Rescue Association (AKUT-NGO), BIL and BTC Co. The project aims to strengthen in-country capacity to ensure effective management of the potential risks associated with fire and natural disasters in Turkey. Project milestones include the establishment of a fire training ground at the Ceyhan Vocational High School premises with its related facilities; launch of a Fire Fighting and Civil Defense Programme which will be initiated by the University of Cukurova, to train young workforce members and provide employment as well as a capacity building programme that will be provided in Ceydem Facility by providing a Management of Fire and Natural Disaster Programme Certificate for the benefit of public and private institutions.

The design of the fire training ground is almost complete and has been done by Tekfen Engineering Company as an in-kind contribution to the project. The construction will be completed in 2011.

ON-GOING PROJECTS IN 2010:

Employment and Enterprise Development Based on Inter-sectoral Cooperation in Çukurova Region – Phase II

The project has continued to support employment, Small and Medium Enterprises (SME) capacity development and entrepreneurship in 2 provinces and over 40 settlements around CMT. Highlights include:

- 722 unemployed people received career development training (242 of these people are employed).
- 256 people received additional vocational training from the National Employment Agency (ISKUR), of which 72 were subsequently employed.
- 219 unemployed people benefited from job application skills training.
- 400 career advisors (teachers) were trained to help undergraduate students in the region.
- 70 people have benefited from Employment Guaranteed Training and 50 of them were employed.
- Training on business start-up was provided to 253 entrepreneurs. Afterwards, 36 enterprises were established.
- The number of SMEs engaged by the project increased to 96, of which 83 of them benefited directly through participating in training.
- Continued support was given to the improvement of project development skills of local stakeholders and beneficiaries. A total of US\$950,000 was awarded to 6 projects developed by the project team.

Credit Guarantee Fund Project (CGF)

The CGF Project has continued to support entrepreneurs and MSMEs by providing access to bank finance. By the end of 2010 over 61 SMEs requested guarantees totalling US\$3,357 million (5.3m TL). The guarantee amount provided from the project reached US\$2,540 million (4m TL). In total by 2010 US\$1.5 million had been granted to CGF by BTC under this project.

Monitoring results showed that all MSMEs used this credit for investment purposes and increased the capacity of their enterprises. As a result, over 100 additional jobs have been created along the pipeline route.

Budget details for completed RDI projects are presented in Table 6.6

Table 6.6: Completed RDI Projects in 2010

Project	Partners	BTC Grant (US\$)	Partner Contribution (US\$)	Total project Funds (US\$)
Towards an Industrial Symbiosis Programme in Iskenderun Bay Area – Phase I	UNDP Turkey	106,500	67,500	174,000
Technical Assistance for Management of the Antakya Landfill Facility in line with International Standards	Municipality of Antakya & İSTAÇ	360,000	2,000,000	2,360,000
TOTAL		466,500	2,067,500	2,534,000

Current projects which are being implemented together with the Government and other development institutions are summarized in Table 6.7 below.

Table 6.7: Budget of On-going RDI Projects

Project	Partners	BTC Grant (US\$)	Partner Contribution (US\$)	Total project Funds (US\$)
Supporting the SMEs to bank credits on BTC Pipeline Route	CGF TC. Ziraat Bankası	2,000,000	2,000,000	4,000,000 (x5 leverage from Banks = US\$20 M)
Employment and Enterprise Development Based on Inter-sectoral Cooperation in Çukurova Region – Phase II	ISKUR and National SME Development Agency (KOSGEB)	1,370,000	2,032,000 (ISKUR) 1,180,440 (KOSGEB) 950,000 (not planned but leveraged through additional projects developed and submitted to Regional Development Agencies.	5,532,440
Ceyhan Fire and Natural Disaster Training Center (Ceydem Project)	AKUT-NGO BIL	461,600	592,500	1,054,100
Industrial Symbiosis Implementation Phase II	TTGV METU NISP UK	443,204	118,992	562,196
TOTAL		4,274,804	6,873,932	11,148,736

The following project concepts are in the design phase:

Table 6.8: Planned Projects in 2011

Project	Partners	BTC Grant (US\$) (Tentative)	Partner Contribution (US\$)	Total project Funds (US\$)
Capacity Building of Municipalities on p/p Route on Emergency Response Management (fire and natural disasters)	TBD	150,000	TBD	TBD
Establishment of a Business Enterprise Center Project in Ceyhan (close to CMT)	TBD	250,000	TBD	TBD

6.2.4 CIP Expenditures 2010

CDI expenditures for the total Operations phase and for the year 2010 are summarized in Tables 6.9 and 6.10.

In Georgia CIP II expenditures for 2009 included expenditures associated with the CIP II 3rd year contract, which was completed in July 2009, but was extended until the end of 2009.

**Table 6.9: Operations Phase CIP II Budget and Expenditures (US\$), 2006-2010
CIP III budget for 2010 (BTC/SCP only)**

	Azerbaijan	Georgia	Turkey	TOTAL
CIP II - CIP III (BTC/SCP) CDI (WREP) Budget	8,165,097	5,687,295 ¹⁶	12,495,000	26,347,392
Total Spend up to the end 2010	7,794,164	5,285,420	12,135,000	25,214,584

Table 6.10: Summary of BTC/SCP CDI Expenditures (US\$), 2010

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	855,000	1,462,438	2,400,000	4,717,438
Actual 2010	663,640 ¹⁷	1,254,846	2,399,000	4,317,486

6.2.5 CIP Budget, 2011

The BTC CIP II budget for 2011 is presented in Table 6.11 below.

Table 6.11: BTC CIP II Budget (US\$), 2011

	Azerbaijan	Georgia	Turkey	TOTAL
Budget 2011	856,000	1,368,239	2,100,000	4,324,239

7 E&S MONITORING PROGRAMME

7.1 INTERNAL MONITORING

Internal monitoring takes place on a daily basis, as required, or through theme audits and reviews. In some cases the review might result in actions and recommendations for implementation.

Non-compliances are only raised by BTC or BIL in certain circumstances, generally for persistent issues that need management attention. If the matter can be rectified in a timely manner through local site intervention, a non-compliance is not generally raised. The status of all internal non-compliances raised is given in the relevant country sections in this Chapter.

BTC has also developed a set of tools to assist in the management of E&S issues including detailed monthly reports and quarterly performance reviews.

Detailed summary of internal ESMS monitoring commitments completed during the year is provided in Section 4.2 and monitoring results in Appendix 2.

¹⁶ CIP II 1st year contract value was \$1,470,000; CIP II 2nd and 3rd year contract value is \$2,390,000. 6 months extension value is \$92,214. 6 months extension 233,680; the project "Farmers to Market" within 2006-2010 is \$435,448.; includes CIP III budget for 2010 – \$ 953,716, and WREP CDI budget for 2010 - \$160,700

¹⁷ Actual commitment based sum.

7.2 EXTERNAL MONITORING

7.2.1 Host Government Monitoring

7.2.1.1 Azerbaijan

During 2010 MENR was informed of the following monitoring activities:

- Translocation of *Iris acutiloba* from GCP to BTC ROW
- Erosion control works at the WREP, BTC & SCP River Crossings

The essences of these communications were:

- GCP is planning to construct a new Cement Plant with dry kiln. During the environmental survey conducted by GCP it was discovered that the area includes species of *Iris acutiloba*, which is included in the Red Data Book of the Republic of Azerbaijan. MENR was informed about the agreement between BP and GCP to re-allocate the irises from the Garadagh Cement Plant (GCP) construction site in Shahgaya West limestone quarry to sites along the BP operated BTC Pipeline Right of Way as a receptor area.
- As a condition of MENR approval for the Small Scale Erosion Control Works at river crossings on the BTC/SCP and WREP ROWs, MENR was updated about BP planned erosion control works at the WREP, BTC & SCP River Crossings. Upon completion of these erosion control works MENR representatives will inspect the river crossings and review the activities that took place in 2010.

7.2.1.2 Georgia

BP coordinated bi-weekly meetings with Georgian Oil and Gas Corporation (GOGC) and the Ministry of Environment. Other meetings were held with high officials of the various ministries such as Ministry of Energy, Economy and Sustainable Development, Infrastructure, Internal Affairs, Finance, and different State departments and regulatory bodies.

7.2.1.3 Turkey

No Host Government Agreement (HGA) monitoring occurred for BTC Turkey within 2010

7.2.2 NGO Monitoring

7.2.2.1 Azerbaijan

No NGO monitoring took place in 2010.

7.2.2.2 Georgia

Due to lack of interest from NGOs towards BP/BTC operations in the country, formal NGO monitoring of BP/BTC activities in the country has stopped. Informal activities and engagement continued however to keep the NGOs and general public informed about BP's operations. In September 2010 BP took part in the forum organized by the United Nations (UN) Global Compact Georgia network and used this opportunity to present its sustainability report and provide an update on ongoing company activities. In addition to the face to face engagement efforts when requested and through various forums, BP Georgia makes its Sustainability Report available for public on www.bpgeorgia.ge.

More information is provided in Section 8.3.2.

7.2.2.3 Turkey

In Turkey a facilitating/capacity building organisation is not being used. As many national NGOs are already involved in the Project their experience is generally greater so there was a lack of demand for a facilitated scheme. Notwithstanding this, BTC Co. and BIL continued to engage both national and regional stakeholders to discuss specific issues on an as needed basis.

7.3 TRAINING

7.3.1 Azerbaijan

Training for BTC Operations continued to be delivered to both BTC Co. and contractor staff through a variety of media including formal classroom training, tool-box talks, roll-out of respective environmental procedures, aspects and impacts, objectives and targets, etc. on the base of developed Environmental Training matrix. Training was provided on key operational environmental issues such as waste management, emissions management and Health, Safety, Social and Environment (HSSE) Policy. In addition, training on specific topics such as cultural heritage and faunal protection was given to ROW personnel. The environmental element in HSE induction has been updated in order to fulfil awareness of all new staff arriving at BTC facilities.

7.3.2 Georgia

Training for BTC Operations in 2010 focused on site specific environmental aspects and impacts management and pollution prevention. Other key topics included site personnel training on the following: a) Environmental Management System (EMS) and ISO 14001 awareness, and b) waste management.

Training was delivered mostly at sites through formal classroom training as well as toolbox talks.

7.3.3 Turkey

In Turkey, BIL continued to provide environmental and social training to operations, maintenance teams, subcontractors, etc.

Environmental Training

Environmental training topics were wide in scope and have been tailored to the departmental teams according to their roles. The topics included:

- Waste management (segregation, collection and storage)
- Legal requirements
- Role specific training to drivers
- MSDS awareness
- Chemical handling and storage
- Oil spill response

Separate HSE workshops carried out by BIL with key contractors (e.g. snow clearing and general services contractors) regarding HSE standards, trainings and expectations.

In addition, BTC Co. held number of workshops under Capacity Building Programme for BIL. The ultimate goal for the 2010 programme was “BTC Operations meeting legal environmental commitments; the environmental performance is continually improving and EMS is efficient” and the objective was to achieve minimum awareness on the logic and use of environmental monitoring and the logic and key specifics of environmental facility operations.

Social Training

BIL Public and Community Relations Experts (PCREs) provided training to all new employees of BIL and contractors as part of the orientation programme. In total 73 employees were trained in 2010 on the following topics:

- Community Relations (Organization & Responsibilities)
- Complaints & Compensations
- Employment
- Procurement
- Safety (Traffic & Pipeline Safety)
- Land Use / Restrictions
- Code of Conduct
- Audits (Internal and External)
- Responding to Media
- Community Investment Programmes
- Refreshment of PCR Training
- Communication Skills

Total number of trained personnel up to the end of 2010 summarise in Table 7.1.

Table 7.1: Summary of Social Training Programme

Training Titles	#of BIL Staff	#of BIL Contractors
Community Relations (Organisation and Responsibilities)	800	350
Complaints & Compensations	800	350
Employment	800	350
Procurement	801	350
Safety (Traffic & Pipeline Safety)	842	354
Land Use / Restrictions	843	359
Code Of Conduct	1	340
Audits (Internal and External)	1	340
Responding to Media	802	350
Community Investment Programmes	796	350
Refreshment of PCR	63	52
Communication Skills	10	-

In 2010, separately, BIL Environment Team received trainings on below topics:

- ROW Coordination
- Oil Spill Response (OSR) IMO Level 1 Training
- MoEF EIA Training
- ISO 14001 Lead Auditor Training

BTC Co. personnel have also attended individual training sessions on following topics:

- First aid
- Pipeline engineering
- Legal College
- OMS
- Anti-Bribery and Corruption
- IMT & Oil Spill
- Oil Spill Response Documents and Tools Familiarisation

- Project Tax Provisions of Turkish HGA
- Health and Safety (H&S) Induction and Performing Authority
- Budget Responsible Officer.

8 PROJECT COMMUNICATION

8.1 CONSULTATION APPROACH

Consultation and communication with various Project stakeholders, from communities to Government organisations, was ongoing during 2010 with the key objective being to avoid situations that could lead to complaints. Where complaints do arise, as is inevitable for a project of this size and complexity, effort is made to ensure they are resolved promptly. Information on complaints raised by project-affected communities is detailed below.

Across the Project, significant efforts were also made to engage other Project stakeholders, government ministries and the local and national media. Information on meetings held with key stakeholders in 2010 is provided below.

8.2 AZERBAIJAN

8.2.1 Project Affected Communities

There were a number of community relations initiatives launched by the Operation's social team in response to various requests from Project Affected Communities.

In 2010, the Community Liaison Officers conducted Community Consultation Meetings with affected landowners, land users, local government and municipality officials covering a wide range of topics on: general information about the BTC pipeline and affected communities, roles and responsibilities of the Community Liaison Officers in relation to community issues, complaints management, land use restrictions, community safety, oils spill awareness, community development projects, waste management, and compensation payments. At the beginning of 2010, the operations social team planned 105 consultation meetings in the AGT pipelines' affected communities. Due to administrative changes in the regions, which involved merging and division of municipalities, this number increased to 108 at the end of the year. Moreover, the CLOs meet with communities, local administrations and enterprises functioning along the route at the beginning of each year to exchange the information on the planned activities and visits. Apart from these meetings, the CLOs meet with communities on a regular basis to give information on restrictions related to grass fires, irrigation, and usage of equipment within the pipelines' corridor.

8.2.1.1 Complaints

In 2010, the number of complaints received from the BTC/SCP pipelines affected communities significantly reduced. Within a year, the operations social team registered only 2 complaints, which is 75% less comparing to the previous year. Both complaints received in 2010 together with one on the subject of land use remaining from 2009 were resolved by the end of 2010.

Table 8.1: Summary of Complaints received by BTC/SCP, 2010 (Azerbaijan)

Complaint Category	Complaints received	Complaints open at end of 2010
Reinstatement	1	0
Damage to property	1	0
TOTAL	2	0

8.2.2 NGOs and Technical Organisations

Regular meetings were held by Community Liaison Officers and the Sustainable Development Initiatives Team with a range of national (Umid, Madad, GABA, LGA) and international (Junior Achievement Azerbaijan, Save the Children, FINCA) Implementing Partners to discuss progress of Community Development Initiatives.

8.2.3 Government

Communications with Government during 2011 are discussed in Section 7.2.1.1.

8.3 GEORGIA

8.3.1 Project Affected Communities

The BTC Social team continue to work with the villages and communities in the vicinity of the pipeline on a regular basis. The BTC Social team maintains regular contact with village communities, engaging with village heads and trustees, local residents, complainants, landowners, regional Governors and gamebelis. CLOs raise awareness of BP and its activities, discuss safety issues, concerns relating to land use with the communities. To reinforce messages about pipeline safety we have developed a community calendar for 2011 and booklets about pipeline protection zones. The community calendar also contains information about some of the projects and programmes, initiated and funded by the Company and its Oil and Gas Co-venturers.

A summary of the main activities conducted in 2010 is as follows:

- The Social team continued working with Contractors both at management and field level to ensure understanding and compliance with social commitments. Social Awareness Training to increase knowledge about company social commitments, grievance management, social risks and company expectations was conducted at all sites for key Operations staff and contractors dealing with civil works, waste management, catering, pipeline patrol services, pipeline cathodic protection, etc. In total, 150 people were trained;
- In order to ensure the BTC Co. and its contractors' compliance with Employment and Training Management Plan of ESAP, the BTC Social teams conducted audits in employment practices of our 4 main Contractors. A number of positive observations were made, besides some findings were identified and recommendations were given to respective contractors, which are due to be closed out by the end of 2011.
 - Transport Access Procedure for Operations phase was developed. The procedure describes the routes which are used during the operations period of BTC pipeline. The routes were identified and approved several years ago, and in 2010 social risks were re-visited and an updated version of the routes was issued.
- Social impact assessment was conducted for Secondary Containment Sites Velocity testing.
- All actions identified in the RAP Completion Audit report (draft version) were closed out, and all actions from the 2009 internal CLMP audit (Community Liaison, Infrastructure and Services Management Plan) were completed on time.
 - APS (Activity-Product -Services) list was reviewed and finalized. The APS profiles list the exact references to the legal documents, legislation, HGA, ESAP, etc. APS list had been introduced with the purpose of Exports Compliance Management Framework implementation and to demonstrate that processes and procedures applied in our operation are in compliance with known international best practice/standards. This was the S&OI audit action item.

Social commitments and requirements identified in various legal documents were interpreted into specific tasks, which were verified as per CTM verification process. Social tasks are already entered into and tracked through the live system, CTM.

8.3.1.1 Complaints

The Company continued effective management of the 3rd Party Complaints Procedure. Communities are aware of how they can raise grievances and CLOs helped them to lodge complaints when necessary. During 2010, 28 complaints were received of which 27 have been closed. The resolution of the outstanding complaint is still being resolved. Table 8.2 gives breakdown of complaints categories. There remain 2 outstanding complaints from 2007 for which BTC has resolution plans in place.

Table 8.2: 2009 Complaints Log Statistics (as of December 2010)

Complaint category	Total number received to date	Number of complaints resolved	Total % of complaints resolved	Number of complaints pending
Additional Land	0	0	100%	0
Land Handback/Reinstatement	3	3	100%	0
Orphan Land	0	0	100%	0
Other Land Issues	8	8	100%	0
Access Restricted/Abolished	1	1	100%	0
Inventory/compensation disagreed	6	6	100%	0
Parcel Ownership or Size	0	0	100%	0
CBO Compensation	0	0	100%	0
Community Infrastructure	2	2	100%	0
Household Infrastructure	2	2	100%	0
Bee-Related	1	1	100%	0
Irrigation	4	3	75%	1
Cracked house	0	0	100%	0
Employment	0	0	100%	0
Other Social Issues	1	1	100%	0
Miscellaneous	0	0	100%	0
TOTAL	28	27	96%	1

8.3.2 National NGOs and Technical Organisations

In 2010, BP/BTC continued to engage with national NGOs through a range of different initiatives. These initiatives are:

- Environmental Investment Programme
- Community Investment Programme
- Different cultural heritage initiatives.

BP/BTC also actively participates in the different conferences and forums organized by the UN Global Compact Georgia Network. This creates an excellent networking opportunity with different stakeholders: NGOs, businesses, other national and international organizations.

8.3.3 Government Ministries and Departments

Close contacts were maintained with GOGC, including by-weekly meetings with the Ministry of Environment, Georgia (MoE) involvement. Relationships continued with various ministries and departments. There were positive outcomes for a number of important issues including BTC EDDF acceptance into operation, issue of the Presidential Decree about BTC (and all other pipelines) Safety Zone regulations, and GoG sponsored 3rd party major projects in ROW.

8.3.4 Media

During 2010, various media activities took place in Georgia. These included:

- A communications plan which was developed to broadly communicate Sustainability Report
- A press release which was issued and interviews recorded during the Award Ceremony of Eco-Awards Programme involving BP management, government, scientists, local NGOs and media.
- A BP leaflet covering BP's activities in Georgia which was developed and distributed within major stakeholders including media.
- A press release which was issued regarding the first graduation ceremony under the Project Management college project.
- A press release which was issued and interviews recorded with BP's General Manager during the Food Safety Programme launch event attended by Georgian government, international organizations, businesses and media.
- A press release which was issued and interviews recorded for the Energy Efficiency Week initiative supported by the Energy Efficiency Programme, Energy Bus Project. The initiative was attended by Georgian government, international communities, businesses, NGOs and media.

8.3.5 Donor Organisations

BP/BTC continued to meet with various development organizations in Georgia including: UNDP, USAID, World Bank, International Finance Corporation (IFC), Millennium Challenge Commission Georgia and several national and international NGOs.

BP/BTC and its co-venturers, in collaboration with a number of international organizations, continue to implement a number of projects in Georgia, including: Corporate Governance Project (IFC), Energy Efficiency Project (USAID, European Bank of Reconstruction and Development [EBRD], OSCE,), Georgia Food Safety Project (IFC); English Language Programme for Media (OSGF, British Council); Road Safety Project (USAID, Government of Netherlands), Support to International School of Economics (OSGF, SIDA, USAID, Government of Norway).

Regular talks with donor organizations and participation in different coordination meetings continue with the aim of defining potential areas for future engagement.

8.4 TURKEY

8.4.1 Consultation

8.4.1.1 BIL

There have been a number of organizational changes in the Public and Community Relations (PCR) Team of BIL in 2010. The head of the BIL PCR department changed 3 times until Q3 2010. PCR Chief who had been working in the project since 2003 was

re-assigned to PCR Chief role in August 2010. In order to improve the capacity to Third Party Crossing Projects, Land Supervisor, who was working under PCR department, moved to the Technical Management Department in 2010

Recruitment of back to back personnel for PT1, PT3 and PT4 to manage community relations issues remained same during this reporting period. BTC Co. CSR Team closely monitored the relationship with communities around Pump Stations and on the pipeline route through direct site visits to the villages either with PCREs or with Community Investment Implementing Partners.

In 2010, BTC Co. organized 2 workshops for the BIL PCREs in Ankara. The aim of the first workshop was to increase coordination and cooperation between the PCREs working in different regions; exchange experiences between the PCREs; discuss the on-going problems and agree on the priority actions. The second workshop aimed to train the PCREs on Awareness Campaign on land use restrictions (use of materials, methodology, planning, etc.) as well as help them to understand the use of GIS which is critical for implementation and monitoring of land use violations.

In spite of significant changes in the BIL PCR organization, there has been a continuous improvement in the community relations activities during this reporting period with the support of BTC Co.

The main highlights of the activities conducted in 2010 are as follows:

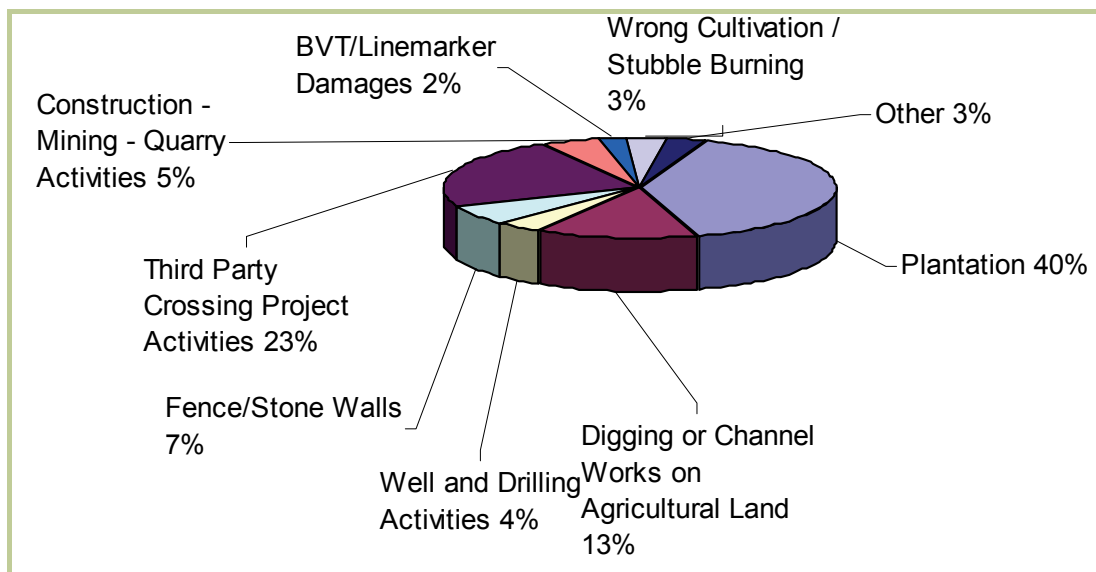
- **Resolution of on-going reinstatement complaints** identified in all villages along the pipeline route in late 2008 has been one of the most important activities carried out with the supervision of PCREs in 2009 and 2010. As explained in the previous reports, BTC Co. and BIL visited all villages and interviewed landowners/users to ensure any remaining issues from the construction or post construction phase were identified and resolved in late 2008 and 2009. All of the recorded reinstatement related complaints in Lot A and Lot B (in total 223) were resolved in 2009. The 30 of the remaining reinstatement complaints in the Lot C section of the pipeline were resolved in 2010. Complaint close out forms were signed by each landowner in line with the Grievance Procedure. The reinstatement activities for the remaining open items which were not closed out due to winter conditions in 2010 will be completed in the first half of the year, January to June (H1), 2011.

BTC Co. and BIL PCREs will continue to monitor the status of land on the ROW and take additional measures in case of a valid complaint or in case of any risks related with the erosion and geo-hazard, etc. in line with EIA and RAP requirements.

- **Management of Third Party Violations on the ROW:** As it was committed in the disclosed Project documents, landowners/users continued to use the land expropriated for the BTC pipeline for agricultural purposes after the construction phase. In spite of several awareness meetings conducted in every single village along the route and written information/brochures provided to landowners/users and community leaders on land use restrictions since 2006, ROW monitoring teams and PCREs records showed that there are still some violations against the land use restrictions on the pipeline route mainly by landowners and by local municipalities. The main reasons for these violations in spite of past efforts to inform people on land use restrictions are as follows:
 - One of the main reasons for this is the dynamic land ownership structure in Turkey. Many parcels are not used by the original owners due to high migration from villages to metropolitan cities and each year the land is rented/used by different people. Thus an awareness campaign should be repeated almost every year before the harvest season to ensure the new landowners/users are following the land use restrictions. In addition, some of the landowners/users may forget the details of the legal restrictions or the route of the pipeline, thus there is a need for continuous consultation on this issue.

- Another reason for violations result from some of the local authorities not following the Third Party Crossing Procedure when they initiate infrastructure projects that are crossing the pipeline in some areas. The route cause is similar to the above. There is a high turnover in the staff of these municipalities. Local authorities also change after every election in most regions. Therefore the continuous engagement with these authorities is also crucial.
- The third issue is identified as potential vandalism at BVTs by school children; In Northeast Anatolia in 2010 there were three reported incidents of children throwing stones at or around block valves. There is an urgent need to raise awareness in schools about potential risks of this act on human health, the environment and communities.

Category of the land use violations is presented in the chart below:



Almost half of these violations are related with planting and approximately 60% of the violations occur in the southern section of the pipeline where there is intense agriculture.

- **Awareness Campaign on Land Use Restrictions:** In order to close out these third party violations identified along the ROW, an action plan has been developed and implemented by BIL in 2010. As part of this action plan, BIL prioritised the high risk and important areas which were recommended to be closed out immediately in 2010. They established a task force to initiate these emergency items in August 2010.

In addition, both Social and Security departments in BTC Co. and BIL agreed that there is a need for another round of awareness campaign along the route targeting different stakeholders such as school children for BVTs, land users for land use restrictions on the pipeline and local state authorities for third party crossing issues.

As a result of these assessments, it was decided to produce visual material (films) to improve communication with local stakeholders and communities as a part of 2010 annual work plan in order to:

- Raise awareness on land use restrictions to all stakeholders along the pipeline route
- Raise awareness on other operational issues such as legal requirements on third party crossings, complaints procedure, H&S rules, emergency action plans, etc.

The activities conducted to reach these objectives are as follows:

- Production of a training materials (2 films and exercise documents for school children, brochures and posters for landowners/users and local authorities to refresh messages). Training materials were tested in 6 villages in 3 different regions on the pipeline route and then printed for use during the awareness campaign.
- Training of trainees to use related materials during the awareness campaign along the route: A 2 day workshop was organised for BIL PCREs and on-the job training was provided to them at site during pilot studies. In addition to PCREs all pump station personnel (including BIL and contractor staff) received training on land use restrictions.
- Conduct training to identified stakeholders according the plan which was agreed by all parties (BIL and BTC Co.). The training meetings were conducted with 40 villages and with 13 local authorities in 2010 by the trained PCREs.
- Consultation with communities and local authorities on land use restrictions is on-going. Trainings for schools children will be conducted in 2011.
- In addition to the above actions, formal information via annual letters to key national and local authorities were sent to update them regarding the land use restrictions and third party crossing procedures. PCREs played an important role in terms of disseminating information with regard to land use restrictions to land users and to local authorities along the pipeline route. They also supported ROW Monitoring and Maintenance teams to resolve Third Party Crossing Procedure violations.
- Training materials (films, brochures, posters) were distributed to the villages, local authorities and Gendarme stations along the pipeline route.

As a result of these studies, 72.8% of land use violations became closed, 17.9% of them were pending and 9.3% of them are still open which will be completed in 2011.

- **Social Compliance Review by BTC Co.:** The social compliance review was conducted by BTC Co. CSR Team in May 2010 which included documentation review, site visits followed by interviews with BIL personnel and community members. The review addressed all social aspects in the plans agreed as part of the ESIA. The geographical scope of the review has included all major above ground installations (AGIs) and a selection of affected villages along the pipeline route. The audit results were generally positive; recording of field studies and process and implementations emerged as an area to be improved.

Web-based integrated Public and Community Management System was initiated by BIL which would help them to record the activities in a more efficient way.

- **Management of Local Employment Expectations:** PCREs continued to play an active role in local recruitment process after BIL renewed contracts for catering, snow cleaning, search and rescue, cleaning and security services, etc. in 2010. BIL sub-contractors were provided with the employment Key Performance Indicators (KPIs) agreed in the ESIA in order to ensure that the contractors give priority to the project affected villagers (particularly around AGIs) during recruitment.

During this reporting period, despite several challenges such as high employment expectations from communities and difficulties in training of new contractors on project standards in a short period of time, PCREs managed the employment of unskilled and semi-skilled workers in an efficient way through transparent and effective local employment management system and effective consultation with affected communities.

- **Goodwill gestures by BIL PCREs:** In addition to a very comprehensive community investment programme managed by BTC Co. in over 300 communities, BIL PCR team have done some goodwill gestures with the support of operation teams
- **Resolution of Provisional Recommendations from RAP Close Out Audit by SRAP Panel:** As it was described in the previous report, the RAP Completion Audit, undertaken by the SRAP Panel, assessed the effectiveness of RAP measures for restoring or enhancing project affected households' standards of living and livelihood up until the end of 2009. The Audit utilized both quantitative and qualitative approaches to gather data and assess household standards of living. Particular attention was paid to assessing the impact of RAP interventions on the circumstances of vulnerable households.

The RAP Completion Audit Quantitative survey was completed in 60 villages in Turkey in February 2009 and the Qualitative survey was completed in September 2009. The final assessment report is awaited from the SRAP panel.

During this reporting period, RAP Close-out Audit provisional recommendations received from SRAP in June 2010 were investigated with the communities and resolved. Actions with regard to 15 of the 18 recommendations were taken and closed from the field study immediately. The on-going 3 issues are as follows:

- on-going court cases
- on-going reinstatement complaints
- reinstatement of village infrastructure.

The progress on land acquisition is explained in Section 9 of this report and reinstatement activities are completed in most regions except for a few areas in Lot C which will be completed 100% in 2011.

8.4.1.2 Community and Regional Stakeholders Meetings

Regular follow-up meetings were held with local communities and regional stakeholders (including the local gendarme, provincial governors, district sub-governors, mayors, government utility providers, and other relevant government departments) to increase the awareness of landowners on land use restrictions and to resolve the reinstatement complaints along the pipeline route. In total 394 communities and local stakeholder meetings were organized by PCREs during 2010. This figure does not include consultation meetings with affected villagers conducted by BTC Co. and by its implementing partners for CIP and RDI related issues. A breakdown of the meetings held by BIL in 2010 is presented in Table 8.4.3

Community pamphlets which provide information on land use restrictions, emergency response, security, venue for grievance log, etc. were distributed again to all villages and other local stakeholders such as sub-governors, mayors and state officers by PCREs during these meetings. As explained above 2 films were produced to be used during these consultation meetings; 1 for landowners/users and 1 for school children. These consultation meetings will be conducted in other areas along the pipeline route in spring and summer 2011.

Table 8.4.3: BIL Community Meetings, 2010

BIL Community Meetings	No. of Village Meetings	Regional Stakeholder Meetings
Community Awareness and Consultation Meeting	61	99
Regular Meetings (follow-up to introductory meetings)	77	140
Third-party Crossings*	2	2

BIL Community Meetings	No. of Village Meetings	Regional Stakeholder Meetings
Illegal Tap Consultation Meetings/ROW Security	-	1
Other (holiday courtesy visits; response to particular issues, etc.) Evaluation Meeting with BTC Co.	5	7
TOTAL	145	249

* The scope of introductory and regular follow-up meetings includes land-use restrictions and third-party crossings. These subject specific meetings were held in most cases to re-emphasise these issues where considered necessary.

8.4.1.3 National and International Stakeholders Meetings

During this reporting period, BIL PCR department continued to host official visitors mainly at CMT and other AGIs including country representatives, government officials, and media and NGO representatives. Briefings were provided about various aspects of the operation of BTC pipeline.

Table 8.4.4: BIL Official Visitors

Official Visitors to CMT and other AGI's			
Years	Number of Visitors		
	National	International	Total
2006	133	30	163
2007	309	138	447
2008	487	119	606
2009	78	27	105
2010	68	60	128
Total	1075	374	1449

8.4.2 Complaints Management

During this reporting period 53 new complaints were received, as shown on Table 8.4.5.

As reported in last year's report, in 2010, all of the recorded reinstatement related complaints in Lot A and Lot B (in total 223) were resolved by a contractor under direct management of BTC Co. with the support of BIL PCREs.

The number of open complaints at the end of 2010 is 74, of which 48 of them are about reinstatement issues. The tendering process for Lot C reinstatement scope was completed at the end of 2010 and because of weather conditions some of the issues were postponed to the first half of 2011. Complaint close out forms will be signed in 2011 after the completion of reinstatement works at site.

In 2010, most of the newly registered complaints were related to the payments to service providers by BIL's sub-contractors. The second highest number of operational complaints received in 2010 was related to the damage to property, crops and land during reinstatement activities and during hot repair works. Payments to camp site landowners were made by 2010 and there were no issue left from compensation payments to land owners around PTs.

As it can be seen from the table below, there is significant reduction in the number of new complaints received in 2010 compare to post construction phase.

Table 8.4.5: Total Number and Category of Operation Complaints Received in 2010

Subject	2008	2009	2010
Employment	7	0	3
Reinstatement*	390	58	10
Access to land and other resources	2	0	0
Damage to property, crops and land	20	4	8
Damage to infrastructure and community assets**	77	7	2
Dust & Noise	0	1	0
Payment/Payment to service provider	22	14	25
Local Procurement	1	0	0
Outstanding expropriation payments	17	2	2
Misconduct of BIL employees	0	0	0
CIP – perceived inequity in distribution of support	5	1	1
Decrease or loss of livelihood	3	1	1
Other (3 rd party crossing – Use of local resources)	2	1	1
TOTAL	546 (residual open 304 by end 2008)	89	53

* Includes reinstatement, biorestitution, border, grading, riprap, soil, transportation, stone complaints

** Includes damage to channels, irrigation channels, drinking water, drainage, water source, road, bridge

Table 8.4.6: The Category of Remaining Open Complaints for 2010 (Cumulative)

Subject	2011	Action Plan
Reinstatement	48	<ul style="list-style-type: none"> • 29 Items in the scope of 2011 reinstatement activities in Lot C and construction process will be initiated in 2011. • 15 border related complaints to be resolved by BIL PCREs in 2011 on behalf of BTC Co and BTC Co provided technical and financial support. Initial meetings were conducted with the complainants. Cadastral work will be carried out in spring 2011. • 7 of these complaints are in the scope of geo-hazard studies which are going to be completed in early 2011. • 8 complaints to be investigated by BIL ROW monitoring and maintenance team for clarification and action in 2011
Damage	12	<p>During repair activities at pipeline route, crops of 4 people were damaged and therefore people were compensated. Land entry and exit forms were signed by landowners stating that they are no issues left. Few months after the land exit, people raised complaints for the same parcels stating that they were not paid enough. BIL PCREs will visit the complainants and consult with the landowners and close out the complaints in 1 Q 2011.</p> <p>8 of them are about the illegal hot-tap related issues.</p>
Damage to Infrastructure	5	<ul style="list-style-type: none"> • One of them is about damage to road and PCREs will follow this with the local administration and community. • Three of them are about the trees planted in the village common land around PT1 - The consultation meetings were held with the complainant; issue is closed verbally however formal close out has not been completed yet. • The last one is in the Scope of Lot C.

Subject	2011	Action Plan
Dust and Noise	1	BIL has contacted with the Provincial Private Administration of K.ahramanmaraş and ask them to improve the road.
Payment	6	<ul style="list-style-type: none"> • One parcel has been used as a car park area at PT3. Land rental payment should be done by BIL. • One of them is in the scope of Lot C reinstatement activities and will be resolved in 2011. • Three of them are related with the payments to contractor employees. • One of them is related with payments to landowners at BVT 30.
Recruitment	1	One of the ex-employee of Oztaş stated in 2010 that he worked as a driver as part of Sesmeke's team in Erzincan in 2006 and when he was fired from the job; he could not get his last salary.
Other	1	Stones and other material gathered by the villagers were used by the reinstatement contractor for riprap in 2010 and villagers are now asking for the stones back. This complaint will be resolved as part of Lot C reinstatement scope.
TOTAL	74	

8.4.3 BTC

8.4.3.1 Consultation Activities with Government, NGOs and other Donor Institutions

BTC Co. also undertook various stakeholder meetings as part of its assurance role in Turkey. Although the majority of the meetings were related with the projects implemented under the SDI-Sustainable Development Initiative (EIP, CIP and RDI), social and environmental assurance issues were also covered by various departments in the Operations Team.

BTC Co. held several meetings with the relevant stakeholders for investment projects including local, regional and national government representatives, development/donor organisations such as UNDP, national and international NGOs, universities and private businesses. The objectives of the these stakeholder meetings were to raise awareness and support for the BTC's investment activities, promote cross-learning across villages and municipalities, understand government's and NGO's future priorities and strategies, seek additional funds, etc.

As a result of the on-going engagement in sustainable development initiatives, BTC Co. became an active organisation in the development society of Turkey (i.e. BTC Co. is now sitting in the Advisory Board of Development Studies at University of Ankara and in the board of the Business Council for Sustainable Development in Turkey). In addition, other national and multinational companies who have investment plans in Turkey and donor institutions regularly consult with BTC Co. for their CSR projects as well as ESIA practices.

In 2010, 2 comprehensive workshops were held to discuss the progress in CIP and RDI projects and also to shape the future activities together with the IPs. These workshops involved all IPs, representatives of some of the local NGOs, cooperatives, local Government, and other donors.

In addition, 2 additional workshops were held with the participation of all EIP IPs to discuss the lessons learnt, behavioural change, nature conservation strategies in Turkey and monitoring and evaluation. Other environmental NGOs and key stakeholders from Government and universities were also invited to these sessions.

A summary of the number of meetings or other formal communications held by BTC Co. is presented in Table 8.4.7. Note that the number of meetings held does not include meetings held by the IPs. The IPs held many district and village level meetings in addition to those shown on the table below.

Table 8.4.7: BTC Stakeholder Meetings, 2010

Type of Meeting	No. of Consultations*
Donor	5
Government	20
NGO	18
Private companies	10
University	7
TOTAL	60

* In some cases, consultation can represent a series of meetings on the same subject.

8.4.3.2 Consultation Activities with Communities and Local Stakeholders

BTC Co. CSR Team conducted several community meeting and regional stakeholder meetings during this reporting period. In general, the aims of these meetings are to monitor the impact of SDI projects implemented by NGOs in Turkey and to monitor the community relations activities undertaken by BIL.

BTC Co. CSR Team and its external development consultants spent approximately 140 days on site visiting villages and local authorities to ensure SDI projects and relations with communities are managed in line with the agreed plans and commitments. Approximately each region is visited more than 2 times during this reporting period.

8.4.3.3 Media

BTC Co. is managing relations with media institutions in Turkey in line with the Operating Agreement with BIL. During 2010 various media activities took place in Turkey including:

- A press release was issued announcing BTC had safely transported 1 billion barrels of Caspian crude to world markets. BTC has been reported as a source of major benefit to its neighbours - approximately 730,000 people in 550 communities. It has provided numerous jobs, spent tens of millions of dollars in sustainable development projects and opportunities, and it has provided for their economic growth. Media coverage in 2010 regarding RDI and CIP projects was as follows; 17 national media, 62 local media, 4 regional insert and 1 sectoral magazine.
- One major press event was organised for the opening ceremony of BTC RDI project Antakya Solid Waste Landfill Facility (first EU compliant local facility in Turkey) and interviews were conducted with the Head of Country, covering the ongoing Corporate Social Responsibility activities in Turkey.
- Several public events were organised in the regions by CIP and RDI partners to promote the achievements in the BTC financed projects.

9 LAND ACQUISITION AND COMPENSATION

The land acquisition, compensation, hand-back and livelihood restoration activities and processes are described in the Resettlement Action Plan (RAP). This section of the report summarises relevant activities conducted in 2010.

9.1 AZERBAIJAN

9.1.1 Land Acquisition, Exit and Compensation

The primary land acquisition and compensation process for the pipeline ROW in Azerbaijan has been successfully completed. As noted in previous Annual Reports, bank accounts have been established for all affected people, in all districts, except for 9 unavailable landowners (compensation for these owners has been retained until such time as they are located). Relevant compensation has been paid to 99.9% of the land owners/land users.

At present there are 50 cases where the Land Lease Agreements' Addendum (for the prolonged construction period) has not been signed by landowners/land users (Supplementary Land Acquisition Programme [SLAP] 1 and SLAP 2). The main reasons for this situation are the absence or unavailability of landowner/land users, Absence may be due to the landowner being out of the country, deceased, incarcerated or as a result of heritage family disputes. BP monitors such cases and if the landowner/user becomes available, the agreement will be signed and compensation paid. The agreed action plan for closure of these outstanding land exit agreements has been developed on a village by village basis and comprises assigned responsibilities and proposed budgets.

Other unsigned cases include:

- 4 informal land users from 14 villagers (Hajjalili village, Shamkir district) have elected not to sign the agreement
- 3 land owners have elected not to sign the agreement

9.1.2 Land Acquisition Programme for 6 m Access Corridor for Interim Routine Right of Way Access Strategy

As the part of the ESIA and RAP compliance, BTC acquired a 6 m land strip alongside the ROW as some sections were used for the temporary driving of Azerbaijan Government EPPD vehicles (refer Section 2.4.1). This land acquisition process consisted of the following stages: consultation with landowners/land users, notification, agreement signing, land entry, compensation payments and at the end, land exit.

During 2010 the following activities were accomplished:

- 86 land owners/users have elected not to sign the agreement for 6 m Access Corridor due to reasons such as the owners are out of country (mainly in Russia) or the inheritance documents are not ready.

9.1.3 AGI Certificates Change

As a result of the land acquisition associated with the construction of the AGIs, 30 landowners did not obtain new land certificates showing the new land boundaries. As an act of good will, the third party legal NGO CLEE was hired by BTC to assist the affected landowners to address the issue. This involved payment of the state registration fee on their behalf and assistance in collecting all necessary legal documents to apply for the new land certificates. As a result, 24 out of 30 landowners have now received their certificates.

BTC Co. also assisted with the certificate change of a Kechili village land owner. Due to the incorrect measurement of parcel boundaries the landowner had not received accurate certificates. After clarification of the shortcomings with local land committee BTC CO. ensured that necessary resources were allocated to cover the expenses for generating the correct certificates.

Currently, 6 people are remaining who have not received their certificates. In 2 of these cases the landowners have passed away and relevant heritage documents are in the process of preparation. The remaining 4 landowners did not wish to receive their certificates due to unknown reasons.

9.2 GEORGIA

9.2.1 Acquisition and Compensation

As of December 2010, land acquisition in Georgia is nearly complete. To date a total of approximately 11 million USD has been paid out for land acquisition and approximately 13 million USD has been disbursed as compensation for crop loss. Table 9.1 summarizes key information regarding the acquisition, compensation and hand back of land used.

It is noteworthy that large number of errors in the state land registration and documentation system were identified and rectified throughout the land acquisition process. One outcome was that the number of land parcels involved in the compensation process grew from 2782 to 3522. Additional 3 parcels are bought.

Table 9.1: Number of Land Parcels for which compensation has been paid

District	Private Land Parcels		High Mountain Village Land Parcels		State Leased Land Parcels	
	Required	Actual	Required	Actual	Required	Actual
Total	3,522	3,481	206	206	239	226
% Complete	-	99%	-	100%	-	95%

9.2.2 Land Registration and Ownership

Some of the ongoing court cases regarding land registration and titling have not yet been finalised. Additional payments may be necessary, for example in Naokhrebi:

- **Tabatskuri:** BTC paid full compensation to 98 owners identified on the original database. The Court made decision to recognize existing owners.
- **Naokhrebi:** Naokhrebi: The villagers of Naokhrebi village filed a court claim in 2006 against the local municipality to privatize land which, in 2003, was allocated to BTC as state land and on which the State replacement fee was paid. The court ruled in favour of the villagers and as a result ownership certificates were issued. BTC has filed the court case against Akhaltsikhe Municipality/Villagers demanding ownership certificates to be declared null and void. The case is still in the court. In total there are 62 land parcels affected.

In addition, there are 25 absent landowners, and for all parcels BTC has acquired Necessary Right Of Way (NROW). However, BTC may have potential difficulties negotiating land price offers, as land market prices fluctuate.

9.2.3 RAP Fund

The budget for land acquisition and RAP costs for the Georgia section of the BTC pipeline project was estimated to be 10.8 million USD. The actual expenditure amounted to 26.8 million USD. The major elements were: payments for permanent

privately owned land acquisition - US\$11.7 million USD, Crop - US\$8.3million USD, Orphan Land - 3.5 million USD. Total compensation in 2010 was 0.65 million USD.

9.2.4 Land Hand-back

As of December 2010, Akhaltsikhe camp issue is closed and the agreement with owners signed.

Land exit agreements are still being signed with landowners and land users. As of December 2010, 88% of all Land Use and Servitude Agreements have been completed. The reasons for delay in signing of land exits vary but many relate to absence of landowners (98), and changes in regulations for state registration.

9.3 TURKEY

9.3.1 Acquisition and Compensation

As of December 2010, land acquisition in Turkey is nearly complete. Botaş/Designated State Authority, Turkey (DSA) acquired 99% of the parcels. 98% of these land plots acquired by Botaş/DSA were already transferred to BTC Co. The process is on-going for the remaining parcels.

Court process is on-going for 48 private parcels due to the following reasons:

- On-going cadastral surveys in the regions have negative impact on the resolution of the current court cases.
- Due to the multiple ownership and absentee owners - parties (heirs of deceased owners) cannot be defined by the court in a short period of time.
- Wrong spelling of the names on the title deeds which requires another lengthy court process to correct the names on the title deeds prior to land acquisition by Botaş.

BTC Co. continues to monitor the acquisition of additional lands and will continue to monitor this process closely. In particular during the potential additional lands required for operational needs in future and in line with the commitments made in the RAP.

Table 9.3 provides an update of the status of the acquisition and compensation process as of end 2010.

Table 9.3: Land Acquisition and Compensation Progress (December 2010)

Indicators	Information Provided by Botaş/DSA		
	Total (# by parcel)	Complete (#)	Complete (%)
Overall Land Acquisition*	16,829	16,681	99.12%
Title Deed Registration for private lands only	11,747	11,684	99.46%
Resolution of Article 10 Cases (private lands)	7,642	7,594	99.37%
Transfer or Rights to Land to BTC Co.**	17,940	17,611	98.17%

*This figure includes all private and public parcels subject to land acquisition for pipeline ROW, energy transit lines, AGIs, and additional land needs for operations, etc. Change in the statistics compare to previous reports is due to the parcels subject to transfer, owing to different configurations.

** This figure represents the title deeds acquired as a result the expropriation of 16.829 parcels which were subject to local cadastre works and parcellisation processes (gathering and/or dividing of parcels) during the land acquisition.

9.3.2 Land Management during Operations

BIL and Botaş/DSA manage all land issues by applying a protocol which outlines roles and responsibilities between DSA and BIL during Operations. Therefore all additional permanent land needs are addressed in line with the RAP principles and according to the operating agreement with BIL. All additional land needs are approved by BTC Co. prior to the acquisition of land plots.

Camp sites at Pump Stations:

In 2010, field study conducted by BIL and BTC Co. was undertaken to ensure lands which are not needed for camp locations are handed over to the original owners. As a result of this study, 20 parcels were handed over to their original owners and rental agreements were signed for 32 out of 52 original parcels, with the consent of landowners. Rental payments to camp sites at all pump stations were completed by BIL PCREs by May 2010.

In 2010, a detailed study carried out for the expropriation of camp sites around Pump Stations. The study was submitted for the management review.

PT2 Flood Mitigation Measures:

The other major land acquisition activity in 2010 was the expropriation of 3 land plots (2 private, 1 public) at PT2 camp site in order to construct permanent flood mitigation measures at PT2. Consultation meetings were held with the villagers, the head of the village and the landowners prior to the construction of heavy snow melt flood measures. The concerns of community were considered in the design of the flood measures. Significant, in kind contribution was provided to the affected village in addition to compensation payments such as providing pipes and construction materials needed by the village, building the village road, the village common house, and support for training activities in the village as part of the CIP projects.

IPT1- Security Road:

Another land survey has been carried out for the security road around IPT1 and expropriation process has been initiated for 16 parcels; 8 parcels have been expropriated and process is on-going for the remaining 8 parcels.

Geo-hazard studies and reinstatement activities:

BTC Co. initiated additional construction activities on the ROW to reinstate some parts of the pipeline route. Temporary land needs for reinstatement activities were managed in line with the RAP principles. Land entry and exit protocols were signed under the supervision of the PCREs and rental payments were monitored by BTC Co. staff directly.

9.3.3 Transfer of Land Rights

Efforts to complete the transfer of land rights to BTC Co. continued on a district basis using 2 Official Acts: 1) private/customary owned land; and 2) state/forest owned land.

By the end of 2010, approximately 98.17% of parcels were transferred to BTC. The process will continue in 2011 for the remaining parcels. The process of transfer of land rights from Botaş to BTC Co. has no impact on the communities.

9.3.4 RAP Monitoring

No RAP monitoring in 2010 in Turkey.

10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS

The majority of targets and key performance indicators set at the beginning of 2010 for Operations have been met. All operational activities were conducted in a safe manner without any major (MI) or high potential incidents (Hi-Po).

Operational activities were conducted across the 3 countries. Despite an increase in the number of man hours (compared to 2009) the number of Recordable Injury Incidents (RII) has reduced from 4 in 2009 to 1 in 2010. There were no Days Away From Work Cases (DAFWC), no Hi-Pos, no MIs or Fatalities and no significant Process Safety related incidents recorded in 2010.

One of the challenges presented to BTC in 2010 was the organisational change driven by BP globally. This change process was managed effectively, completed successfully and on time to form a more flexible and balanced organisation structured by function.

Another priority for 2010 was the closure of the 2009 S&OI audit outstanding action items. By the end of 2010 the majority of recommended actions were closed (96%) with a zero recycle rate, meeting exceptional performance targets on actions closure.

The following is the summary of the main BTC HS and ER related activities in 2010.

Safety:

- OMS Gap Assessment against 5 OMS elements has been carried out and an action plan developed, as part of preparation for 2011 S&O audit.
- AzSPU Risk Management Process update rolled out in Az Exports PLNs.
- AzSPU EMS and Regulatory Compliance Self-assurance review conducted in Georgia.
- AzSPU HSE Integrated Self-assurance review carried out in Georgia.
- Competency Improvement Plan for Az PLN H&S Advisors developed and implemented. Competency Assessment carried out for the second consecutive year.
- Geo Contractors Safety Leadership Meeting conducted.
- Tr Project HSE strategy, HSE plan and Risk Assessment developed.
- Horse Patrols PPE procedure and Horse Gear Appliances updated and issued (Az/Geo).
- Pigging campaign along Az Pipelines conducted at Az PLN and Geo Ops
- Lifting Gap Assessment conducted in Georgia
- Lifting audit / review conducted at Az PLN
- Introduction and implementation of 'Task Risk Identification Card (TRIC) completed. Introduction and successful implementation of quarterly statistical analysis /trending of TRICs with appropriate corrective actions where intervention was required
- Main Az Exports PLNs Contractor's audit conducted (Titan)
- Georgia Contractors Safety Executive Forum performed

Driving:

- A number of Road Risk Assessments for main and some access roads conducted across 3 countries in BTC.
- Self driving Standing Instruction issued - Azerbaijan/Georgia/Turkey
- Transport Safety Audit for BTC Core contractors conducted
- A number of DSS audits have been carried out in 3 countries. As a result a Driving Improvement Plan has been developed and successfully implemented – Azerbaijan/Georgia/Turkey

Health:

- Azerbaijan Export Pipelines Medical Emergency Response strategy revised
- BTC Co. Turkey Health and Fire Design Review carried out
- Az PLNs Manual handling gap analysis
- Az PLNs Fatigue management risk assessment conducted and Fatigue management implementation action plan developed
- Tr Project HSE strategy, HSE plan and Risk Assessment developed
- Accommodation & catering Review conducted at CMT
- PSA2 Multi-casualty Plan was developed, issued and fully deployed at the facility and tested through emergency exercise.
- Az PLNs Health Plan 2010 developed, published and closed in the Healthmap (99%)
- AzPLNs SVNA procedure dramatically enhanced contractors' medical fitness for task assurance process
- In 2010 a number of Health Campaigns / Promotion Programmes have been rolled out to the Pipelines Operations personnel in all 3 countries e.g. Summer Risks, Manual Handling, Ramadan, Hearing Protection, Winter Risks, Flu Prevention and World Diabetes Days.
- Implementation of Skin Surveillance Programme at BTC Azerbaijan stations
- Az PLNs Stray Animals Control Management Strategy revised
- Commencement of regular alcohol testing of AzPLNs ROW core contractors
- A number of Health related audits have been carried out (e.g. Food Safety, Water Quality, Medical Provision)

Emergency Response:

- Pre-Polaris review conducted at OSR Contractor bases
- Oil Spill Response capability review conducted at Az PLNs and Geo Ops.
- BP Georgia "Fire Resources" workshop conducted
- Rustavi OSR base transition to PSG1 completed
- Ceyhan Marine Terminal Fire Brigade assessment against NFPA (National Fire Protection Association) standard and Fire Fighting Design Review conducted.
- Management of Organizational Change and System Handover of OSR base completed
- Fire Peer Review conducted at Az PLN and Geo Ops
- 2010 Midstream Emergency Response Coordinator Workshop Opening Session held
- Familiarization programme of Local Fire Brigades with Az Exports facilities has started
- An intensive programme of various Tier level Table Top and Deployment exercises has been successfully implemented. This included cross border exercises with the involvement of the relevant governmental bodies / agencies. Examples are as follows:
 - Tier 3 Azerbaijan-Georgia-Azerbaijan cross border exercise
 - Tier 1 Emergency Exercise at PSA2, IPA1, PS5, PS8 with local Fire Brigades involvement
 - Tier1 Emergency Exercise at PSA2 with Sangachal Fire Track involvement

- Tier 2 Emergency Exercise with IMT and MES involvement at the Azerbaijan ROW carried out
- Full Scale Exercise jointly with BTC Co. and BIL IMT at PT1
- Turkey-Georgia OSR Cross Boarder Exercise
- Tier 1 "External Threat to Pipeline" Emergency Exercises at the Az ROW with local regional Emergency Commissions involvement
- CST ER and Offshore OSR Tier 2 Exercise

A summary of H&S performance during 2010 for Operations activities is presented in Table 10.1 (Leading indicators) & 10.2 (Lagging Indicators).

Table 10.1: BTC Operations H&S Leading Indicators

Operations Inputs	Target	2009 Performance		2010 Performance	
		BP	BIL	BP	BIL
Behavioural Observation Safety System (BOSS)	100%	185	219	237	109
Safety Observation and Conservation (SOC)	100%	165	42	112	71
Safety Training Matrix Compliance	>95%	130	79	98	93

Table 10.2: BTC Operations H&S Lagging Indicators (Actual)

Operations Outputs	2009 Performance		2010 Performance	
	BP	BIL	BP	BIL
Man-hours	1,981,911	2,191,368	2,308,313	2,110,508
Fatality	0	0	0	0
DAFWC	0	0	0	1
Medical treatment	3	5	1	1
Restricted Work	1	1	0	0
First Aid Case	7	7	10	7
High Potential Incident (HiPo)	0	0	0	0
Traffic Vehicle Accident (TVA)	4	8	3	12
KM driven	6,276,594	5,992,997	6,599,510	5,655,191
Near miss	31	7	66	30

BP = BP operated section of BTC (Azerbaijan & Georgia) and the BTC Assurance Team in Turkey

11 AUDITS

11.1 INTERNAL REVIEWS

11.1.1 Azerbaijan

Internal environmental inspections, reviews and audits continued to be carried out at both AGIs and on the ROW. A full summary of internal reviews and audits is provided in Table 11.1¹⁸.

Table 11.1: Summary of Internal Reviews/Audits, Azerbaijan, 2010

Audit/ Review	Auditor	Scope	Findings and/or Recommendations
ISO 14001 Internal Audit	Audit team consisted of environmental advisors across AzSPU assets	The main objectives of the ISO 14001 EMS audit were to evaluate the effectiveness of the Operations MS against the requirements of the ISO 14001 standard, in order to verify that the required systems and processes were functioning effectively.	The Azerbaijan Exp Pipeline Operations environmental management system has matured and significant progress has been made to address corrective actions from the previous internal EMS audit (August 2009) and ISO 14001 external certification audit (Oct 2009). There were no deficiencies identified in the following ISO 14001 elements: policy; significant aspects and impacts; legal and other requirements; recourses, roles & responsibilities; communication; control of documents; emergency preparedness; control of records and management review.
Internal Regulatory Compliance Audit	HSSE Compliance Specialist	To evaluate HSE Compliance against OMS requirements: <ul style="list-style-type: none"> • element 7.1 (Regulatory Compliance) • element 3.6 (Environment Risk) 	All tasks have been verified and tasks applicable to current operations have been uploaded into CTM. All task owners have passed CTM user training. Audit team tried to focus on quality of live tasks uploaded into CTM and people's awareness regarding their compliance obligations, but not limited to the above areas. There were no significant findings identified during the audit.
Regular Environmental Inspections	BTC	Regular Environmental Inspections of IPA1, PSA2, Block Valves	Weekly and monthly environmental inspections were carried out at all AGIs throughout 2010. No major issues were identified, and all minor issues are closed out as soon as practicable on an ongoing basis.

11.1.2 Georgia

Environmental inspections and internal audits continued to be carried out at AGIs and along the ROW. A full summary of significant internal reviews and audits is given in Table 11.2.

¹⁸ Note: these are treated separately from environmental monitoring, which is detailed elsewhere in this report.

Table 11.2: Summary of Internal Reviews/Audits, Georgia, 2010

Audit / Review	Auditor	Scope	Findings and / or Recommendations
Integrated HSE Self-Assurance Review – ISO 14001	Auditors from AzSPU assets (other than Georgian Exports Pipelines)	Status of BTC (and SCP/WREP/Supsa terminal) readiness for ISO 14001 Surveillance audit: December 2010	Georgian Exports pipelines Operation has a mature EMS with no deficiencies identified in the following ISO 14001 elements: policy; significant aspects and impacts; legal and other requirements; recourses, roles & responsibilities; communication; control of documents; emergency preparedness; control of records and management review. However, 5 findings were related to emissions, waste and hazardous materials management/monitoring issues. Audit actions were uploaded and tracked through the Tr@ction system.
Integrated HSE Self-Assurance Review – Regulatory Compliance	Auditors from AzSPU assets (other than Georgian Exports Pipelines)	Assess compliance status of BTC (and SCP/WREP/Supsa terminal) against OMS Sub-element 7.2 requirements: December 2010.	Audit team primarily focused on quality of tasks uploaded into web-based Compliance Task Management (CTM) system and on people's awareness about their compliance obligations. In addition, recent Offshore S&OR audit findings were also part of audits' consideration from Georgian Export Pipelines applicability prospective. There were 2 findings identified by the audit. Relevant actions were defined and tracked through the Tr@ction system.
Subject Matter Audit: Noise Monitoring	Auditor from Azerbaijan Exports Pipelines	Assess compliance of noise monitoring against Emission Management Plan and Noise Monitoring procedure requirements: August 2010	Auditing comprised review of noise monitoring procedure, monitoring reports and actual participation in a noise monitoring round at EDDF. Several recommendations were identified in relation to alignment of BTC/SCP (and WREP) practices and updating a procedure to incorporate frequency of monitoring, structuring R&Rs; calibration requirements and reporting standards.
Subject Matter Audit: Ambient Air Quality (AAQ) Monitoring	Emission Subject Matter Expert from Georgian Pipeline	Assess compliance of AAQ monitoring against Emission Management Plan and AAQ Monitoring procedure requirements: May 2010	Audit focused on completeness of <i>in-situ</i> implementation of AAQ monitoring requirements and assessed potential compliance gaps. The identified gap was the incomplete reporting from to exclusion of weather data in the assessment of emission impacts. In addition, the possibility of running a new Dispersion Modelling, based on factual weather data that recently became available, was identified. The issues identified by the audit are tracked through Tr@ction.
Regular Environmental site Inspections	Georgian Exports Pipelines field E team	Regular Environmental Inspections of PSG1 & 2; Area 80; camps, ROW	Regular environmental inspections were carried out at all AGIs and camps throughout 2010. Identified issues were tracked through inspection checklists, site Environmental Action plans and action tracking system tools.

11.1.3 Turkey

Internal monitoring takes place as required, on a daily basis or through theme audits and reviews. In some cases the review might result in actions and recommendations for implementation.

The significant internal reviews conducted in Turkey during this reporting period are summarised in Table 11.3.

Table 11.3: Summary of Internal Reviews/Audits, Turkey, 2010

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Day to day field inspection (E&S assurance) and monitoring of reinstatement activities	BTC Co.	Reinstatement Contractor	Monitoring of the reinstatement/ geo-hazard works on a daily basis by BTC E&CSR teams	The reinstatement contractor was monitored by BTC Co.'s E&S staff on full time basis. All complaints successfully resolved in Lot A and Lot B villages as planned, with the support of BTC Co. teams. Reinstatement works initiated in Lot C in 2010 and will be completed in 2011. Land exit protocols and compliant close out forms are signed by the complainants after the reinstatement is completed.
Management of additional land needs during Operations	BTC Co.	BIL and Botaş/DSA	Temporary and permanent land acquisition	BTC Co. CSR team directly managed the monitoring of additional land needs during Operations such as additional permanent land needs for flood mitigation measures at PT2, security road at IPT1 and temporary lands required for reinstatement or geohazard works. As well as rental payments for camp sites at AGIs.
On-going CIP and RDI Technical Monitoring	BTC Co.	CIP and RDI Implementing Partners (IPs)	CIP and RDI activities	BTC Co. CSR Team and external consultants conducted several site visits to monitor projects and provide technical input to IPs and local organisations. In total, CSR Team members and external development consultants spent over 100 days at site to ensure smooth implementation of sustainable development initiative projects and to monitor the community relations issues. Site reports were produced after each site visit and shared with the relevant IP. The actions are being followed up on a monthly basis with each IP.
Mid-term Evaluation on CIP Projects	2 external development experts on behalf of BTC	CIP IPs	CIP activities	BTC prepared a 3 year exit strategy (2009-1011) for CIP in Turkey. The aim is to transfer all roles and responsibilities of national IPs to the local organisations and village based associations/cooperatives in order to ensure sustainability prior to BTC's exit from the current projects. In 2010 - BTC Co. hired a 2 senior development experts (one of them has been supporting the programme since 2006) to evaluate the effective management of this Exit Strategy and identify areas for improvement for 2011 projects. This mid-term review included interviews with Project IPs and independent reviews with villagers, head of cooperatives and associations, local government representatives and other beneficiaries.

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
				The review report has been prepared and findings of this mid-term review have been shared with IPs through a workshop as well as face to face meetings at site and at HQs.
Pre-IEC Audits and E&S Compliance Reviews	BTC Co. Environ ment and CSR Teams	BIL	Compliance with ESAP and ESIA	An internal social audit was conducted for the BTC Operations in Turkey which included documentation review, site visits, followed by interviews with BTC Co. and BIL personnel and villagers. The social audit results were generally positive. During the environmental review however 4 Level I non-conformances were identified at PT1, CMT and SESMeke Erzincan Base.
CIP and RDI Financial Audits (2 audits 1 at the beginning and 1 at the end of the year 2010)	BTC Co.	CIP IPs (grantees)	Financial compliance to grant agreements	In addition to quarterly reviews of financial reports submitted by the IPs, BTC Co. Finance Team together with an external finance consultant conducted audits on all CIP&RDI projects implemented in 2009 in early 2010. As a result of this audit, 2 contracts have been terminated with one of the CIP IPs due to late payments to its site personnel and delays in tax payments to the Government authorities. New IPs entered in the region and continued to manage the community projects in 2010. The same audit has been conducted by external financial expert (accountant) to all projects implemented under SDI during 2010 by the end of the year. The audit results will be completed by early 2011 and shared with the IPs.
EIP Yearly Risk Audit and Financial Audits for new EIP Projects	BTC Co.	EIP IPs	Financial compliance to grant agreements; identification of E&S and administrative risks	Audits to 3 major IPs were conducted with BTC Co. Finance Team and an external finance consultant. No major risks were recorded; recommendations provided to IPs to better manage their financial activities. As a lessons learned from both EIP and CIP projects, in order to prevent any future risks additional documentation is being requested in every financial reporting term.

Table 11.4: Audits Conducted by BIL

Audit/Review	Auditee	Scope	Findings and/or Recommendations
Environmental Compliance Audit of 3 rd Party Waste Facilities	IZAYDAS	Compliance with ESAP	The facility was found as compliant.
Environmental Compliance Audit of Contractors	SESMeke Erzincan Base	Compliance with ESAP	No major findings observed.
Environmental Compliance Audit of Contractors	SESMeke Kars Base	Compliance with ESAP	No major findings observed.

Audit/Review	Auditee	Scope	Findings and/or Recommendations
Environmental Compliance Audit of 3 rd Party Waste Facilities	ERAYKUD	Compliance with ESAP	The facility was not compliant with the Project HSE standards and BIL's WMP. ERAYKUD will be further evaluated in 2012 during the BPEO study for recyclable wastes and with consideration for it is an intermediate storage area not a final disposal site BTC Tu facilities
Environmental Compliance Audit of Contractors	Yıldız Nakliyat – Hazardous Waste Carrier	Compliance with ESAP	The contractor was found as compliant.
Environmental Compliance Audit of 3 rd Party Waste Facilities	Antakya Landfill Site	Compliance with ESAP	The facility was found as compliant.
Environmental Compliance Audit of 3 rd Party Waste Facilities	Sivas Municipality WWTPs	Compliance with ESAP	The facility was found as compliant.

11.2 EXTERNAL REVIEWS

11.2.1 ISO 14001 Certification

BTC retained certification against the international environmental management system standard ISO 14001 following the re-certification audit in October 2009. The audit certification body was Moody International. The audit was completed successfully with no system findings in Azerbaijan and Georgia. *No external ISO 14001 audits were undertaken in Georgia and Azerbaijan in 2010.*

In Turkey, BIL retained certification against ISO 14001 in 2008 by BSI. The 2010 external audit was realized in March by BSI. According to BSI's report the areas assessed were generally found to be effective. 3 minor nonconformities were recorded that were related to clauses 4.3.2, 4.4.2 and 4.4.5. The next audit is scheduled for March 2011.

11.2.2 Independent Environmental Consultants

The 12th round of post-financial audits by the Independent Environmental Consultant (IEC), acting on behalf of BTC Lenders, was completed in Georgia, during July 2010 and in Azerbaijan and Turkey, during June 2010. The objectives of the Audit were to assess project performance against BTC project environmental and social commitments (in the ESAP), report any non-compliances, assign an appropriate level of importance (Level I, II or III, with III being the most significant), and verify closure of BTC's responses to non-compliances identified in previous monitoring visits.

In Georgia the audit raised 1 new Level I non-compliance (a non-compliant discharge of retention pond water into surface water environment) and an existing Level I non-compliance related to stack emission NOx levels was upgraded to a Level II.

The audit did not identify any new non-compliance in Azerbaijan. The IEC report stated that reinstatement of the pipeline has reached the stage where the operation is now effectively maintenance checks and addressing ad hoc issues as they arise. IEC expects that an offset programme will be agreed to prior to the next audit in 2011 and will consider the Project to have a significant non-compliance against the ESAP if an offset programme has not been initiated by the next IEC audit.

There was 1 Level I non-compliance raised in Turkey related to E&S Management Organization and Resources.

Appendix 3 contains details of the non-compliances along with a summary of actions taken to resolve the issues. Full reports are given on www.bp.com/caspian.

11.2.3 Social and Resettlement Action Plan (SRAP) Panel

The draft RAP Completion Audit reports for Azerbaijan and Georgia were received in 2010. The draft report for Turkey is still awaited. All recommendations have been addressed by BTC and most issues have been closed out.

Overall the findings of the SRAP panel have been very positive. The Azerbaijan report concluded:

Based on the findings of the research for the completion audit and the monitoring missions carried out regularly since August 2003, the SRAP Panel can conclude that BTC Co. has endeavoured in a reasonable and professional manner to meet the commitments made in the BTC Azerbaijan RAP 2002. Given the scale of the Project and the number of communities involved, this has been an impressive achievement.

Whilst the report for Georgia concluded:

Ninety-five percent of AGI surveyed household felt the project had caused no change or had been beneficial to their households. Eighty-eight percent of right of way survey respondents (N=700) considered that the BTC project had caused no change or had been beneficial for their community. Such findings represent an outstanding achievement by BP/BTC Co. and its staff in Georgia. The BTC project undoubtedly raised the bar for social performance on major private sector infrastructure projects.

SRAP Panel's report on Turkey has not been submitted yet. However initial survey findings proved that approximately ninety four (94 %) of households surveyed (838 people were interviewed in 54 villages in Turkey) felt the project caused no change or had been beneficial to their households.

Tables of recommendations are given in Appendix 4.

The results of the SRAP monitoring actions closure from previous visits are provided in Appendix 4.

11.2.4 Azerbaijan Social Review Committee

The SPU continued its involvement with the ASRC, an independent external monitoring group set up by BP to provide assurance, advice and to challenge to our social performance in Azerbaijan. In May, 2010, we hosted an ASRC session which discussed a number of performance-related issues. The fourth ASRC report to BP, containing several recommendations, was posted on BP in Azerbaijan's public website together with our response - www.bp.com/caspian.

11.2.5 Polaris

Polaris audit didn't take place in Azerbaijan, Turkey and Georgia in 2010.

11.2.6 Turkey External Reviews/Audits

Table 11.5: Audits Conducted by External Parties

Audit/ Review	Auditor	Auditee	Scope	Findings and or recommendations
RAP Close Out Audit	SRAP Panel	Botaş/DS A and BIL	Land acquisition/ livelihood restoration, reinstatement, operations phase community relations management, etc.	See Appendix 4
Employment Standards Audit; May-June 2009	Ministry of Labor and Social Security	BIL and its sub-contractors at all facilities along the p/l route	Health and safety conditions of the facilities, social security and tax issues	<p>Ministry of Labor and Social Security audited BIL activities in all PTs, IPT1 and CMT for 20 days between May and June 2009. Audit results were submitted to BIL after completion of each site by the Ministry inspectors. In summary main findings were:</p> <ul style="list-style-type: none"> All BIL and contractor personnel have social security and their taxes are paid in line with local regulations. Some of the project documents (plans and procedures) are in English but implementation documents were translated into Turkish. Plans, procedures should also be translated in local language. Camps used for construction are now used for operations. Conditions of the camp site should be improved. <p>There were also some recommendations to improve the H&S conditions of the work environment which are already in the scope of BIL.</p>
Environmental Review; Feb 2009	Adana Provincial Directorate of MoEF	BIL	Compliance with MARPOL	Information on final status was provided to auditors; no findings recorded.
Environmental Review; March 2009	Erzincan Provincial Directorates of MoEF and State Hydraulic Works	BIL	BVT30 activities and status	Information was provided to auditors; no findings recorded.

APPENDIX 1

Annex J of the Construction ESAP – Outline of Project Environmental and Social Monitoring Annual Report¹⁹

Each Annual Report will address each of the topics listed below for BTC Co. activities conducted in Azerbaijan, Georgia and Turkey.

- 1 EXECUTIVE SUMMARY**
- 2 ESIAs / EIA AND PERMITTING**
 - 2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE AZERBAIJANI, GEORGIAN AND TURKISH ESIAs DURING THE YEAR.
 - 2.2 SUMMARY OF MATERIAL PERMITS ISSUED DURING THE YEAR AND ANY APPLICABLE CONDITIONS.
 - 2.3 UPDATE ON STATUS OF PROJECT STATE SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIAs OR PERMITS.
- 3 CHANGES**
 - 3.1 DESCRIPTION OF ANY CHANGES TO AN ESIA DURING THE PERIOD TO REFLECT A CLASS I, II OR III CHANGE.
 - 3.2 SUMMARY OF THE TYPE OF CLASS I CHANGES IMPLEMENTED DURING THE PERIOD, OR A CONFIRMATION OF NO SUCH CHANGE.
 - 3.3 LIST OF ALL CLASS II CHANGES NOTIFIED DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.4 SUMMARY OF ALL CLASS III CHANGES DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.5 UPDATE ON CONSTRUCTION STATUS IN A CHANGE AREA INCLUDING DESCRIPTION OF ANY IMPACTS OR MITIGATION MEASURES.
 - 3.6 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MATERIAL MODIFICATION TO AN ESIA, THIS ESAP, THE RAP, THE ESMS, OR ANY OSRP.
- 4 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW**
 - 4.1 SUMMARY OF ANY NOTICES OF NON-COMPLIANCE, REMEDIAL ACTION, ANY FINES OR PENALTIES PAID AND FINAL DISPOSITION OF ANY REGULATORY PROCEEDINGS.
 - 4.2 SUMMARY OF AIR EMISSIONS.
 - 4.3 SUMMARY OF ENVIRONMENTAL DISCHARGES.
 - 4.4 STATEMENT INDICATING WHETHER BTC CO. AND ITS AGENTS HAVE COMPLIED IN THE DEVELOPMENT, CONSTRUCTION AND OPERATION OF THE BTC PROJECT WITH THIS ESAP, APPLICABLE ENVIRONMENTAL LAWS AND APPLICABLE LENDER ENVIRONMENTAL AND SOCIAL POLICIES AND GUIDELINES IN ALL MATERIAL RESPECTS AND SUMMARY OF ANY (I) MATERIAL NON-COMPLIANCE AND THE STEPS BEING TAKEN TO REMEDY IT AND (II) MATERIAL MODIFICATIONS OF ESIAs, PLANS OR PROGRAMMES MATERIALLY IN CONTRAVENTION OF THE OPERATIONAL POLICIES AND DIRECTIVES LISTED IN THIS ESAP.
 - 4.5 UPDATE ON SIGNIFICANT CHANGES IN APPLICABLE LAW, IF ANY.
- 5 OIL SPILL RESPONSE**
 - 5.1 SUMMARY OF OSRPS COMPLETED, UPDATED OR AMENDED DURING YEAR (AS DESCRIBED IN THIS ESAP).
 - 5.2 SPILL SUMMARIES (AZERBAIJAN, GEORGIA AND TURKEY).
 - 5.3 SPILL RESPONSE AND REMEDIATION SUMMARIES.
 - 5.4 SUMMARY OF MATERIAL MODIFICATIONS TO THE OSRPS DESCRIBED IN THIS ESAP.
- 6 CIP AND EIP PROGRAMMING**
 - 6.1 SUMMARY OF PROGRAMMING FOR THE PAST YEAR.
 - 6.1 COMPARISON OF ACTUAL TOTAL EXPENDITURES AND BUDGETED TOTAL EXPENDITURES.
 - 6.3 DESCRIPTION OF EXPECTED BUDGET AND PROGRAMMING FOR THE COMING YEAR.
- 7 ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME**
 - 7.1 SUMMARY OF ESMS MONITORING COMMITMENTS COMPLETED DURING THE YEAR, INCLUDING SUMMARY OF RESULTS, COMPARISON OF ENVIRONMENTAL PERFORMANCE TO APPLICABLE ENVIRONMENTAL STANDARDS AND SUMMARY OF PERFORMANCE AGAINST KPIS.
 - 7.2 SUMMARY OF ENVIRONMENTAL AND SOCIAL TRAINING.
- 8 PROJECT COMMUNICATION**
 - 8.1 UPDATE OF ONGOING COMMUNICATION WITH EXTERNAL STAKEHOLDERS.
 - 8.2 UPDATE OF COMMUNITY LIAISON ACTIVITIES.
- 9 SUMMARY OF RESULTS OF RAP MONITORING**
- 10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS**
 - 10.1 DAYS AWAY FROM WORK CASES.
 - 10.2 INJURIES.
 - 10.3 FATALITIES.
- 11 AUDITS**
 - 11.1 SUMMARY OF THE RESULTS OF BTC CO. AND BOTAŞ'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

¹⁹ Following completion of construction, the Annual Report will not cover items that are relevant only to construction. In addition, if matters are covered in the Operations ESAP that are not reflected in the contents for the Annual Report, this Annex will be amended as appropriate to cover these matters.

Annex H of the Operations ESAP – Outline of Project Environmental and Social Monitoring Annual Report

Each annual report will address each of the topics listed below for BTC activities conducted in Azerbaijan, Georgia and Turkey.

- 1 EXECUTIVE SUMMARY**
- 2 ESIAS / EIA AND PERMITTING**
 - 2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE AZERBAIJANI, GEORGIAN AND TURKISH ESIAS DURING THE YEAR.
 - 2.2 SUMMARY OF MATERIAL PERMITS ISSUED DURING THE YEAR AND ANY APPLICABLE CONDITIONS.
 - 2.3 UPDATE ON STATUS OF PROJECT STATE SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIAS OR PERMITS.
- 3 CHANGES**
 - 3.1 DESCRIPTION OF ANY CHANGES TO AN ESIA DURING THE PERIOD TO REFLECT A CLASS I, II OR III CHANGE.
 - 3.2 SUMMARY OF THE TYPE OF CLASS I CHANGES IMPLEMENTED DURING THE PERIOD, OR A CONFIRMATION OF NO SUCH CHANGE.
 - 3.3 LIST OF ALL CLASS II CHANGES NOTIFIED DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.4 SUMMARY OF ALL CLASS III CHANGES DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.
 - 3.5 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MATERIAL MODIFICATION TO AN ESIA, THIS ESAP, THE RAP, THE ESMS, OR ANY OSRP.
- 4 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW**
 - 4.1 SUMMARY OF ANY NOTICES OF NON-COMPLIANCE, REMEDIAL ACTION, ANY FINES OR PENALTIES PAID AND FINAL DISPOSITION OF ANY REGULATORY PROCEEDINGS.
 - 4.2 SUMMARY OF AIR EMISSIONS.
 - 4.3 SUMMARY OF ENVIRONMENTAL DISCHARGES.
 - 4.4 STATEMENT INDICATING WHETHER BTC CO. AND ITS AGENTS HAVE COMPLIED IN THE DEVELOPMENT, CONSTRUCTION AND OPERATION OF THE BTC PROJECT WITH THIS ESAP, APPLICABLE ENVIRONMENTAL LAWS AND APPLICABLE LENDER ENVIRONMENTAL AND SOCIAL POLICIES AND GUIDELINES IN ALL MATERIAL RESPECTS AND SUMMARY OF ANY (I) MATERIAL NON-COMPLIANCE AND THE STEPS BEING TAKEN TO REMEDY IT AND (II) MATERIAL MODIFICATIONS OF ESIAS, PLANS OR PROGRAMMES MATERIALLY IN CONTRAVENTION OF THE OPERATIONAL POLICIES AND DIRECTIVES LISTED IN THIS ESAP.
 - 4.5 UPDATE ON SIGNIFICANT CHANGES IN APPLICABLE LAW, IF ANY.
- 5 OIL SPILL RESPONSE**
 - 5.1 SUMMARY OF OSRPS COMPLETED, UPDATED OR AMENDED DURING YEAR (AS DESCRIBED IN THIS ESAP).
 - 5.2 SPILL SUMMARIES (AZERBAIJAN, GEORGIA AND TURKEY).
 - 5.3 SPILL RESPONSE AND REMEDIATION SUMMARIES.
 - 5.4 SUMMARY OF MATERIAL MODIFICATIONS TO THE OSRPS DESCRIBED IN THIS ESAP.
- 6 ADDITIONALITY PROGRAMMING**
 - 6.1 SUMMARY OF PROGRAMMING FOR THE PAST YEAR.
 - 6.2 COMPARISON OF ACTUAL TOTAL EXPENDITURES AND BUDGETED TOTAL EXPENDITURES.
 - 6.3 DESCRIPTION OF EXPECTED BUDGET AND PROGRAMMING FOR THE COMING YEAR.
- 7 ENVIRONMENTAL AND SOCIAL MONITORING PROGRAMME**
 - 7.1 SUMMARY OF ESMS MONITORING COMMITMENTS COMPLETED DURING THE YEAR, INCLUDING SUMMARY OF RESULTS, COMPARISON OF ENVIRONMENTAL PERFORMANCE TO APPLICABLE ENVIRONMENTAL STANDARDS AND SUMMARY OF PERFORMANCE AGAINST KPIS.
 - 7.2 SUMMARY OF ENVIRONMENTAL AND SOCIAL TRAINING.
- 8 PROJECT COMMUNICATION**
 - 8.1 UPDATE OF ONGOING COMMUNICATION WITH EXTERNAL STAKEHOLDERS.
 - 8.2 UPDATE OF COMMUNITY LIAISON ACTIVITIES.
- 9 SUMMARY OF RESULTS OF RAP MONITORING (AS APPLICABLE)**
- 10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS**
 - 10.1 DAYS AWAY FROM WORK CASES.
 - 10.2 INJURIES.
 - 10.3 FATALITIES.
- 11 AUDITS**
 - 11.1 SUMMARY OF THE RESULTS OF BTC CO. AND BIL'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

APPENDIX 2: ENVIRONMENTAL MONITORING RESULTS

APPENDIX 2.1: AZERBAIJAN

Please read this section in conjunction with the commentary in Section 4.2.1.

Appendix 2.1a – Ambient Air Quality

Pollutant	Standard	Units	Averaging Period
NO ₂	40 (Annual average will reduce by 2 µg/m ³ every year, to reach 40 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
SO ₂	20	µg/m ³	Annual mean
Benzene	5 (Annual average will reduce by 1 µg/m ³ every year from 2006, to reach 5 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
PM ₁₀	20 (30 on 1 January 2005, reducing every 12 months thereafter by equal annual percentages to reach 20 by 1 January 2010)	µg/m ³	Annual mean

PSA2: July-August-2010

ID	Pollutant			Units
	SO ₂	NO ₂	Benzene	
PSA2 AQ 3p	5.7	5.5	1.7	µg/m ³
PSA2 AQ 5p	37.4	7.4	1.62	µg/m ³
PSA2 AQ 6p	7.0	7.8	1.7	µg/m ³
PSA2 AQ 7p	32.5	4.5	1.34	µg/m ³
PSA2 AQ 8p	6.3	8.5	1.55	µg/m ³

Appendix 2.1b – Stack Emissions Monitoring

Pollutant	Standard			Units
	Emission Stream Sources			
	MOL Turbines	WBH	Generators	
NO _x	70-75 at 15% O ₂ , dry	450	2000	mg/Nm ³
CO	N/A	N/A	650	mg/Nm ³
SO ₂	35	1000	1700	mg/Nm ³
PM ₁₀	5	100	130	mg/Nm ³

PSA2 / IPA1:

Equipment	Date tested	Load (kWth, Speed in % and Tem°C)	Fuel	Mean stack gas concentrations				Mass Emissions			
				NO _x	CO	SO ₂	PM	NO _x	CO	SO ₂	PM
				mg/Nm ³ , corrected to 15% O ₂				g/h			
PSA2 Turbine 1	21.11.10	89.1% speed	Gas	98.5	2063	0	5	4122	86373	0.0	259
PSA2 Turbine 2	24.11.10	90.1% speed	Gas	96	1785	0	5	4687	86520	0.0	300
PSA2 Turbine 3	26.11.10	93.1% speed	Gas	136	462	0	5	7771	26275	0.0	352
PSA2 Turbine 4	26.11.10	90.8% speed	Gas	110	1112	0	5	6087	61177	0.0	340
PSA2 Generator A	25.11.10	46.6% kWth	Diesel	490	198	7	50	2904	1177	0.0	367
PSA2 Generator B	30.11.10	46.6% kWth	Diesel	457	241	0	50	1805	951	0.0	244
PSA2 Generator C	24.11.10	45.8% kWth	Diesel	479	214	0	50	2339	1049	0.0	302
PSA2 WBH	30.11.10	75% °C	Diesel	171	8	36	50	137	6	29	44
IPA1 Generator A	22.11.10	34% kWth	Diesel	1536	105	0	50	1238	85	0.0	50
IPA1 Generator B	22.11.10	34% kWth	Diesel	608	228	0	50	514	193	0.0	52

NOTE: Figures in red indicate non-compliance with project standards

Appendix 2.1c – Environmental Noise

	Standard	Units	Period
PSA2 & IPA1 & Block Valves	55	dB (A)	Daytime
	45	dB (A)	Night-time

PSA2:

ID	Readings	Units	Date	Duration	Comments
PSA2 NM 1p	44.7	dB (A)	Nov-2010	5 min	daytime
PSA2 NM 2p	42.6	dB (A)	Nov-2010	5 min	daytime

IPA1:

ID	Readings	Units	Date	Duration	Comments
NM 1p	35.4	dB (A)	Nov-2010	5 min	daytime
NM 2p	38.7	dB (A)	Nov-2010	5 min	daytime
NM 3p	35.9	dB (A)	Nov-2010	5 min	daytime

Block Valves:

ID	Readings	Units	Date	Duration	Comments
AB-4 NM 1p	35.1	dB(A)	Nov-2010	5 min	daytime
AB-7 NM 1p	47.9	dB(A)	Nov-2010	5 min	daytime
AB-10 NM 1p	47.2	dB (A)	Nov-2010	5 min	daytime
AB-11 NM 1p	35.7	dB(A)	Nov-2010	5 min	daytime
AB-13 NM 1p	38.5	dB(A)	Nov-2010	5 min	daytime
AB-14 NM 1p	42.5	dB (A)	Nov-2010	5 min	daytime
AB-14 NM 2p	43.5	dB (A)	Nov-2010	5 min	daytime

Appendix 2.1d – Effluent Discharge Monitoring Programme

Parameter	Standard	Units
Total Coliform bacteria (per 100 ml)	<400	MPN/100 ml
pH	6-9	
Total residual chlorine	0.2	mg/l
BOD	25	mg/l
COD	125	mg/l
Total suspended solids	35	mg/l
Ammonia NH ₄	10	mg/l
Total Nitrogen	15	mg/l
Phenols	0.5	mg/l
Total Phosphorus	2.0	mg/l
Sulphides	1.0	mg/l
Oil and grease	10	mg/l
Silver (Ag)	0.5	mg/l
Arsenic (As)	0.1	mg/l
Cd	0.1	mg/l
Cr (total)	0.5	mg/l
Cu	0.5	mg/l
Fe	3.5	mg/l
Pb	0.1	mg/l
Hg	0.01	mg/l
Nickel (Ni)	0.5	mg/l
Selenium (Se)	0.1	mg/l
Zn	2.0	mg/l

PSA2 (Sample Location – PSA2 Retention Pond)

Parameter	Units	Month, 2010											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total Coliform bacteria	per 100 ml	28.3	370.7	90.7	153	133	2149	90.7	48.8	92.2	244	20.7	<20
pH	-	7.41	7.42	7.39	7.46	7.65	7.71	7.85	7.67	7.66	8.25	7.56	7.86
Total residual chlorine	mg/l	0.02	<0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.02	0.02
COD	mg/l	24.5	28	25.3	35	51	61.6	24	18.7	38.7	26.5	34.3	42
Total suspended solids	mg/l	1	0.3	0.67	1	1.5	7.6	6.2	2.4	5.4	5.25	2.3	2
Ammonia	mg/l	0.41	2.12	2.19	1.9	0.19	0.8	0.2	0.27	0.6	0.22	0.23	0.07
Total Nitrogen	mg/l	10.6	5.8	7.6	5.5	2.15	1.8	1.2	2.4	2.88	0.5	0.9	1.1
Turbidity	FNU	0.65	2.57	0.67	1.65	2.1	5.9	5.9	3.44	8.72	2.04	2.42	2.84
Conductivity	mS/cm	1.65	2.57	1.87	2.92	2.12	3.33	1.18	1.33	1.81	1.87	2.44	1.73
BOD	mg/l	15					1.6			<3			1
Phenols	mg/l	0.14					<0.03			0.04			<0.03
Total Phosphorus	mg/l	7.3					2.9			3.3			2.1
Sulphides	mg/l	<0.002					<0.002			<0.002			<0.002
Oil and grease	mg/l	<5					<5			<5			<5
Ag	mg/l	<0.001					<0.001			<0.001			0.001
As	mg/l	0.01					0.006			0.009			0.01
Cd	mg/l	0.001					<0.001			<0.001			<0.001
Cr (total)	mg/l	<0.01					<0.01			<0.01			<0.01
Cu	mg/l	0.008					0.012			0.01			0.02
Fe	mg/l	0.41					0.423			0.02			0.09
Pb	mg/l	<0.005					<0.005			<0.005			<0.005
Hg	mg/l	<0.00001					0.000014			<0.00001			0.000013
Ni	mg/l	0.01					0.027			0.011			<0.001
Se	mg/l	<0.005					0.008			<0.005			0.006
Zn	mg/l	<0.01					0.0165			<0.01			<0.01

Appendix 2.1e – Groundwater & Surface Water Monitoring Programme

Groundwater Monitoring – Karayazi & Around PSA2

Parameter	Unit	Date of sampling									
		May 2010					November 2010				
		Kar M1	Kar M2	Kar M3	Kar M5	Kar M6	Kar M7	Kar M8	Kar M10	Aran	PSA2 Yaldili
pH	-		7.0	7.3	7.4			7.0	7.0	8.6	9.3
Temperature	°C		18.3	21.4	20.9			20.0	18.0	28.0	27.1
Conductivity	mS/cm	No water	4.62	3.32	10.4	No water		2.94	13.5	2.1	0.45
THC	µg/L		<20	<20	<20			<20	<20	<20	<20
PAH	µg/L	No water	<0.01	<0.01	<0.01	No water		<0.01	<0.01	<0.01	<0.01
BTEX	µg/L		<0.05	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05
TSS	mg/L		2470	505	37			20	32	<2	<2

Parameter	Unit	Date of sampling									
		May 2010					November 2010				
		Kar M1	Kar M2	Kar M3	Kar M5	Kar M6	Kar M7	Kar M8	Kar M10	Aran	PSA2 Yaldili
pH	-		6.9	7.4	7.5			7.1	7.1	8.6	9.1
Temperature	°C		16	15	16			17	17	23	23
Conductivity	mS/cm	No water	4.5	3.4	8.8	No water		4.2	12.0	1.97	1.18
THC	µg/L		<20	<20	28			<20	<20	<20	<20
PAH	µg/L	No water	<0.01	<0.01	<0.01	No water		<0.01	<0.01	<0.01	<0.01
BTEX	µg/L		<0.05	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05
TSS	mg/L		459	81	45			171	131	<2	<2

Surface Water Monitoring PSA2

Parameter	Date of sampling	Unit	May-10			Nov-10		
			UpSt	DSt	UpSt	DSt		
Total Coliform bacteria (per 100 ml)		per 100 ml	8.6x10 ³	1.3x10 ⁴	841.4	1.9x10 ³		
pH		-	7.7	7.8	8.1	7.9		
BOD		mg/l	<0.5	<0.5	1.3	1.0		
COD		mg/l	11	<4	<4	5		
Total suspended solids		mg/l	20	14	3.1	9.5		
Ammonia NH4		mg/l	<0.01	0.014	<0.01	<0.01		
Total Nitrogen		mg/l	0.55	0.85	<0.5	<0.05		
Total Phosphorus		mg/l	0.095	0.146	<0.03	0.05		
TPH		µg/L	<20	<20	<20	32		
PAHs (sum of 4)		µg/L	<0.01	<0.01	<0.01	0.06		
Benzene		µg/L	<0.05	<0.05	<0.05	<0.05		
Toluene		µg/L	<0.05	<0.05	<0.05	<0.05		
Ethylbenzene		µg/L	<0.05	<0.05	<0.05	<0.05		
o-Xylenes		µg/L	<0.05	<0.05	<0.05	<0.05		

Surface Water Monitoring IPA1

NOTE: SW1 - Upstream sampling point; SW2 - Downstream sampling point

Parameter	Date of sampling		Unit	May-10		Nov-10	
	UpSt	DSt		UpSt	DSt		
Total Coliform bacteria (per 100 ml)	2.0x10 ⁴	2.3x10 ⁴	per 100 ml	431	1.7x10 ⁴		
pH	7.9	7.7	-	7.8	8.3		
BOD	1.7	1.8	mg/l	1.2	1.3		
COD	16	14	mg/l	<4	7.9		
Total suspended solids	9.1	4.5	mg/l	3.4	5.7		
Ammonia	0.017	<0.01	mg/l	<0.01	<0.01		
Total Nitrogen	0.99	0.60	mg/l	<0.05	<0.05		
Total Phosphorus	0.049	0.078	mg/l	<0.03	<0.03		
TPH	<20	<20	µg/L	<20	<20		
PAHs (sum of 4)	<0.01	<0.01	µg/L	<0.01	0.01		
Benzene	<0.05	<0.05	µg/L	<0.05	<0.05		
Toluene	<0.05	<0.05	µg/L	<0.05	<0.05		
Ethylbenzene	<0.05	<0.05	µg/L	<0.05	<0.05		
o-Xylenes	<0.05	<0.05	µg/L	<0.05	<0.05		

Appendix 2.1f – Waste

BTC Waste Volumes: Summary – 2010

Main Waste Streams	Unit	Value
Oily Solid Waste (oily rags, filters, absorbents, polyethylene)	tonne	5.63
Oily water	m ³	53.24
Oil and diesel (used)	m ³	0
Sewage wastes (raw)	m ³	2800.2
Sewage sludge	m ³	Included into sewage water
Contaminated cans and drums	tonnes	2.5
Antifreeze	m ³	Included into chemicals
Chemicals	tonnes	6.4
Wax	tonnes	3.43
Fluorescent tubes	tonne	0.4
Insulation material	tonne	Included into non-recyclable domestic waste
Construction waste	m ³	Included into non-recyclable domestic waste
Pig discs	tonne	2
Aerosol cans	m ³	0.82
Non-recyclable domestic wastes	tonne	60.6
Paper	tonne	3.45
Wood	tonne	5.26
Metal	tonne	7.2

APPENDIX 2.2: GEORGIA

Please read this section in conjunction with the commentary in Section 4.2.2.

Appendix 2.2a – Ambient Air Quality

Pollutant	Standard	Units	Averaging Period
NO ₂	40 (Annual average will reduce by 2 µg/m ³ every year, to reach 40 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
SO ₂	20 (For the protection of vegetation and ecosystems)	µg/m ³	Annual mean
Benzene	5 (Annual average will reduce by 1 µg/m ³ every year from 2006, to reach 5 µg/m ³ by 1 January 2010)	µg/m ³	Annual mean
PM ₁₀	20 (30 on 1 January 2005, reducing every 12 months thereafter by equal annual percentages to reach 20 by 1 January 2010)*	µg/m ³	Annual mean

* For the protection of vegetation and ecosystems

** No PM 10 was measured in 2010 due to the system running on natural gas

Results for NOx, SOx and Benzene (µg/m³)

ID	NOx	SOx	Benzene
PSG1-1	N/A	6.7	0.76
PSG1-2	6.1	13.1	0.63
PSG1-3	4.6	60.5	0.57
PSG1-4	6.7	8.7	0.66
PSG1-5	5.1	5.9	0.50
PSG2-1	3.1	*	0.54
PSG2-2	1.4	16.5	0.96
PSG2-3	1.2	8.2	0.49
PSG2-4	2.3	7.4	0.73
PSG2-5	2.6	6.5	0.46

N/A - Tubes displaced by external party

* - Laboratory was not able to analyze the tube due to damage or similar reason

Appendix 2.2b – Stack Emissions

2010 Annual monitoring

Equipment	Date	Load	Concentration at reference conditions				ESAP Standards			
			NOx	CO	SO ₂	PM	NOx	CO	SO ₂	PM
			mg/m ³				mg/m ³			
PSG1										
MOL Turbine 1	10/12/2010	96%	152.16	424.66	0.00	3.73	75	N/A	35	5
MOL Turbine 2	09/12/2010	96%*	44.77	8.86	1.04	3.90	75	N/A	35	5
MOL Turbine 3	09/12/2010	96%*	47.81	9.18	4.96	3.86	75	N/A	35	5
MOL Turbine 4	13/12/2010	96%*	53.68	7.64	1.84	3.93	75	N/A	35	5
MOL Turbine 5	13/12/2010	96%*	43.43	14.05	1.18	3.84	75	N/A	35	5
Generator 1	08/12/2010	45%	430.17	173.45	14.28	37.47	2000	650	1700	130
Generator 2**							2000	650	1700	130
Generator 3	08/12/2010	N/A	527.44	108.66	18.69	37.16	2000	650	1700	130
WBH	09/12/2010	N/A	227.84	8.10	30.50	23.29	460	N/A	1000	100
CTU	10/04/2010	N/A	106.86	28.87	35.41	3.32	120	N/A	1000	50

Equipment	Date	Load	Concentration at reference conditions				ESAP Standards			
			NOx	CO	SO ₂	PM	NOx	CO	SO ₂	PM
			mg/m ³				mg/m ³			
PSG2										
MOL Turbine 1	15/12/2010	96%	121.62	946.00	1.87	3.65	75	N/A	35	5
MOL Turbine 2	15/12/2010	90%	58.66	865.48	0.00	3.66	75	N/A	35	5
MOL Turbine 3**							75	N/A	35	5
MOL Turbine 4	17/12/2010	96%*	43.88	10.42	6.45	3.78	75	N/A	35	5
MOL Turbine 5	15/12/2010	90%	128.05	510.93	0.76	3.73	75	N/A	35	5
Generator 1	14/12/2010	N/A	289.89	931.28	74.69	24.97	2000	650	1700	130
Generator 2	14/12/2010	N/A	587.35	103.51	15.24	38.25	2000	650	1700	130
Generator 3	14/12/2010	N/A	1028.90	70.60	29.22	37.11	2000	650	1700	130
WBH	14/12/2010	N/A	195.85	14.64	50.30	28.84	460	N/A	1000	100
CTU	27/05/2010	N/A	118.75	6.05	41.87	3.11	120	N/A	1000	50

* - MoL Turbines in SoLoNOx mode

** - Equipment failed to turn on

Appendix 2.2c – Environmental Noise

Standard	Units	Period
55	dB (A)	Daytime
45	dB (A)	Night-time

PSG1 and PSG1 camp

Monitoring Point	GPS Coordinates	Site noise audible	Readings	Data and Time	Background noise
PSG1 NM1	8512350 4589284	Yes	52.5	27.04.10 12:25-12:30	Birds Frogs
PSG1 NM2	8512277 4589632	Yes	51.9	27.04.10 12:48-12:53	Birds Frogs
PSG1 camp NM1	8512325 4589015	No	47.8	27.04.10 13:23-13:28	Birds/Frogs
PSG1 NM3 (nearest residential location)	8513467 4590290	No	43.2	27.04.10 13:45-13:50	Stream, frogs, birds

PSG2 and PSG2 camp

Monitoring Point	GPS Coordinates	Site noise audible	Readings	Data and time	Background noise
PSG2 CAMP NM1	8452711 4600379	Camp generators within 40 m	49.9	27.04.10 17:28-17:33	Stream, Birds
PSG2 CAMP NM2	8452675 4600248	No	47.4	27.04.10 17:48-17:54	Stream, Birds
PSG2 CAMP NM3	8452657 4600181	No	46.8	27.04.10 17:00-17:05	Stream, Birds.
PSG2 NM1	8450375 4602555	Yes	51.6	27.04.10 16:17-16:23	birds
PSG2 NM2	8450170 4602501	Yes	53.8	27.04.10 16:35-16:40	birds

Borjomi OSRB

Monitoring Point	GPS Coordinates	Site noise audible	Readings	Data and time	Background noise
OSRB1	8368530 4632354	Yes (site generator)	56.7	22.04.10 15:15-15:22	Rain, River
OSRB2	8368529 4632251	No	52.3	22.04.10 15:35-15:40	Rain, River
OSRB3	8368465 4632339	No	52.2	22.04.10 15:55-16:00	Rain, River
OSRBNR	8368251 4632817	No	51.3	22.04.10 16:17-16:23	Rain, River

Tsalka OSRB

Monitoring Point	GPS Coordinates	Site noise audible	Readings	Data and time	Background noise
OSRT1	8421025 4606632	No	47.3	28.04.10 13:37-13:43	Rain, R, Wind
OSRT2	8420964 4606641	No	47.9	28.04.10 13:55-14:01	Rain, Wind
OSRT3	8420925 4606586	Yes (site generator)	52.3	28.04.10 14:24- 14:29	Rain, Wind, Birds
OSRTNR	8420566 4607965	No	43.4	27/11/09 14:48-14:52	Rain, Wind, Birds

EDDF

Monitoring Point	GPS Coordinates	Site noise audible	Readings	Data and time	Background noise
Q1 2010					
EDDF1	8371325 4621123	Site generator	37.6	17.02.10 14:13-14:18	Rain, River
EDDF2	8371485 4620962	No	40.3	17.02.10 13:54-13:59	Rain, River
EDDF3	8370815 4621309	No	52.5	17.02.10 13:31-13:36	Rain
Q2 2010					
EDDF1	8371325 4621123	Site generator	39.4	22.04.10 17:45-17:50	Rain, River
EDDF2	8371485 4620962	No	40.3	22.04.10 18:03-18:08	Rain, River
EDDF3	8370815 4621309	No	52.5	22.04.10 18:23-18:29	Rain
Q3 2010					
EDDF1	8371325 4621123	Site generator	47.5	10.08.10 16:20-16:25	River; Birds; Heavy Machinery approximately 150 m distance
EDDF2	8371485 4620962	No	43.7	10.08.10 16:10-16:15	Passing vehicle; people
EDDF3	8370815 4621309	No	35.6	10.08.10 16:40-16:45	Breeze; airplane fly over
Q4 2010					
EDDF1	8371325 4621123	Site generator	47.9	21.10.10 11:35-11:40	River; Birds;
EDDF2	8371485 4620962	No	42.6	21.10.10 11:55-12:00	Birds, river.
EDDF3	8370815 4621309	No	37.4	21.10.10 12:40-12:45	Birds, people

Appendix 2.2d – Effluent

PSG1 Retention Pond

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul*	Aug*	Sep*	Oct	Nov	Dec
Monthly													
pH	6-9	7.6	7.58	9.05	9.35	8.95	7.35				8.5	7.81	7.8
COD	125	<3	<3	12	45	100	373				15	<3	<3
Oil and grease	10	2.8	1.2	1.5	1.5	4.4	3.2				3	2.3	2.9
TSS	35	5	5	22	104	188	645				16	1	4
NH ₄	10	0.08	<0.01	0.33	0.27	0.07	1.8				0.2	0.03	<0.01
Sulphide	1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1				<0.1	<0.1	<0.1
Coliform	<400	9,200	70	79	220	3,500	1,700				23	<2	7
Quarterly													
BOD	25	4.9				3.93					7.22		
Heavy metals	10	<10				<10					<10		
As	0.1	<0.01				<0.01					<0.01		
Cd	0.1	<0.01				<0.01					<0.01		
Cr (6)	0.1	<0.03				<0.03					<0.03		
Cr total	0.5	<0.01				0.01					0.01		
Cu	0.5	<0.01				<0.01					<0.01		
Fe	3.5	0.12				0.01					0.05		
Pb	0.1	<0.01				<0.01					<0.01		
Hg	0.01	<0.01				<0.01					<0.01		
Ni	0.5	<0.01				0.03					0.02		
Se	0.1	<0.01				<0.01					<0.01		
Ag	0.5	<0.01				<0.01					<0.01		
Zn	1	0.02				<0.01					0.02		
Phenols	0.5	<0.02				<0.02					<0.02		
Chlorine	0.2	<0.01				<0.01					<0.01		

* - retention pond dry or frozen

PSG2 new STP (from April on - via newly constructed reed bed)

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly													
pH	6-9	7.5	7.61	7.75	7.7	7.77	7.95	6.73	7.6	7.25	7.82	7.73	7.95
COD	125	50	33	62	9	12	<3	<3	15	2	3	25	21
Oil & grease	10	1.5	1.6	2	1.6	2.1	1.9	1.6	1.5	2.7	1.9	5	2.6
TSS	35	32	28	24	11	2	6	12	2	6	4	3	3
NH ₄	10	34	15	2	1	0.07	0.01	<0.01	0.04	4	0.01	0.03	<0.01
Sulphide	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Coliform	<400	160000	54000	35000	26	2	17	11	4	49	11	<2	5
Quarterly													
BOD	25	12.3				4.1		6.85			6.85		
Heavy metals	10	<10				<10		<10			<10		
As	0.1	<0.01				<0.01		<0.01			<0.01		
Cd	0.1	<0.01				<0.01		<0.01			<0.01		
Cr (6)	0.1	<0.03				<0.03		<0.03			<0.03		
Cr total	0.5	0.01				<0.01		<0.01			<0.01		
Cu	0.5	<0.01				0.01		0.02			<0.01		
Fe	3.5	<0.01				0.01		0.01			0.01		
Pb	0.1	<0.01				<0.01		<0.01			<0.01		
Hg	0.01	<0.01				<0.01		<0.01			<0.01		
Ni	0.5	<0.01				0.02		0.04			<0.01		
Se	0.1	<0.01				<0.01		<0.01			<0.01		
Ag	0.5	<0.01				<0.01		<0.01			<0.01		
Zn	1	<0.01				0.01		0.01			<0.01		
Phenols	0.5	0.05				<0.02		<0.02			<0.02		
Chlorine	0.2												

PSG2 Retention Pond

Parameters	Standards	Jan*	Feb*	Mar*	Apr	May	Jun	Jul*	Aug*	Sep*	Oct*	Nov*	Dec
Monthly													
pH	6-9				7.5	7.2	7.25						8.01
COD	125				<3	13	<3						6
Oil & grease	10				1.4	2.4	3						3
TSS	35				10	12	18						2
NH ₄	10				0.07	0.2	0.1						0.02
Sulphide	1				<0.1	<0.1	<0.1						<0.1
Coliform	<400				2600	13	220						2
Quarterly													
BOD	25					4.2							3.26
Heavy metals	10					<10							<10
As	0.1					<0.1							<0.01
Cd	0.1					<0.01							<0.01
Cr (6)	0.1					<0.03							<0.03
Cr total	0.5					<0.01							<0.01
Cu	0.5					<0.01							0.03
Fe	3.5					<0.01							0.02
Pb	0.1					<0.01							<0.01
Hg	0.01					<0.01							<0.01
Ni	0.5					0.05							0.04
Se	0.1					<0.01							<0.01
Ag	0.5					<0.01							<0.01
Zn	1					<0.01							0.02
Phenols	0.5					<0.02							<0.02
Chlorine	0.2					0.02							0.02

* - retention pond dry or frozen

PSG1 camp STP via reed bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	7.1	7.13	7.3	7.4	7.05	7.35	7.12	7.4	6.56	7.35	7.42	7.41
BOD	25	4.38	4.2	4.5	3.8	3.84	3.26	7.9	3.8	4.2	4.7	3.8	3.5
COD	125	<3	<3	<3	<3	13	<3	<3	<3	<3	<3	<3	<3
TSS	35	7	8	3	5	3	4	2	3	2	2	2	1
TDS	2100	770.4	802.8	950.4	768	731.4	686.4	652.2	665.4	834.6	810.6	514.8	544.8
NH ₄	10	0.04	0.01	<0.01	0.01	0.08	0.1	0.03	0.01	0.01	0.03	<0.01	<0.01
Oil and grease	10	2	1.7	1.5	1.2	1.9	1.7	1.7	<1	1.5	2.1	3.2	2.6
Coliform	<400	35000	49	49	70	700	330	9	14	33	1600	17	5

PSG2 camp STP via reed bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	7.65	7.57	7.7	7.75	7.05	7.25	7.08	7.35	7.2	7.45	7.62	7.82
BOD	25	4.21	4.62	4.56	4.6	3.9	3.08	7.1	7.5	4.1	6.24	4.8	4.62
COD	125	<3	<3	<3	15	11	<3	<3	21	<3	5	<3	<3
TSS	35	3	4	3	32	4	2	3	2	3	2	3	1
TDS	2100	463.8	450.6	500.4	355.2	443	533.4	576.6	790.8	408.6	445.2	513.6	537
NH ₄	10	<0.01	<0.01	<0.01	0.04	0.12	0.01	0.08	<0.01	0.01	0.01	<0.01	0.16
Oil and grease	10	1	1.1	1.9	1.2	1.7	2.1	1.9	2.1	1.7	2.4	3.6	2.4
Coliform	<400	920	60	23	940	350	8	7	8	46	34	49	14

Akhaltsikhe camp STP via reed bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	7.15	7.2	7.2	7.35	6.85	7.01	7.82	7.3	6.6	7.2	7.25	8
BOD	25	6.22	5.4	7.8	4.9	4.7	3.18	8.75	3.4	4.62	3.8	4.6	3.71
COD	125	<3	<3	16	<3	<3	<3	<3	10	9	<3	4	<3
TSS	35	2	5	2	2	5	4	23	2	10	4	1	2
TDS	2100	762	718.8	753	773.8	693.6	757.2	462.6	1047	1824	1281	1076.4	252
NH ₄	10	3.3	2.7	3.2	3.8	1.1	0.17	5.8	0.04	0.03	<0.01	0.01	0.02
Oil and grease	10	1.5	1.3	2.5	2.4	2.6	2.5	2.3	1.9	2.7	2.3	2.4	3.1
Coliform	<400	130	5	5	920	<2	14	220	220	2	22	<2	<2

EDDF STP

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Monthly												
pH	6-9	7.65	7.64	6.85	6.9	7.3	7.55	7.18	7.4	7.3	7.42	7.52
COD	125	158	134	174	456	175	117	54	80	61	41	10
Oil and grease	10	2.4	2.6	1.7	4.2	2.2	3.2	2.3	2	2.8	2.8	5
TSS	35	100	90	48	105	115	34	99	36	24	32	6
NH ₄	10	58	26	35	41	31	2.6	9.2	52	38	43	0.04
Sulphide	1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
Coliform	<400	>180000	160000	>180000	>180000	>180000	160000	>180000	>180000	>180000	>180000	>180000
Quarterly												
BOD	25	14.2		5.8			9.25		5.6			
Heavy metals	10											
As	0.1	<0.01		<0.01			<0.01		<0.01			
Cd	0.1	<0.01		<0.01			<0.01		<0.01			
Cr (6)	0.1	<0.03		<0.03			<0.03		<0.03			
Cr total	0.5	<0.01		<0.01			<0.01		0.01			
Cu	0.5	0.01		<0.01			<0.01		<0.01			
Fe	3.5	0.07		0.15			0.2		0.06			
Pb	0.1	<0.01		<0.01			<0.01		<0.01			
Hg	0.01	<0.01		<0.01			<0.01		<0.01			
Ni	0.5	<0.01		0.002			0.03		0.03			
Se	0.1	<0.01		<0.01			<0.01		<0.01			
Ag	0.5	<0.01		<0.01			<0.01		<0.01			
Zn	1	0.02		0.01			0.01		<0.01			
Phenols	0.5	<0.02		<0.02			0.02		<0.02			
Chlorine	0.2											

Appendix 2.2e – Ground and Surface Waters

Round 9: May-July

Borjomi

Sample Description	MDL µg/l	BMW4_R009/2_10	BSW9_R009_10	BSW8_R009_10	BSW7_R009_10	BSW4_R009_10	BMW8_R009_10	BSW5_R009_10	BSW6_R009_10	BMW9_R009_10	BMW10_R009_10	BMW11_R009_10	BSW1_R009_10	BSW3_R009_10	BMW2_R009_10	BMW3_R009_10	BSW2_R009_10	BMW7_R009_10	BMW6_R009_10	BSW10_R009_10	BMW4_R009/1_10	BMW5_R009_10		
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
toluene	1	0.76	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.5	<0.2	<0.2	
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
naphthalene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.23	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Ktsia-Tabatskuri

Sample Description	MDL µg/l	BSW9_R009_10	BSW8_R009_10	BSW7_R009_10	KTMW17_R009_10	KTSW16_R009_10	KTMW16a_R009_10	KTSW14_R009_10	KTSW13_R009_10	KTSW15_R009_10	KTSW12_R009_10	KTSW10_R009_10	KTSW11_R009_10	KTMW11_R009_10	KTMW10_R009_10	KTSW8_R009_10	KTMW13_R009_10	KTMW14_R009_10	KTSW6_R009_10	KTSW7_R009_10	KTSW5_R009_10	KTSW4_R009_10	KTSW3_R009_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
naphthalene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Sample Description	MDL µg/l	KTSW18_R009_10	KTSW17_R009_10	KTMW7_R009_10	KTMW5_R009_10	KTMW9_R009_10	KTSW2_R009_10	KTMW3_R009_10	KTSW1_R009_10	KTMW2_R009_10	KTMW1_R009_10	KTMW4_R009/2_10	KTMW15_R009/2_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.94
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.28	<0.2	<0.2	<0.2	0.62
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.45	0.77
naphthalene	1	<0.2	<0.50	<0.20	<0.50	<0.2	<0.2	<0.30	<0.2	<0.40	<0.2	<0.2	<0.50
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Tsalka

Sample Description	MDL µg/l	TSW20_R009/1_10	TMW7_R009/1_10	TMW8_R009_10	TMW13_R009/1_10	TMW13_R009/1_10	TMW16_R009/2_10	TMW15_R009/2_10	TMW7_R009/2_10	TMW13_R009/2_10	TSW15_R010_10	TSW4_R009_10	TSW3_R009_10	TSW6_R009_10	TMW20_R009_10	TSW23_R009_10	TSW19_R009_10	TSW7_R009_10	TMW1_R009_10	TMW6_R009_10	TMW4_R009_10*	TMW5_R009_10*	TMW7_R009_10	TSW20_R009_10	TMW10_R009_10
benzene	1	<0.2	<0.2	<2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	240	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	0.27	0.59	<0.2
ethylbenzene	1	<0.2	<0.2	<2.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	<0.2	<0.2	<0.2
xylenes	1	<0.5	<0.5	<4.0	<0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	<0.5	0.98	<0.5
naphthalene	1	<0.2	<0.2	<2.0	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	N/A	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	<10

* - report for the locations had not been provided by the laboratory; results will be included upon provision of reports

Sample Description	MDL µg/l	TMW11_R009_10	TSW16_R009_10	TMW14_R009_10	TSW14_R009_10	TSW13_R009_10	TSW21_R009_10	TSW12_R009_10	TMW13_R009_10	TSW24_R009_10	TSW22_R009_10	TSW1_R009_10*	TMW18_R009_10	TSW15_R009_10	TMW17_R009_10	TSW2_R009_10*	TSW18_R009_10	TMW3_R009_10*	TMW17_R009_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	<0.2	<0.2	<0.2	N/A	<0.2	N/A	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	<0.2	<0.2	<0.2	N/A	<0.2	N/A	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	<0.2	<0.2	<0.2	N/A	<0.2	N/A	<0.2
xylenes	1	>0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	N/A	<0.5	N/A	<0.5
naphthalene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	N/A	<0.2	<0.2	<0.2	N/A	<0.2	N/A	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	<10	<10	<10	N/A	<10	N/A	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	<10	<10	<10	N/A	<10	N/A	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	<10	<10	<10	N/A	<10	N/A	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	<10	<10	<10	N/A	<10	N/A	<10

PSG1 and PSG2

Sample Description	MDL µg/l	PSG1MW1_R009_10	PSG1MW5_R009_10	PSG1SW1_R009_10	PSG1MW2_R009_10	PSG1MW6_R009_10	PSG1MW4_R009_10	PSG1MW3_R009_10	PSG2MW1_R009_10	PSG2SW2_R009_10	PSG2SW1_R009_10	PSG2SW3_R009_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
naphthalene	1	<0.2	<0.40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.40
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	>10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Round 10: September-October

Borjomi

Sample Description	MDL µg/l	BSW8_R010_10	BSW7_R010_10	BSW9_R010_10	BSW5_R010_10	BSW4_R010_10	BSW3_R010_10	BSW3_R010_10	BSW2_R010_10	BSW7_R010_10	BSW5_R010_10	BSW4_R010_10	BSW4_R010_10	BSW8_R010_10	BMW6_R010_10	BSW3_R010_10	BSW9_R010_10	BMW4_R010_10	BMW4_R010_10	BMW4_R010_10	BMW4_R010_10	BMW4_R010_10	
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.3	0.36	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
naphthalene	1	<0.30	<0.2	<0.50	<0.20	<0.2	<0.40	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.40	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Ktsia-Tabatskuri

Sample Description	MDL µg/l	KTSW5_R010_10	KTMW9_R010/1_10	KTMW15_R010/1_10	KTSW13_R010/1_10	KTSW14_R010/1_10	KTMW4_R010/1_10	KTMW5_R010_10	KTSW9_R010_10	KTSW13_R010_10	KTSW15_R010_10	KTSW16_R010_10	KTSW14_R010_10	KTMW17_R010_10	KTMW16a_R010_10	KTMW15_R010_10	KTMW11_R010_10	KTMW12_R010_10	KTMW9_R010_10	KTSW8_R010_10	KTMW10_R010_10	KTMW4/1_R010_10	KTMW5_R010_10	KTMW2_R010_10
benzene	1	<0.2	<0.2	<0.2	<0.2	0.45	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.21	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	0.24	<0.2	<0.2	<0.2	0.49	<0.2	<0.2	0.27	<0.2	<0.2	0.47	<0.2	<0.2	5	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	0.36	0.31	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.3	<0.3	<0.3	1	1.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
naphthalene	1	<0.2	<0.40	<0.2	<0.2	<0.30	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.40	<0.2	<0.2	<0.2	<0.70
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Sample Description	MDL µg/l	KTMW1_R010_10	KTSW1_R010_10	KTMW3_R010_10	KTSW2_R010_10	KTMW4_R010_10	KTMW7_R010_10	KTSW7_R010_10	KTSW18_R010_10	KTMW14_R010_10	KTMW13_R010_10	KTSW7_R010_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	0.22	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.3	<0.3	<0.3	0.33	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
naphthalene	1	<0.2	<0.2	<0.2	<0.2	0.26	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Tsalka

Sample Description	MDL µg/l	TSW22_R010_10	TSW24_R010_10	TMW13_R010_10	TSW12_R010_10	TSW21_R010_10	TSW13_R010_10	TSW16_R010_10	TMW14_R010_10	TMW10_R010_10	TMW17_R010_10	TSW4_R010_10	TMW18_R010_10	TSW23_R010_10	TSW19_R010_10	TMW11_R010_10	TMW20_R010_10	TSW7_R010_10	TSW6_R010_10	TSW20_R010_10	TMW7_R010_10	TMW16_R010_10	TMW15_R010_10	TMW6_R010_10	
benzene	1	<0.2	<0.2	<0.2	0.45	<0.2	<0.2	<0.2	0.32	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.91	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
naphthalene	1	<0.2	<0.2	<0.2	<0.2	<0.50	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	>10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Sample Description	MDL µg/l	TMW5_R010_10	TMW4_R010_10	TMW8_R010_10	TSW2_R010_10	TSW1_R010_10	TSW18_R010_10	TMW3_R010_10	TMW1_R010_10	TMW1_R010/1_10	TSW15_R010/1_10	TSW4_R010/1_10	TMW20_R010/1_10	TSW12_R010/1_10	TMW14_R010/1_10	TMW15_R010/1_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.34	<0.3	<0.3
naphthalene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

PSG1 and PSG2

Sample Description	MDL µg/l	PSG1MW1_R010_10	PSG1MW2_R010_10	PSG1MW3_R010_10	PSG1MW4_R010_10	PSG1MW5_R010_10	PSG1MW6_R010_10	PSG1SW1_R010_10	PSG2MW1_R010_10	PSG2SW1_R010_10	PSG2SW2_R010_10	PSG2SW3_R010_10
benzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
toluene	1	<0.2	<0.2	<0.2	<0.2	<0.2	0.22	<0.2	<0.2	<0.2	<0.2	<0.2
ethylbenzene	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
xylenes	1	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
naphthalene	1	<0.2	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
C10-C12	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C12-C22	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C22-C30	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
C30-C40	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Appendix 2.2f – Waste

Total Figures, 2010

TYPE OF WASTE (m ³)	PSG1 (site and camp)	PSG2 (site and camp)	SES Tsalka	SES Borjomi	BVs	SES Rustavi and Tbilisi Office
Hazardous waste disposed offsite						
Oily solids	37.9	28.4	2.2	6	0	7.2
Oily liquids	22.8	35.3	6.2	0.8	0	3.6
Sewage sludge	140	120	0	0	0	52
Wax	0.2	0	0	0	0	0
Other	62.4	42.2	0	3.2	24	2.5
Non-hazardous waste recycled/recovered offsite						
Glass (stored)	16.2	14.6	0	0	0	0
Plastic (stored)	63.2	50.2	7.8	3.6	0	4.8
Paper (stored)	45.6	16	7.2	4.6	0	5.2
Metal (stored)	3.6	2.8	0	0.4	0	0
Timber (stored)	2.2	4	0	0	0	0
Organic Wastes (food wastes)	16.6	21.7	0	0	0	0
General	315	446	21.2	28.9	0	210

APPENDIX 2.3: TURKEY

Please read this section in conjunction with the commentary in Section 4.2.3.

Appendix 2.3a – Ambient Air Quality

Air Quality Standards for Ground Level Concentrations ($\mu\text{g}/\text{m}^3$)

Parameter	Project Standards (Turkey)	Averaging Period
VOCs	Benzene: 5	Annual average by 2010. A limit value of 10 $\mu\text{g}/\text{m}^3$ (100%) must be met on 13 December 2000, reducing on 1 January 2006 and every 12 months thereafter by 1 $\mu\text{g}/\text{m}^3$ to reach 0% (5 $\mu\text{g}/\text{m}^3$) by 1 January 2010.
NO _x	40	Annual mean
SO ₂	20	24 hour average

NOTE: Figures in red show non-compliance with project standards

Ceyhan Marine Terminal - Averages of 2010 Measurements

No.	Monitoring Date	Average Ambient Concentrations ($\mu\text{g}/\text{m}^3$)						
		SO ₂	NOx	Benzene	Toluene	Ethyl Benzene	mp-xylene	o- xylene
CMT 1	Jan-Apr-July-Oct 2010	3,95	7,98	0.79*	0,95	0,65	0,95	1,25
CMT 2		9,93	8,59	0,81	1,08	0,67	0,59	0,6
CMT 3		4,54	7,4	1,02	1,91	0,82	1,11	0,77
CMT 4		3,1	6,91	0,57	0,9	0,44	0,45	0,42
CMT 5		3,27	8,96	0.83*	0,97	0,71	0,65	0,52
CMT 6		3,45	8,92	0,65	0,96	0,62	0,62	0,48
CMT 7		3,64	6,69	0.73*	0,95	0,6	0,6	0,46
CMT 8		5,23	7,54	0.77*	0,69	0,49	0,48	0,4
CMT 9		3,92	8,42	1,02	1,63	0,81	1,52	0,88
CMT 10		5,94	7,04	0.95*	1,15	1,04	0,07	0,67

* Erroneously high readings for benzene at stations CMT1, 5, 7, 8 and 10 measured during the Fall round of monitoring have been ignored. See 4.2.3.1 for details.

Appendix 2.3b – Stack Emissions

Stack Emission Standards

Emission stream sources	Parameters	Project Specified Standard
5 MW Reciprocating engines (gas fired) (PTs 1, 2, 3 and 4)	NO_x	500 mg/Nm ³ (5% Volumetric O ₂)
	SO₂	60 mg/Nm ³ (5% Volumetric O ₂)
	CO	650 mg/Nm ³ (5% Volumetric O ₂)
	PM	130 mg/Nm ³ (5% Volumetric O ₂)
Water Heaters (diesel fired) (Wax Handling Boilers at CMT, IPT1 and IPT2)	NO_x	460 mg/Nm ³ (3% Volumetric O ₂)
	SO₂	1,000 mg/Nm ³ (3% Volumetric O ₂)
	CO	150 mg/Nm ³ (3% Volumetric O ₂)
	Soot	2
Water Heaters (gas and LPG fired) (CMT, PTs 1, 2, 3 and 4)	NO_x	320 mg/Nm ³ (3% Volumetric O ₂)
	SO₂	100 mg/Nm ³ (3% Volumetric O ₂)
	CO	100 mg/Nm ³ (3% Volumetric O ₂)
	PM	10 mg/Nm ³ (3% Volumetric O ₂)
Generators/Fire pumps (diesel fired) (monitored only if the annual run time is < 500 hrs)	NO_x	460 mg/Nm ³ (3% Volumetric O ₂)
	SO₂	1,000 mg/Nm ³ (3% Volumetric O ₂)
	Soot	2
	CO	250 mg/Nm ³ (15% Volumetric O ₂)
	PM	75 mg/Nm ³ (15% Volumetric O ₂)

As per the Turkish Regulation on Control of Air Pollution Originated from Heating (RCAPOH), one round monitoring of camp site heaters was realized according to below standards identified in the regulation.

Camp Site Heaters Emission Standards as per RCAPOH

Parameter	Composite Sample – 24 hrs
CO	110 mg/kWh
NO₂	250 mg/kWh
soot	1

Stack Emission Monitoring Results for Pump Stations

Facility	Parameter	Emission Source																	
		Driver Engine 1	Driver Engine 2	Driver Engine 3	Driver Engine 4	Driver Engine 5	Water Heater 1	Water Heater 2	Water Heater 3										
PT 1																			
Date of monitoring								May '10											
	NO_x	134	134	142	78	93	116	97	121										
	SO₂	0	0	0	0	0	0	0	0										
	PM	5.4	5.4	3.69	3.55	2.83	0.56	0.66	1.02										
	CO	46	46	13.62	41	43	0	0	0										
PT 2																			
Date of monitoring								May '10											
	NO_x	115	78	111	134	93	151	138											
	SO₂	0	0	0	0	Not existing	0	0	0										
	PM	3.85	2.44	2.98	4.52	1.12	0.66	0.75											
	CO	41	34	24	42	0	0	13											
PT 3																			
Date of monitoring								May '10											
	NO_x	157	101	115	84	131	74	89	98										
	SO₂	0	0	0	0	0	0	0	0										
	PM	3.01	2.44	5.07	3.36	2.93	1.14	1.24	0.89										
	CO	21	48	33	65	56	10	10	0										
PT 4																			
Date of monitoring								May '10											
	NO_x	402	172	464	226	153	138	99											
	SO₂	0	0	0	0	0	0	0	0										
	PM	13.14	3.4	0.86	1.85	4.54	3.18	6.59											
	CO	0	0	0	0	0	0	5											

Stack Emission Monitoring Results for Intermediate Pigging and Pressure Reduction Station

Facility	Parameter	Emission Source
IPT1		Wax Handling Water Heater
Date of monitoring		
	NO _x	May '10 138
	SO ₂	3
Monitoring result	soot	1
	CO	0
IPT2		
Date of monitoring		
	NO _x	May '10 101
	SO ₂	0
Monitoring result	soot	1.7
	CO	4

Stack Emission Monitoring Results for Ceyhan Marine Terminal

Facility	Parameter	Emission Source
CMT		Process Area Wax Handling Boiler (diesel) Metering Wax Handling Boiler (diesel)
Date of monitoring		
	NO _x	Nov '10 83
	SO ₂	185
Monitoring result	soot	1
	CO	137

Camp Site Heaters Monitoring Results as per RCAPEOH

Parameter	PT1		PT2		PT3		PT4		CMT
	Heater-1	Heater-2	Water Heater-1	Heater-2	Heater-1	Heater-2	Water Heater-1	Heater-2	
CO	13.5	3.4	65.8	0	16.1	47.5	23.1	41.8	55.3
NOx	89	90.1	76.4	90.2	80.8	74.6	101.4	80.4	80
Soot	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5
Monitoring result									
									11.6
									78.2
									1.5

Appendix 2.3c – Aqueous Discharges

Aqueous Discharge Standards

Waste stream sources	Parameters	Project Specified Standard
	All limits 95 th percentiles of annual operational hours.	
	pH	6-9 for fresh water and 5-9 for marine water
	Oil and grease	10 mg/l
	Total suspended solids	35 mg/l
	Metals	
	Heavy metals, total	10 mg/l
Aqueous discharges to surface and marine waters from oily water separators	Cd	0.05 mg/l
	Cr total	0.5 mg/l
	Cu	0.5 mg/l
	Pb	0.5 mg/l
	Hg	0.01 mg/l
	Ni	0.5 mg/l
	Zn	2 mg/l
	NH ₄	10 mg/l
	Phenols	0.5 mg/l
	Sulphur	1 mg/l
Aqueous discharges to surface waters from sewage treatment plants	pH	6-9
	BOD	25 mg/l
	COD	120 mg/l
	Oil and grease	10 mg/l
	Total suspended solids	35 mg/l
	Chlorine, total residual	0.2 mg/l
	Coliform bacteria	<400 mPN/100 ml

NOTE: Figures in red show non-compliance with project standards

Table Notes:

- When it is stated that there is 'no discharge' it means that the water was sampled but not discharged since the final effluent was not compliant with the Project Standards. In this case non-compliant waste water was re-cycled or when the capacity of the plant was exceeded it was disposed of at a Project approved Municipal WWTP. At CMT where there is a construction phase WWTP still in place, the waste water was transferred to this plant for treatment only if it was operating in compliance with Project Standards.
- When it is stated that there is 'no flow' it means that the water could not be sampled since there was no flow at the time of monitoring.
- As per EEMP, for OWSs, metals, phenols and sulphur will be monitored on a quarterly basis for one year to determine compliance with project standards. If standards are exceeded on these occasions follow-up monitoring will be undertaken as necessary. During 2008 quarterly OWS monitoring, it was seen that there were some exceedances of sulphur; thus quarterly sulphur monitoring continued in 2009 and 2010.
- As per the MoEF request, one round monitoring of OWSs was conducted as per Table 11.2 of Turkish Water Pollution Control Regulation. The parameters that fall outside the regular monthly monitoring parameters were analysed as once in 2010 which related results are presented on below tables.

Sector: Petroleum Industry (Petroleum Filling Facilities and similar)

Parameter	Composite Sample – 2 hrs	Composite Sample – 24 hrs
COD	400 mg/l	200 mg/l
TSS	60 mg/l	30 mg/l
Oil and grease	40 mg/l	20 mg/l
Hydrocarbons	6 mg/l	8 mg/l
Phenols	2 mg/l	1 mg/l
Total Cyanide (CN ⁻)	0,5 mg/l	0,2 mg/l
Sulphur (S ²⁻)	2 mg/l	1 mg/l
pH	6-9	6-9

PT2 Aqueous Discharges Monitoring Results

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
Ops WWTP												
pH							No discharge					
BOD (mg/l)								7.71	8.77		8.55	
COD (mg/l)					10.8			6.6	10.4		14.4	
Oil and grease (mg/l)					59.2			25.3	100.8		58.3	
TSS (mg/l)			No discharge		1.5	No discharge		2.2	1.5	No discharge	<1.5	No discharge
Total residual chlorine (mg/l)					24			1.2	3.2		8.4	
Coliform bacteria					0.1			0.09	0.08		0.09	
					21			240	23		43	
Storm Water Pond (SWP)												
pH					9							
BOD (mg/l)					10.8							
COD (mg/l)					59.2							
Oil and grease (mg/l)			No discharge		1.5	No discharge						
TSS (mg/l)					24							
Total residual chlorine (mg/l)					0.1							
Coliform bacteria					21							
SWP upstream												
pH	7.12	8.02	7.64	7.58	7.8	7.31	8.25	7.86	8.3	8.04	7.33	8.63
BOD (mg/l)	4	<4	4	4	8.5	4	4.6	4	<4	<4	4.6	<4
COD (mg/l)	61.7	<20	20	36	44.5	136.4	20	20	<20	<20	99.3	<20
Oil and grease (mg/l)	1.5	<1.5	2.6	1.5	1.5	4.2	<1.5	1.5	<20	<20	1.6	<1.5
TSS (mg/l)	1	<1	1	331	984	1	<1	1	1.2	2	<1	<1
Total residual chlorine (mg/l)	0.04	0.9	0.09	0.04	0.02	0.02	0.04	0.04	0.09	0.11	0.02	0.02
Coliform bacteria	93	43	23	1100	1100	1100	1100	1100	>1100	>1100	>1100	>1100
SWP downstream												
pH	8	8.18	8.08	7.64	8	7.21	8.35	7.92	8.14	7.9	7.21	8.5
BOD (mg/l)	4	<4	4	4	13.6	4	<4	4	<4	<4	<4	<4
COD (mg/l)	<20	<20	20	30	215.4	20	<20	22.4	<20	<20	<20	<20
Oil and grease (mg/l)	<1.5	<1.5	1.8	3	3.2	4	<1.5	1.5	<1.5	<1.5	1.6	<1.5
TSS (mg/l)	2.4	<1.5	1	183	400	6.4	<1	1	<1.0	1.2	<1	<1
Total residual chlorine (mg/l)	0.04	0.06	0.02	0.04	0.03	0.02	0.04	0.05	0.09	0.09	0.02	0.02
Coliform bacteria	1100	43	23	1100	<1100	1100	1100	1100	>1100	>1100	>1100	>1100
OWS												
pH	7.28	7.85	9.23	8.87	7.84	6.34	8.18	7.24	7.28	8.26	8.12	8.06
Oil and grease (mg/l)	2.6	<1.5	8.2	2	1.8	4.6	<1.5	1.5	<1.5	<1.5	<1.5	3.2
TSS (mg/l)	4.8	0.6	28	2.4	12.8	1	7.2	6	11.2	22	18	1
Sulphur (mg/l)			2.8	1.6								
COD (mg/l)												
Hydrocarbons (mg/l)												
Phenol (mg/l)												
Total cyanide (mg/l)												
			n/a since wasn't in the programme				n/a since wasn't in the programme				n/a since wasn't in the programme	

PT3 Aqueous Discharges Monitoring Results

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
Ops WWTP (existing)												
pH		8.72	8.15	8.45	7.99	8.1		8.21				
BOD (mg/l)		<4	<4	<4	<4	7.1		<4				
COD (mg/l)		47	35.2	24	<20	119.6		39.8				
Oil and grease (mg/l)	No discharge	3.6	5	<1.5	<1.5	1.8	No discharge	<1.5				Not needed as the new WWTP operates
TSS (mg/l)		14	10.8	4.8	2.4	6.4		<1				
Total residual chlorine (mg/l)		0.14	0.14	0.19	0.04	0.17		0.05				
Coliform bacteria		<3	<3	<3	<3	<3		<3				
Ops WWTP (new)												
pH						7.97			8.21	8.6	7.61	8.03
BOD (mg/l)						6.11			<4	<4	6.3	8.9
COD (mg/l)						46.19			63.9	55.1	52.5	84.6
Oil and grease (mg/l)			n/a			2.28	Not monitored		<1.5	<1.5	<1.5	<1.5
TSS (mg/l)						1.52			6.8	16.8	3.6	12
Total residual chlorine (mg/l)						0.15			0.06	0.08	0.11	0.07
Coliform bacteria						190			<3	23	23	43
Storm Water Pond (SWP)												
pH	9	8.92	9			7.85		8.18			8.41	
BOD (mg/l)	10.1	5	<4			10		<4			14	
COD (mg/l)	88.1	94	49.9			94.3		92.1			84.6	
Oil and grease (mg/l)	<1.5	<1.5	4.2	No discharge		1.8	No discharge	<1.5	No discharge	No discharge	<1.5	No discharge
TSS (mg/l)	30	18	12			23		1.2			17.6	
Total residual chlorine (mg/l)	<0.02	0	0.14			0.13		0.04			0.08	
Coliform bacteria	<3	<3	<3			4		<3			20	
OWS												
pH	8.86	8.87	8.75	8.59	8.2	8	8.63	7.89	8.24	8.71	8.25	8.92
Oil and grease (mg/l)	<1.5	3.4	<1.5	2.8	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	2.4	<1.5
TSS (mg/l)	5.2	4.8	4	5.2	8	8	2.4	16.4	4.4	4	2	<1
Sulphur (mg/l)		<1	<1							<1		
COD (mg/l)	n/a since wasn't in the programme						n/a since wasn't in the programme			22.7	n/a since wasn't in the programme	
Hydrocarbons (mg/l)										<0.1		
Phenol (mg/l)										<0.002		
Total cyanide (mg/l)										<0.002		

PT4 Aqueous Discharges Monitoring Results

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
Ops WWTP												
pH	7.65				8.4						7.91	
BOD (mg/l)	6				6.6						6.7	
COD (mg/l)	41.1				56.2						49.5	
Oil and grease (mg/l)	<1.5		No discharge		1.5			No discharge			4.8	No discharge
TSS (mg/l)	12.8				6.8						16.8	
Total residual chlorine (mg/l)	0.11				0.19						0.3	
Coliform bacteria	<3				<3						3	
Storm Water Pond (SWP)												
pH		8.79			8.7	8.1		8.12				
BOD (mg/l)		11.9			9.2	4		4				
COD (mg/l)		58.7			53.3	49.3		45.6				
Oil and grease (mg/l)		No discharge		No discharge	7.4	5.2	No discharge	1.5			No discharge	
TSS (mg/l)		28			4.4	5.6		0				
Total residual chlorine (mg/l)		0.1			0.19	0.17		0.15				
Coliform bacteria		<3			<3	9		23				
OWS												
pH	7.85	7.25	8.36	8.64	8.1	8.18	7.22	6.95	6.2	6.1	8.02	8.55
Oil and grease (mg/l)	<1.5	2.4	2.8	<1.5	4	6.6	1.5	1.5	4.2	14.8	1.5	3.6
TSS (mg/l)	6	6.8	15.6	11.2	7.6	15	20	23.6	53.3	110	4.8	7.6
Sulphur (mg/l)		2.8	<1							<1	<1	
COD (mg/l)		n/a since wasn't in the programme				n/a since wasn't in the programme				n/a since wasn't in the programme	37.8	n/a since wasn't in the programme
Hydrocarbons (mg/l)											<0.1	
Phenol (mg/l)											<0.002	
Total cyanide (mg/l)											<0.002	

IPT1 Aqueous Discharges Monitoring Results

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
Ops WWTP												
pH		7.63	7.31		7.26		6.82	7.18	7.24		7.43	
BOD (mg/l)		7.3	7		4		4	4	4		4	
COD (mg/l)		47	50.9		20		20	20	20		26.1	
Oil and grease (mg/l)		2.4	1.5	No discharge	4.6	No discharge	1.5	1.5	1.5	No flow	1.5	No discharge
TSS (mg/l)		15.6	14.8		1		1.2	5.6	2.4		1	
Total residual chlorine (mg/l)		0.02	0.02		0.15		0.16	0.14	0.02		0.03	
Coliform bacteria		23	23		150		4	150	93		9	

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
OWS												
pH	7.1	7.8	7.1	7.8	7.18	7.61			7.79	6.91	7.86	7.25
Oil and grease (mg/l)	1	1.5	2.6	2	5.2	1.5	No flow		1.5	1.5	1.8	1.5
TSS (mg/l)	1.5	2	9.2	<1	3.2	2.4			1	7.6	1	1
Sulphur (mg/l)		1.2	<1							<1		
COD (mg/l)	n/a since wasn't in the programme									<20		
Hydrocarbons (mg/l)	n/a since wasn't in the programme									<0.1	n/a since wasn't in the programme	
Phenol (mg/l)	n/a since wasn't in the programme									<0.002		
Total cyanide (mg/l)	n/a since wasn't in the programme									<0.002		

IPT2 Aqueous Discharges Monitoring Results

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
OWS												
pH	6.2	6.96	8.29	6.98	6.94	7.11	7.65		5.69	5.89	7.89	5.7
Oil and grease (mg/l)	1.5	1.5	1.5	6.8	2.2	5.4	3.6	No discharge	68.4	3.8	1.8	1
TSS (mg/l)	1	2	4.4	8.4	8	12.8	11.2		44	8.4	20.8	8.4
Sulphur (mg/l)		1.6	<1							<1		
COD (mg/l)	n/a since wasn't in the programme									n/a since wasn't in the programme		
Hydrocarbons (mg/l)	n/a since wasn't in the programme									n/a since wasn't in the programme		
Phenol (mg/l)	n/a since wasn't in the programme									n/a since wasn't in the programme		
Total cyanide (mg/l)	n/a since wasn't in the programme									n/a since wasn't in the programme		

CMT Aqueous Discharges Monitoring Results

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
Ops WWTP												
pH	7.78	7.85	7.52	8.26	8.8	7.75	7.35	8.02	7.67	8	8.14	7.31
BOD (mg/l)	<4	<4	8.5	7.6	<4	5.6	4	4.1	4	4.4	4	4
COD (mg/l)	49	52.9	55.8	74.8	43.9	60.5	42.7	20	39.8	87.5	70	52.5
Oil and grease (mg/l)	1.6	2.8	<1.5	7	2	<1.5	1.8	6.6	2.2	1.6	1.5	1.5
TSS (mg/l)	10.8	<1	10.4	17.2	3.2	14	16.8	1	3.6	17.6	8	4.8
Total residual chlorine (mg/l)	0.2	0.2	0.2	0.16	0.18	0.11	0.2	0.12	0.2	0.2	0.18	0.2
Coliform bacteria	<3	<3	<3	23	<3	210	75	9	3	3	4	3
Construction WWTP												
pH	7.61	7.35	7.62	7.43	7.4	7.41	7.4	7.9	7.7	7.95	7.61	
BOD (mg/l)	<4	<4	<4	<4	4	4	4	4	4	4	4	
COD (mg/l)	23.5	<20	<20	<20	26.7	29.6	20	20	20	37.4	40.8	No discharge
Oil and grease (mg/l)	<1.5	2.8	<1.5	1.8	1.5	1.5	1.5	1.6	1.8	4.4	1.5	
TSS (mg/l)	<1	<1	<1	<1	1	1	1	2	1	1	2	
Total residual chlorine (mg/l)	0.2	0.2	0.2	0.2	0.04	0.11	0.2	0.08	0.1	0.2	0.2	
Coliform bacteria	<3	<3	<3	<3	3	240	120	9	43	3	3	

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
Storm Water Pond (SWP)												
pH		8.23			8.85	8.9	8.9	8.9	8.91			
BOD (mg/l)		5			6.1	8.5	6.7	6.3	4			
COD (mg/l)		44.1			63.9	77.4	57.3	45.6	57.3			
Oil and grease (mg/l)	No discharge	2.6	No discharge		5.2	1.5	1.5	1.5	1.8		No discharge	
TSS (mg/l)		6.4			10.4	17	29.2	10.4	23.6			
Total residual chlorine (mg/l)		0.06			0.02	0.11	0.17	0.08	0.03			
Coliform bacteria		150			75	9	20	23	39			
SWP upstream												
pH	7.76	8.29	7.5	7.84	8.4	8.05						
BOD (mg/l)	<4	<4	<4	<4	4	4						
COD (mg/l)	<20	<20	<20	<20	35.3	24						
Oil and grease (mg/l)	<1.5	2.8	<1.5	<1.5	1.6	1.5				No flow		
TSS (mg/l)	2.8	3.6	4.8	10	2.4	4						
Total residual chlorine (mg/l)	0.03	0.02	<0.02	0.11	0.05	0.16						
Coliform bacteria	23	240	93	240	1.100	1.100						
SWP downstream												
pH	7.9	8.21	8.1	8.49	8.54	7.88						
BOD (mg/l)	<4	<4	<4	15.6	5.8	4						
COD (mg/l)	52.9	73.4	<20	33	41	38						
Oil and grease (mg/l)	3.4	<1.5	<1.5	<1.5	1.5	1.5					No flow	
TSS (mg/l)	9.2	4	8	30	35.6	8						
Total residual chlorine (mg/l)	0.04	0.04	0.04	0.03	0.07	0.06						
Coliform bacteria	>1100	460	460	>1100	1100	1100						
OWS 1&2 (office and housing compounds)												
pH		7.4	8.6		8.9					8.9		7.25
Oil and grease (mg/l)		<1.5	<1.5	No flow	1.5			No flow		1.6	No flow	6.4
TSS (mg/l)		8	10		17.6					9		18
Sulphur (mg/l)	No flow	<1	<1							<1		
COD (mg/l)										40.5		
Hydrocarbons (mg/l)										<0.1	n/a since wasn't in the programme	
Phenol (mg/l)										<0.002		
Total cyanide (mg/l)										0.005		
OWS 3 (process area)												
pH					No flow					7.22		No flow
Oil and grease (mg/l)										2		
TSS (mg/l)										1		
Sulphur (mg/l)										<1		
COD (mg/l)										31.7		n/a since wasn't in the programme
Hydrocarbons (mg/l)										<0.1		
Phenol (mg/l)										<0.002		
Total cyanide (mg/l)										0.003		

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10
OWS 4 (tank farm)												
pH	7.7	6.7	7.15	7.3				7.4		7.42		
Oil and grease (mg/l)	<1.5	<1.5	3.8	1.8		No flow		4	No flow	5		No flow
TSS (mg/l)	2	<1	1.2	9				4		1.2		
Sulphur (mg/l)	n/a since wasn't in the programme	2.8	<1							<1		
COD (mg/l)	n/a since wasn't in the programme	n/a since wasn't in the programme				n/a since wasn't in the programme				84.3		n/a since wasn't in the programme
Hydrocarbons (mg/l)										<0.1		
Phenol (mg/l)										<0.002		
Total cyanide (mg/l)										0.003		
OWS 5 (metering area)												
pH	8.1	7.29	7.22	8.15	8.1					7.5		
Oil and grease (mg/l)	<1.5	3.2	<1.5	<1.5	1.5		No flow			2.4	No discharge	No flow
TSS (mg/l)	<1	<1	<1	<1	<1					4		
Sulphur (mg/l)	n/a since wasn't in the programme	1.2	<1							<1		n/a since wasn't in the programme
COD (mg/l)	n/a since wasn't in the programme	n/a since wasn't in the programme								n/a since wasn't in the programme		n/a since wasn't in the programme
Hydrocarbons (mg/l)										58.3		
Phenol (mg/l)										<0.1		
Total cyanide (mg/l)										<0.002		
OWS 6 (jetty 1)												
pH		6.55	6.2							7.3		
Oil and grease (mg/l)	No flow	<1.5	<1.5			No flow				1.5		No flow
TSS (mg/l)		3.2	<1							1.6		
Sulphur (mg/l)	n/a since wasn't in the programme	<1	<1							<1		
COD (mg/l)	n/a since wasn't in the programme	n/a since wasn't in the programme								58		n/a since wasn't in the programme
Hydrocarbons (mg/l)										<0.1		
Phenol (mg/l)										<0.002		
Total cyanide (mg/l)										0.004		
OWS 7 (jetty 2)												
pH		6.42	6.1							7.45		
Oil and grease (mg/l)	No flow	<1.5	<1.5			No flow				1.5		No flow
TSS (mg/l)		<1	1.2							1.2		
Sulphur (mg/l)	n/a since wasn't in the programme	<1	<1							<1		
COD (mg/l)	n/a since wasn't in the programme	n/a since wasn't in the programme								66.8		n/a since wasn't in the programme
Hydrocarbons (mg/l)										<0.1		
Phenol (mg/l)										<0.002		
Total cyanide (mg/l)										0.003		

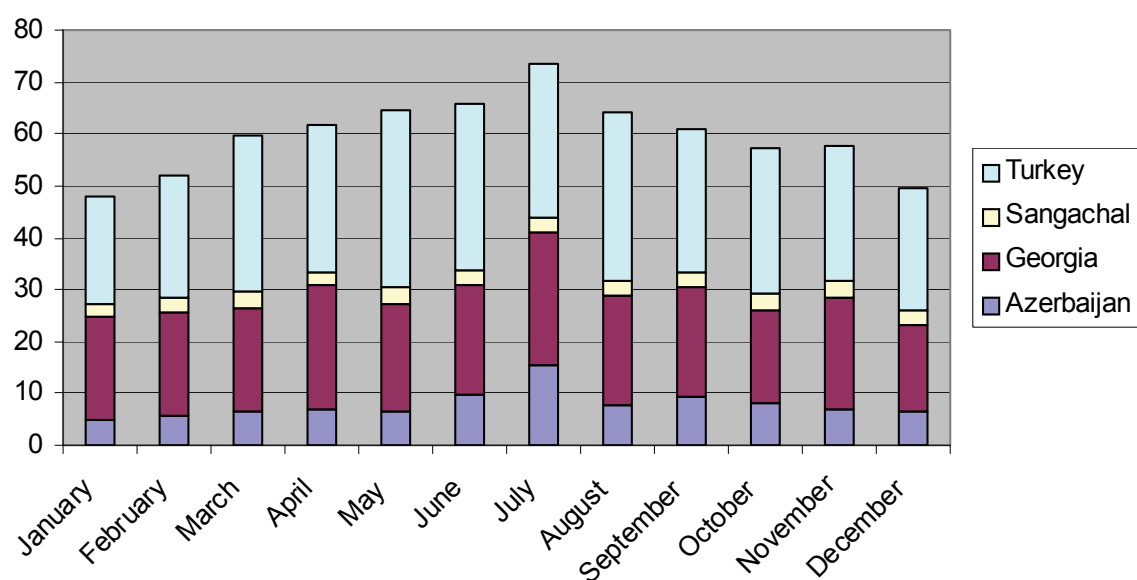
Appendix 2.3d – Waste Total Waste Volumes, 2009

All figures are in kg

	Jan 10	Feb 10	March 10	April 10	May 10	June 10	July 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	TOTAL
PT1&IPT 2													
Hazardous waste disposed offsite	0	13,519	0	0	0	0	3,878	0	0	0	0	3,569	20,966
Domestic waste disposed offsite	1,235	0	1,378	1,120	1,100	620	875	530	500	880	0	550	8,788
Waste water disposed in 3 rd party WWTP	0	30,000	0	20,000	0	10,000	20,000	20,000	10,000	20,000	10,000	10,000	150,000
Non-hazardous waste re-cycled	1,300	0	1,110	837	805	410	850	500	500	855	0	590	7,757
Non-hazardous waste re-used	440	360	1,473	884	335	795	554	965	472	660	360	165	7,463
PT 2													
Hazardous waste disposed offsite	0	9,985	0	0	0	0	3,780	0	0	0	0	68,040	81,805
Domestic waste disposed offsite	2,000	0	1,500	800	1,200	1,500	1,500	600	0	1,200	1,500	1,200	13,000
Waste water disposed in 3 rd party WWTP	10,000	10,000	10,000	20,000	10,000	0	0	30,000	20,000	0	20,000	20,000	150,000
Non-hazardous waste re-cycled	2,400	0	1,250	1,650	2,150	800	1,400	620	2,370	2,480	0	2,000	17,120
Non-hazardous waste re-used	898	1,016	940	1,075	860	766	825	800	400	615	615	560	9,370
PT 3													
Hazardous waste disposed offsite	0	21,460	0	0	0	0	2,720	0	0	0	0	3,730	27,910
Domestic waste disposed offsite	750	0	1,250	700	800	800	1,000	700	0	800	800	750	8,350
Waste water disposed in 3 rd party WWTP	10,000	20,000	20,000	10,000	18,000	30,000	0	20,000	10,000	20,000	18,000	10,000	186,000
Non-hazardous waste re-cycled	1,000	2,250	1,300	2,000	1,000	2,000	2,800	1,550	2,000	2,370	950	1,550	20,770
Non-hazardous waste re-used	700	470	750	1,670	660	1,000	300	300	1,200	300	470	200	8,020
PT 4													
Hazardous waste disposed offsite	0	6,119	0	0	0	0	3,297	0	0	0	0	1,703	11,119
Domestic waste disposed offsite	0	1,500	1,400	1,500	1,500	1,000	650	1,000	600	2,000	1,000	1,000	13,150
Waste water disposed in 3 rd party WWTP	0	33,000	35,000	0	20,000	0	40,000	0	35,000	0	20,000	0	183,000
Non-hazardous waste re-cycled	0	0	800	0	10,170	0	0	2,335	1,638	0	0	0	14,943
Non-hazardous waste re-used	1,060	1,150	1,105	905	935	1,000	1,250	1,170	1,010	760	1,040	850	12,235
IPT1													
Hazardous waste disposed offsite	0	3,500	0	0	0	0	2,003	0	0	0	0	1,770	7,273
Domestic waste disposed offsite	1,700	0	3,000	1,400	1,500	1,200	1,000	900	1,200	1,350	1,000	0	14,250
Waste water disposed in 3 rd party WWTP	336,000	196,000	70,000	70,000	182,000	42,000	98,000	42,000	28,000	28,000	42,000	28,000	1,162,000
Non-hazardous waste re-cycled	0	1,260	819	0	600	260	620	0	530	540	440	0	5,069
Non-hazardous waste re-used	2,527	1,997	1,912	1,860	1,723	1,587	1,554	1,505	1,400	913	730	1,172	18,880
CMT													
Hazardous waste disposed offsite	0	8,417	0	0	0	0	5,129	0	0	0	0	4,327	17,873
Domestic waste disposed offsite	8,980	7,640	8,357	7,801	6,687	7,276	7,861	6,881	7,312	6,843	6,331	5,853	87,822
Waste water disposed in 3 rd party WWTP	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	120,000
Non-hazardous waste re-cycled	1,422	700	400	0	0	1,560	1,120	3,735	6,240	1,300	0	0	16,477
Non-hazardous waste re-used	4,588	4,360	5,085	10,418	4,099	4,170	4,102	0	4,687	9,313	16,205	24,765	91,812

TOTAL 2010 (in tonnes)

Hazardous waste disposed offsite	166.95
Domestic waste disposed offsite	145.36
Waste water disposed in 3 rd party WWTP	1,951.00
Non-hazardous waste re-cycled	82.14
Non-hazardous waste re-used	147.78
Incineration % for solid waste disposed offsite	31
Landfill % for solid waste disposed offsite	26
Re-cycle % for solid waste disposed offsite	15
Re-use % for solid waste disposed offsite	27

APPENDIX 2.4: GHG EMISSIONS**GHG Gross Emissions in 2010 (in kilo tonnes)**

GHG	Azerbaijan	Georgia	Sangachal	Turkey	Total
January	6.44	17.46	2.85	21.04	47.79
February	5.45	16.96	2.76	19.62	44.79
March	6.64	21.81	3.26	22.11	53.82
April	6.66	15.19	2.77	24.53	49.15
May	6.85	21.11	2.73	31.31	62
June	7.16	16.49	2.46	24.40	50.51
July	8.74	17.79	2.81	30.10	59.44
August	8.06	20.36	2.82	29.36	60.6
September	7.96	17.32	2.64	30.49	58.41
October	9.14	19.44	3.18	29	60.76
November	8.46	20.58	3.03	27.77	59.84
December	6.34	15.44	3.18	24.03	48.99

APPENDIX 3: CLOSE OUT STATUS OF ACTIONS RELATED TO NON-COMPLIANCES RAISED THROUGH IEC MONITORING

Appendix 3 contains BTC Co.'s response and progress towards implementing and effectively closing out the non-compliances raised by IEC. Items that remain open are reported in the BTC E&S Reports until they have been closed. Items that have been closed do not appear in subsequent reports. In adopting this approach, the Project aims to provide the transparency and assurance that measures are being taken to ensure follow-up and close out of all actions to address the non-compliances.

APPENDIX 3A – AZERBAIJAN ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

No new NCRS for 2010

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
2.4.1	June 2009	Monitoring	Stack emissions for NOx and CO noncompliant with ESAP	I	<p>Prepare an MOC that justifies not relocating the sampling ports on the diesel generator stacks.</p> <p>Should BTC choose to modify the emissions standards with an MOC process, the IEC expects that the change would be a Level 3 and that there would be substantial documentations as to the appropriateness of the change (repeat recommendation).</p>	<p>MOC was prepared that justifies not relocating the sampling ports on diesel generator stacks. Routine stack emissions monitoring was carried out at all 3 of the PSA2 generators and at both of the IPA1 generators and all PSA2 turbines in 2009, by use of existing sampling ports as per US EPA recommended location (i.e. 2 stack diameters downstream and ½ a stack diameter up stream).</p> <p>All of the stacks were sampled for NOx, CO, NO₂, and PM10. This successfully concludes annual stack emissions monitoring required by the ESAP.</p> <p>All of the generators at PSA2 and IPA1 were found to be in full compliance with all parameters. Emissions from PSA2 turbines indicated elevated levels of NOx compared to ESAP standard and CO (no ESAP standard specified).</p> <p>As indicated in the BTC Azerbaijan ESIA standards for NOx is 125 mg/m³ and turbines are designed to meet this standard. Monitoring results of 2008 and 2009 demonstrated that ESAP standard of 75 mg/m³ is not appropriate and should be replaced with ESIA standard.</p> <p>MOC for changing ESAP standard for NOx was prepared.</p>	

APPENDIX 3B – GEORGIA ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
3.5.1	July 2010	Emissions Management	Stack emissions for NOx non-compliant with ESAP commitments	II	Stack emissions testing is ongoing, but an MOC is needed to justify NOX levels or else define an offset programme.	For the purposes of MOL Turbines NOx level justification, an MOC had been completed for agreement of an offset programme. An MOC had been approved by IEC and the offset programme is anticipated to be started in Q2 2011	December 2010
3.5.1	July 2010	Emissions Management	Non-compliant discharge of retention pond water into surface water environment	I	No comment/recommendation indicated in the audit report	A radical upgrade of the PSGs' retention ponds had been completed during 2010, which included installation of new chopper discharge pumps, concreting of the retention ponds bottoms and installation of the new pH meters, which are to be connected to the sites control rooms. As well storm water from non-hydrocarbon areas is to be deviated from retention pond and discharged directly to the outside. No sewage water is discharged to the retention ponds, but rather sent via reed beds for additional treatment prior to discharge into the nature.	December 2010

APPENDIX 3C – TURKEY ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.2.2	Aug 2010	E&S Management Organization and Resources	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.	Rec.	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.	Both vacant Environmental Supervisor positions for CMT, PTs & ROW were filled in during 2010. One big change was BIL Environmental Manager leaving the Project within the year, as of end 2010 the Environmental Manager position is vacant; covered by HSE Director of BIL. There are still vacant positions at sites as PT2 and PT3 HSE Engineers do not have back-to-backs.	OPEN
4.2.2	Aug 2010	E&S Management Organization and Resources	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.	Rec.	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.	The status as of end 2010 was explained in detail in Section 8.4.1.	OPEN
4.3.2	Aug 2010	Environmental Tracking and Performance	The implementation of the ECO-CARD system represents a step forward in achieving an effective operations management.	Rec.	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.	The joint identified actions in order to improve the system were all completed by BIL IT department. The system is being used effectively by BIL personnel.	CLOSED
4.4.2	Aug 2010	Construction Camps		Rec.	IEC recommends that sign off of closure reports for the remaining construction camps be finalized.	8 off-ROW camp site closure reports were completed and items were closed. Kars and Hanak camps closure reports review is pending. An official letter requesting information about current status and future use of Kars and Hanak construction camps is drafted and will be sent to Turnkey Contractor.	OPEN
4.4.2	Aug 2010	Construction Camps		Rec.	Concerning the camp sites reinstatement MOC, as noted in the June 2009 report, IEC requested BTC to consider the following: <ul style="list-style-type: none"> 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; 	- The MOC for facilities camp sites will be extended before end 2011. - No wells for potable water were opened for facilities camp sites' use during 2010. The only camp site WWTP located at CMT was compliant through 2010 except for December monitoring only. There is no plan for improving CMT camp site WWTP.	OPEN CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.5.4	Aug 2010	Non-Hazardous and Hazardous Waste	During the visit it was reported that the effluents from the OWS at the CWAA at CMT are not tested before discharge into the buried tank.	Rec.	<ul style="list-style-type: none"> plans and procedures for compliance to project standards with respect to operation of camp potable water supplies and WWTPs (CMT currently only in operation). <p>Although the potential environmental effects associated with a spill are considered negligible, a proper testing procedure should be established.</p>	It was decided to not to discharge OWS effluent as the discharge point is to a concrete channel. Instead the water is taken to other OWSs when the tank becoming full.	CLOSED
4.5.4	Aug 2010	Non-Hazardous and Hazardous Waste	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 CWAA's at fixed facilities.	Rec.	Now that a scope of work for the construction of permanent CWAA's at all BTC operations facilities has been developed, IEC recommends to put in fast track the process and start to replace the construction CWAA's currently used.	A prioritization for implementation was done in 2010; and PT1 CWAA was identified as having the first priority for the proposed enhancements. Although there are degradations, the existing CWAA's are all compliant with the ESAP. BIL issued a proposal and design for implementation of PT1 CWAA through MoC; the decision will be done in 2011.	OPEN
4.5.4	Aug 2010	Non-Hazardous and Hazardous Waste	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.	Rec.	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 CWAA's at fixed facilities.	The committee which was established in BIL to classify the materials has completed an inventory and communicated to BIL Procurement Department. The process is ongoing.	OPEN
4.5.7	Aug 2010	Wastewater Management		Rec.	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.	A phased implementation plan was developed by BTC Co. and BIL. Refer to Section 2.4.3 for details.	OPEN
4.5.7	Aug 2010	Wastewater Management		Rec.	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.	A phased implementation plan was developed by BTC Co. and BIL. Refer to Section 2.4.3 for details.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.6.2	Aug 2010	Pollution Prevention and Environmental Monitoring	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 fulfil MoEF requests.	Rec.	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.	Refer to Section 2.4.3 for details.	CLOSED
4.6.2	Aug 2010	Pollution Prevention and Environmental Monitoring	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.	Rec.	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.	Refer to Section 2.4.3 for details.	CLOSED
4.6.2	Aug 2010	Pollution Prevention and Environmental Monitoring	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.	Rec.	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.	Refer to Section 2.4.3 for details. The study report will be presented during IEC 2011 visit.	CLOSED
4.6.2	Aug 2010	Pollution Prevention and Environmental Monitoring	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.	Rec.	The issue is therefore considered to be still open.	Groundwater quality monitoring programme for operations was developed by BIL in 2010; however tendering process prolonged and monitoring not commenced within 2010. It is anticipated that the programme will commence in 2011 by the new monitoring contractor. Objectives of the monitoring program are as follow: 1. The operational impacts of groundwater abstraction from the wells. 2. The possible contamination by BTC facilities on groundwater. 3. Groundwater level (static and dynamic) in order to assure that the safe yield is abstracted from the aquifer.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.6.2	Aug 2010	Pollution Prevention and Environmental Monitoring		Rec.	IEC notes BTC's clarification on the issue of the treatment of slops and awaits additional information in this regard, when available.	The comments to Waste Management Plan prepared under Marpol were received from MoEF in mid 2010. The plan is being revised.	OPEN
4.7.1	Aug 2010	BVT30 Incident	IEC acknowledges that the remediation works were completed in a time effective manner.	Rec.	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.	BTC Co. carried out a further groundwater monitoring study at BVT30 in 2010. The monitoring program was performed in two rounds during rainy and dry season. The rainy season sampling was conducted in order to observe the effects of the snow melt and the heavy precipitation on the groundwater levels and the transport mechanism of any crude oil contamination potentially left behind. The dry season sampling was conducted to observe the impacts of the decline of the water levels following the dry summer months on the movement and dissolution of the potentially entrapped crude oil in the unsaturated zone. Monitoring reports were sent to BIL for them to develop their own site monitoring strategy taking the 2010 monitoring results into consideration.	CLOSED
4.8.2	Aug 2010	Erosion Control, Reinstatement and Biorestoration	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.	Rec.	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.	Patrol reports are being uploaded into GIS on a daily basis. ROW Register can be reached through querying GIS. Environmental data is also reachable through this system.	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.8.2	Aug 2010	Erosion Control, Reinstatement and Biorestoration		Rec.	<p>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.</p>	<p>Patrol teams are ready to patrol with proper vehicles and technical resources during the patrolling season. Team members were trained by BIL Pipeline Technical Management. Refreshment trainings are also provided to all teams at the beginning of patrolling season. Two patrolling teams are located in each station and each team covers app. 15 km/day on a continual basis. This means totally 30 km of a pipeline section is monitored by each station. Patrolling findings are recorded and published in the GIS system. All related departments are trained to use this system to reach the information any time they need. As soon as the new patrolling season starts, coordination meetings shall be organised to share and discuss the findings.</p>	CLOSED
4.8.2	Aug 2010	Erosion Control, Reinstatement and Biorestoration	<p>Major erosion and landslides, reinstatement and bio restoration 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.</p>	Rec.	<p>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.</p>	<p>The issue will be clarified by BTC Co. Technical Assurance Manager during IEC 2011 visit since it is under their scope.</p>	TBC DURING 2011 VISIT
4.8.2	Aug 2010	Erosion Control, Reinstatement and Biorestoration	<p>BIL/BTC is developing a regional seismicity monitoring strategy that includes the recording of earthquakes within a distance 50 km from the ROW.</p>	Rec.	<p>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).</p>	<p>The issue will be clarified by BTC Co. Technical Assurance Manager during IEC 2011 visit since it is under their scope.</p>	TBC DURING 2011 VISIT

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.8.2	Aug 2010	Erosion Control, Reinstatement and Biorestoration	IEC recognize that a coordinated ROW GIS based maintenance management system has been developed.	Rec.	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.	Environment Team is fully aware of the system. Team members were trained to use this system to reach the information any time they need.	CLOSED
4.8.4	Aug 2010	Access Roads	IEC acknowledges the successful efforts of BTC and BIL to deal with access road reinstatement and closure arising from the construction phase.	Rec.	IEC 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.	Official letter for sharing access road register was drafted and will be sent to BIL in 2011.	OPEN
4.8.4	Aug 2010	Access Roads		Rec.	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.	Access road strategy for operations study was initiated by Pipeline Technical Management Team. Currently, suitable access roads for operations are being defined by the team.	OPEN
4.9.2	Aug 2010	Ecological Management		Rec.	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.	According to the survey results and upon agreement with the related parties, bio-restoration option will be considered.	CLOSED
4.9.2	Aug 2010	Ecological Management		Rec.	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.	2010 Physical Monitoring Survey indicated that ESAs are in good condition in general and there are not any significant problems regarding erosion. No erosion observed at ESAs 1, 4, 8, 24, 35, 37.	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Closure Status
4.10.2	Aug 2010	Community Liaison		Rec.	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.	The status as of end 2010 was explained in detail in Section 8.4.1.	OPEN
4.10.2	Aug 2010	Community Liaison	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.	Rec.	IEC recommends that, based on SRAP panel's RAP Close out Audit Report and their future recommendations, BTC re-evaluate the current monitoring regime.		CLOSED
4.13.2	Aug 2010	H&S		Rec.	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.	BTC Co. and BIL teams continue to work together on H&S matters through routine HS&ER meetings, joint trainings, etc.	CLOSED
4.13.2	Aug 2010	H&S		Rec.	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.	H&S reviews of facilities accommodation areas are being conducted on a yearly basis, identified findings are recorded and actioned.	CLOSED

APPENDIX 4: STATUS OF RECOMMENDATIONS RAISED THROUGH SRAP MONITORING

Appendix 4 contains the following for Azerbaijan, Georgia and Turkey:

- Status of key recommendations raised during previous SRAP visits that were open at the time of the 2008 annual report (see Table A4.1);
- The tables provide a transparent mechanism to demonstrate follow-up and close out of all actions to address the recommendations. The table shows that all SRAP recommendations have been closed and countries reported readiness for SRAP completion audit. In accordance with the audit scope, each country has selected the contractor to do the quantitative survey. After completion of quantitative survey SRAP panel have undertaken qualitative survey as part of the completion audit in Q3 2009. The final completion report would outline the Project performance against social commitments.

Full reports from the SRAP audits are available on www.bp.com/caspian.

Table A4.1: Tracking of Recommendations from Previous Reviews

No	Date	Recommendation	Status as of end December 2010
1	April 2008	BP to compensate landowners interested by orphan land transactions against the cost of registering the remaining piece of their land (Azerbaijan only).	Ongoing
2	April 2008	SRAP Panel to re-assess effectiveness of measures to improve EPPD understanding of pipeline land use restrictions during its autumn review.	Turkey - completed
3	April 2008	Consider transferring responsibility for implementation of the Employment and Training Management Plan from the Social Team to the Human Relations Department.	Turkey- Completed
4	April 2008	BTC/BP to commission a mid-term evaluation of CIP-2 not later than Spring, 2009.	Azerbaijan - Completed Georgia - Completed.
5	April 2008	BTC to update tabulations of project affected landowners and users experiencing permanent loss of land and for each affected owner/user, to define the extent of those losses relative to his or her total landholding.	Azerbaijan - Ongoing Georgia – Completed Turkey-Completed
6	April 2008	BTC to undertake a survey of households affected by permanent loss of land in 2008 to verify whether or not each household has been able to restore its income. In the case of Georgia, a strategy should at least be in place by 2008 for doing this.	Azerbaijan - Completed Georgia – Completed Turkey - Completed
7	April 2008	BTC to consider additional livelihood restoration measures for permanent land losers if the survey above establishes that livelihoods are not adequately restored.	Azerbaijan - Completed Georgia – Completed Turkey - Completed
8	April 2008	Continued vigilance is required by BTC Co./BP in Georgia and Azerbaijan to ensure that the important role of the security of the pipeline is carried out in a manner which is appropriate and not antagonistic towards the communities.	Azerbaijan - Ongoing Georgia – Completed Turkey - Completed
9	April 2008	BTC Co. and Botaş/DSA to monitor the number of outstanding compensation cases against a stable total number of parcels and to provide evidence that the number of such is under control and decreasing (Turkey only).	Completed
10	April 2008	BIL to ensure that during the early years of Operations, Zilyet villages are carefully observed so that potential tensions within the villages can be managed (Turkey only).	Completed

No	Date	Recommendation	Status as of end December 2010
11	April 2008	Land owners/users whose names and second crop areas were assessed by BTC Co. and Botaş/DSA should be paid second crop compensation, unless third party investigation by BNB gives clear, reasoned alternative recommendations (Turkey only).	Completed
12	April 2008	BTC Co. to carry out a rigorous analysis of the current situation with the communities around the CMT including Gölovasi fishermen (incorporating stakeholder dynamics assessment of power and influence inter-play both within the fishing community and outside) and develop a strategy for a way forward (Turkey only).	Completed
13	April 2008	BTC Co. to ensure that reinstatement related issues are reflected adequately in the grievance mechanism (Turkey only).	Completed
14	April 2008	BIL to develop a formal mechanism for transfer of information to new land users on land use restrictions which would incorporate written information to be passed on to the new land user (Turkey only).	Completed
15	April 2008	BIL to complete introductory and follow-up meetings in all villages ASAP (Turkey only).	Completed
16	April 2008	BIL to review mechanisms through which they can be reached by the community (including through telephone lines) and ensure that these are effective and functioning (Turkey only).	Completed
17	April 2008	BIL to resolve current resource constraints (personnel and vehicle) in a perspective of increasing field presence and visibility (Turkey only).	Ongoing
18	April 2008	BIL to refresh villagers' awareness about avenues available to lodge grievances (Turkey only).	Completed
19	April 2008	BTC Co. with BNB as independent monitors to ensure the quality assurance of the grievance management system (Turkey only).	Ongoing
20	April 2008	BIL to place somewhere visible within the villages, the number of people employed in each village (Turkey only).	Ongoing
21	April 2008	BIL to train unskilled employees to take up semi-skilled jobs (Turkey only).	Ongoing
22	April 2008	BTC Co. and BIL to explore and identify supply chain opportunities for local firms (Turkey only).	Ongoing
23	April 2008	BTC Co. and BIL to provide targeted support and capacity building to local firms to take up supply chain opportunities (BTC Co. already doing this to a certain extent but should increase efforts) (Turkey only).	Ongoing
24	June 2007	SRAP Panel to provide a cross country framework for livelihood restoration surveys to assure a level of consistency in approach.	Ongoing
25	June 2007	BTC Co. to undertake a survey of households affected by permanent loss of land in 2008 to verify whether or not each household has been able to restore its income. In the case of Georgia, a strategy should at least be in place by 2008 for doing this.	Azerbaijan - Completed Georgia – Completed Turkey - Completed
26	June 2007	BTC Co. to consider additional livelihood restoration measures for permanent land losers if the survey above establishes that livelihoods are not adequately restored.	Completed
27	June 2007	In all 3 countries, BTC Co. to develop action plans to address/manage situations in which the landowner refuses to sign the land hand-back agreements.	Turkey- Completed Georgia – Completed
28	June 2007	In all 3 countries, BTC Co. to develop a management plan that will ensure that land acquisition in Operations phase is also carried out following World Bank Group OD 4/30 principles.	Completed

No	Date	Recommendation	Status as of end December 2010
29	June 2007	Regular checks to be made on CIP I infrastructure to ensure that they are being properly managed and maintained.	Azerbaijan – Completed Turkey-Completed Georgia – Completed
30	June 2007	BTC Co. to undertake a pragmatic social risk assessment for the Operations phase, and to design within the Operations CIP, proactive measures to address identified risks, particularly – but not only – in communities located near permanent installations such as pumping stations and terminals (Carried over from previous review)	Ongoing In Turkey each project has a special strategy for AGI affected villages
31	June 2007	BTC Co./BP to provide training to security force patrol staff in Georgia and Azerbaijan on conduct along the pipeline as well as general human rights issues.	Azerbaijan – Completed Turkey – Completed Georgia - Completed
32	September 2006	BTC to make stakeholders aware of avenues available to lodge complaints during Operations (Carried over from previous review).	Azerbaijan – Completed Georgia – Completed Turkey – Completed
33	September 2005	Annual replicate income-expenditure surveys to be superseded by a one-off income-expenditure survey to be designed and overseen by the SRAP Panel, and conducted as part of the resettlement completion audit.	Completed. Report is awaited from SRAP panel (Action on SRAP)
34	September 2005	All countries to pay particular attention to monitoring livelihood status of households affected by permanent loss of land. Annual income-expenditure surveys recommended.	Azerbaijan – Completed Georgia – Ongoing Turkey – Completed
35	September 2005	To avoid ad hoc or piecemeal development assistance, BP Business Unit to look at designing the CIP strategy within a broader framework such as national poverty strategies (to the extent that these provide clear direction), or within a context of district or sub-district development plans	Azerbaijan – Completed Georgia - Completed Turkey – Completed
36	September 2005	BTC to give consideration to adopting a labour standard based on an internationally recognized code or standard, to be applicable to all supply chain contracts with regular monitoring of compliance. (carried over from previous review).	Turkey- Ministry of Labour conducted employment standards audit in Turkey.
37	March 2005	BTC to look at avenues to incorporate small scale procurement and supply opportunities (e.g. incentives or quotas fostering village level content, re-bundling of procurement contracts) for villages in Georgia and Azerbaijan as part of its Operations Phase procurement strategy.	Ongoing Georgia - Completed
38	February 2004	BTC to continue to reinforce its anti-corruption stance with all levels of government.	Turkey- completed

Table A4.2: Recommendations (Azerbaijan and Georgia) and Initial Feedback (Turkey) of the RAP Completion Audit

These tables show the recommendations from the RAP Completion Audit. Most recommended actions have been closed out by BTC, although some are ongoing. The full status of these actions will be reported once the final audit reports have been received from the SRAP auditors. Recommendations are prioritised as follows:

High Actions that are critical to ensure compliance with commitments contained in the RAP, ESAP or World Bank OD 4.30

Medium Actions desirable to comply with social or resettlement good practice or to address actual or potential areas of social risk

Low Important actions that are less time critical

Azerbaijan

Issue	Project Principles	Performance	Recommendations	By	Priority
Employees of State Livestock Enterprises	Highlighted in the RAP as a vulnerable group so need to be given care and attention to ensure that livelihoods are protected. Risks identified in RAP are: No direct right to compensation, yet reliant on grazing land for their livelihood (in lieu of wages). At risk of being displaced where there is a prospect of compensation. Often very poor.	According to the Heads of Garadagh and Absheron districts, compensation was received by the enterprises. In the case of Garadagh district this money was transferred to a bank and used to pay salaries of the employees, allocated to a pension fund and also used to buy fodder crops. The employees of the State Livestock Enterprises were not included in the quantitative survey as many of the questions were not appropriate to their farming practices and type of impact. Nor was it possible to include them in the qualitative survey as during the time of the survey they were already in their summer pastures	a. Undertake a qualitative survey of employees of State Livestock Enterprises to verify information from the Head of the Enterprises and assess the extent to which their livelihoods have been restored. The survey should take place in winter 2010.	BP/SRAP Panel	Condition for RAP completion
Reinstatement of ROW	Reinstate to pre-project conditions or better before land hand back. Landowners/ users signing of land hand back documents does not mean that	Overall the reinstatement has been good and farmers are satisfied. There was an expectation that there would be some reduction in productivity in the first few years following reinstatement and this had been taken into account in the compensation. The land hand back documents have been signed by almost all affected farmers. From the investigation for the completion audit, there are some areas where farmers are experiencing problems, related to issues such as irrigation and stones in the fields etc.	b. BP should retain an experienced and respected local agricultural specialist to complete a review of reinstatement of Project affected arable land. The review should have three functions: (1) to identify those farms where reinstatement is incomplete or has left constraints on cultivation; (2) to assess the value of lost production or impaired yield for the period beyond 3 years after construction completion, payable to the farmer as compensation; and (3) to recommend and monitor BTC remedial measures	BP	Priority

Issue	Project Principles	Performance	Recommendations	By	Priority
	<p>It is also true to say that in some cases potential problems with reinstatement only emerge over time as the land is farmed and/ or as weather conditions reveal gaps.</p>	<p>This is necessary because as recognised by the SRAP Panel as time passes it becomes difficult to attribute problems to construction of the ROW. Equally important however is that some problems related to reinstatement only emerge with time.</p>	<p>c. A budget to be made available to carry out remedial works.</p>	BP	High
<p>Access strategy</p>	<p>While driving on the Right-of-Way was to be prohibited per ESAP principles, a "Management of Change" has made it possible to occupy a 6 meter strip within the ROW, which is dedicated to driving by EPPD for the period January to December 2008. The Addendum to the RAP accompanying this applies the same principles as for the main land acquisition carried out for the ROW</p>	<p>Land hand back has been carried out without reinstatement. Recent communication from BP states that 120 km are to be reinstated. BP now only using horse patrol. EPPD continues to use vehicle patrol. BP has developed a strategy to influence EPPD to change to horse patrol only. The time frame over which this is to be achieved is not stated. 29 sections of the Access Track have been identified as needing reinstatement. Some of these sections have been reinstated.</p>	<p>d. A comprehensive status report of the access strategy with a time-bound action plan for closure to be shared with lenders before developing a way forward. e. Check owner/user satisfaction with reinstatement of those sections of the Access Track that have been reinstated.</p>	BP	High
<p>BP Social Team and CLOs</p>	<p>Positive community engagement is essential in not only mitigating negative impacts but also ensuring protection of the pipeline.</p>	<p>BP social team and the CLOs in the field have been doing an excellent job in understanding concerns and also building a good relationship with the community.</p>	<p>f. BP Operations should maintain a strong field and Baku based social team that can continue to work closely with the community as it evolves.</p>	BP	Medium
<p>AGI affected households</p>	<p>Livelihood restoration for all project affected people</p>	<p>Quantitative survey showed that three households out of ten surveyed said that BTC had a small negative impact on their livelihoods.</p>	<p>g. Check livelihood situation of AGI households that have experienced a negative impact.</p>		Medium
<p>Chobanabdali Land Boundary Issue</p>	<p>CLEE is carrying out some work on land certificate changes which were to be issued in March 2010.</p>	<p>h. The output of this work needs to be made available to the SRAP Panel as a part of RAP completion</p>			Medium

Georgia

Issue	Project Principles	Performance	Recommendation	By	Priority
LAND					
Completion of land exit agreements	Use of land to be restored to former owners upon construction completion.	The Lands team has completed 83 percent of land use/servitude agreements. It is targeting 86 percent (all locatable owner/ users) by mid 2010.	a. Complete outstanding land access and exit agreements with all locatable landowners by mid-2010.	BTC/BP	High (by end of July 2010)
Compensation for absentees	Mechanisms for fair and transparent compensation for land acquired from private owners including for absentee owners are established. (RAP Part C, §1.8)	BTC/BP has made reasonable efforts to locate absentee owners, but it is likely that payments to about 480 un-locatable owner/users will be delayed until such owners/ users come forward sometime in the future. See § 2.1.6.	b. Establish a register of absentee owners to include (i) documentary evidence of the efforts that have been made to establish the whereabouts and make contact with each absentee; and, (ii) to define the compensation payable to them upon their signing of land use and servitude agreements. c. Block funds to cover absentee payments into an interest-bearing Georgian bank account to be held in trust until such time as claimants come forward for agreement signing.	BTC/BP	High (by end of July 2010)
Management of Operations phase land acquisition		A satisfactory RAP completion audit will signify the ending of RAP commitments as defined in the Construction ESAP. Some minor ongoing land acquisition is likely. BTC/BP Georgia has prepared a draft management plan to cover future operations phase land acquisition. This needs to be finalized and adopted.	d. Complete the "Georgia Land Acquisition and Economic Displacement Management Plan" to cover any incidental operations phase land acquisition activities and adopted as part of the BTC environmental and social management framework.	BTC/BP	High (by end of July 2010)
LIVELIHOOD RESTORATION					
Soil reinstatement/crop yield impairment	To give project affected landowners and users the opportunity to fully restore or improve their livelihoods.	Agricultural expert monitoring indicates that most pipeline corridor users are close to achieving equivalent to without-project crop yields, but some cases of impaired crop yield persist. Land handed back within the last 2 years needs to continue to be monitored.	e. Extend agricultural expert monitoring for two more years (or not less than three years after latest land hand back) and continue crop yield top-up payments as warranted by their findings.	BTC/BP	High (Contract with experts in place by end of July 2010)

Issue	Project Principles	Performance	Recommendation	By	Priority
		<p>With a few exceptions, most active farmers have resumed cropping on their project affected arable lands. Some farmers have never utilized or derived livelihood from their affected land, but may choose to do so some time in the future.</p>	<p>f. Develop clear principles for eligibility for top-up payments i.e. the payments need not be extended indefinitely for farmers who decide, say, in five years time, to start using their pipeline affected land for the first time.</p>	BTC/BP	High (by end of July 2010)
INFRASTRUCTURE REINSTATEMENT					
<p>Wear and tear on village infrastructure (especially roads/farm roads) caused by BTC/BP activities</p>	<p>Mitigate damage caused to community infrastructure.</p>	<p>BTC/BP makes regular use of some village roads & farm roads to access its facilities. Municipal governments often do not allocate budget or resources for maintenance of such roads. Their condition can be poor. BP may potentially become a target for claims to reinstate roads it uses due to perceptions that it has resources.</p>	<p>g. Identify situations where the BP use of land, village or farm roads might reasonably be linked to some obligation to contribute to maintenance - enter into a formal agreement (BP, villages, municipality) specifying the extent of such roads, type of BP use and roles and responsibilities (BP vs. village vs. municipality) for ongoing maintenance.</p>	BTC/BP	High (by end of 2010)
PUBLIC CONSULTATION AND DISCLOSURE					
<p>Effective community communications</p>	<p>Communities to be regularly consulted and kept fully informed about BTC activities.</p>	<p>There are a small number of villages where some residents cannot effectively communicate in Russian or Georgian. The CCP does not explicitly address this situation.</p>	<p>h. Revise the Community Communications Plan (CCP) to identify those villages where a translator (Armenian, Azeri) is necessary to effectively communicate with residents who do not speak Russian or Georgian.</p>	BTC/BP	High (by end of July 2010)
SOCIAL MANAGEMENT SYSTEMS AND RESOURCES					
<p>Social management team resources</p>	<p>The Community Liaison Team established for (BTC/SCP) Operations will consist of at least a Social Team Leader and no less than 3 field CLOs in each country (CLMP, § 3.2.1)</p>	<p>The Social team for BTC/SCP operations had a Social Team Leader and 2 CLOs. One of the 2 CLOs has administrative responsibilities that reduce his field presence.</p>	<p>i. Appoint a third floating CLO for BTC to cover regular CLO downtime and as a potential successor if one of the CLO incumbents moves on.</p>	BTC/BP	High (by end of July 2010)

Northern Section, Turkey

Issue	Project Principles	Performance	Recommendation	By	Priority
LAND					
Understanding of land technical issues	Clear and transparent procedures for acquiring land. Robust processes for consultation & information dissemination.	In some villages (e.g. Yeniköy) where there were complex ownership issues such as village claims over Treasury lands, or <i>zilyet</i> disputes, some landowners remain confused about the status of their land.	a. BIL CLOs to develop a short list of villages where there are ongoing landowner concerns about land status for follow up visits by the DSA or Local Cadastral Office to assist understanding.	BTC Co./ BIL	Moderate
Temporary land for camps (PT1, PT2)	Return land to owners for use to minimize impact on livelihood.	In each location where BTC Co. was renting land for camps, there were requests from landowners to know how much longer their land would be required.	b. BIL/BTC Co. to develop firm plans about the future of camp lands and provide clear information to affected landowners about when their land will be returned to them.	BTC Co./ BIL	High (by end of March 2010)
LAND REINSTATEMENT					
Reinstatement	Restore land to pre-project condition upon construction completion.	Working ahead of the final reinstatement task force, it was clear that there were a significant number of complaints that had not been captured on the task force's defects list. There is a risk that the reinstatement task force will pass by leaving a significant number of unresolved reinstatement complaints.	c. BIL/BTC Co. to make greater effort to notify project affected villages and landowners of the pending visit by the reinstatement task so that a complete defects list is developed prior to its arrival.	BTC Co./ BIL	High (ongoing)
PT1 SOGUTLUKAYA					
Disputes about landownership & entitlement for rental payments	Systematically identify landowners & determine their eligibility for compensation.	There is widespread confusion amongst project affected landowners about who are the rightful owners of the land under the PT1 temporary camp. One set of landowners received rental payments from Botaş during the construction period. Some different landowners are allegedly receiving rental payments for the same land from BTC Co., post construction. Landowners have requested a cadastral plan to clearly show ownership.	d. Either DSA to provide a cadastral plan for land under the temporary camp & to meet with affected landowners to clarify ownership; or, the General Directorate of Title Deed & Cadastre should be approached to resurvey the area (Given the level of confusion & bitterness on the ground, the latter option is preferable).	BTC Co.	High (by end of 2010)
			e. Based on the outcome of the cadastral investigation, the rightful rental payment recipients should be identified &, where necessary, paid rental due. Landowners who incorrectly received rental payments should not be unduly penalized.	BTC Co.	High (by end of 2010)

Issue	Project Principles	Performance	Recommendation	By	Priority
Loss of grazing land/ impact on Sogutlukaya's herd carrying capacity.	Restore/improve livelihoods of project affected households.	Some villagers claim that BTC/the State has alienated a large part of Sogutlukaya's prime grazing land for PT1 & related works. There is limited alternative land available for lease. This has forced them to reduce their livestock herds. Others observe that active farmers are elderly. Young people are not interested in farming & are leaving for jobs in cities. The village population is rapidly declining. Static livestock prices & rising input costs mean returns from livestock farming are marginal. These factors also account for the village's diminishing livestock herds.	f. BTC Co. to obtain information on total Sogutlukaya village land resources from the Ministry of Agriculture and Rural Affairs & have a livestock expert assess the impact of the BTC project/PT1 land-take on village land/grazing resources. If BTC land-take is found to be a significant factor in decline of village livestock herds, an appropriate mitigation program should be designed and implemented.	BTC Co.	High (by end of July 2010)
Sogutlukaya concerns about contamination of the village water supply	Villagers expressed concern that their water supply is being contaminated by run-off/recycled water from PT1. There were requests for water supply to be routed down an alternative stream bed upstream of PT1. A new water pipe crossing of the BTC line was being installed by the villagers at the time of the audit.	Villagers expressed concern that their water supply is being contaminated by run-off/recycled water from PT1. There were requests for water supply to be routed down an alternative stream bed upstream of PT1. A new water pipe crossing of the BTC line was being installed by the villagers at the time of the audit.	g. BTC Co. to monitor village concerns about water supply following completion of the new pipe installation. If warranted by continued high levels of concern, BTC Co. to instigate regular testing of water as supplied at the village to address concerns.	BTC Co.	High (by end of July 2010)
Sogutlukaya concerns about contamination of the livestock water supply	Villagers reported that cattle drinking from the water trough below PT1 sometimes made their animals sick. They were concerned	Villagers reported that cattle drinking from the water trough below PT1 sometimes made their animals sick. They were concerned	h. BTC Co. to determine whether or not there is a risk that run-off/recycled water from PT1 is discharged into the water supplied to livestock troughs.	BTC Co.	High (by end of July 2010)

Issue	Project Principles	Performance	Recommendation	By	Priority
PT2 COGENDER VILLAGE					
Flood control	Avoid/minimize physical and economic displacement.	Following the March 2008 floods, the PT2 access road has been raised & flood control measures installed for PT2. No permanent measures have been designed or constructed to ameliorate flood risks & damage to up- and downstream landowners adversely affected by the BTC works. Landowners are concerned by risks & frustrated by lack of consultation & information they have received about corrective actions being taken.	<p>i. In consultation with affected landowners, BIL/BTC Co. to complete design & construction of permanent flood control measures to protect land, crops and structures of adjacent landowners to an immunity level equivalent to the 'without project' condition.</p> <p>j. BIL/BTC Co. to pay particular attention to ensuring that owners are consulted and kept fully informed about progress throughout the design and implementation process.</p>	BIL/BTC Co.	High (by end of July 2010)
Reinstatement of off-ROW spoil disposal sites	Restoration of productive land to pre-project condition.	4 Cogender landowners (remote from the ROW) signed contracts with a BTC construction contractor to enable 50,000 m ³ of spoil to be placed on their land. Under the terms of the contract the land was to have been levelled & restored with topsoil cover. The land was not properly reinstated. It was observed to be uneven, rocky with patchy topsoil cover leading to a stunted and uneven crop.	k. BTC Co. to ensure that such off-ROW project affected lands are covered by the ROW reinstatement team. The land of the 4 Cogender landowners (& any other owners who have experienced similar problems) should be restored to a fully productive condition. To the extent possible, owners should be compensated for the impaired 2009 crop.	BTC Co.	High (by end of July 2010)
Pasture access and PT 2 road (livestock losses)	Adversely affected farmers to be compensated for any damage or losses incurred as a result of BTC project activities. Project affected farmers to be facilitated to restore their livelihoods.	PT2 road has historically been used by 100 Cogender households to access village cow pastures for 7 months of the year. 100-120 mm dia. crushed rock used to line PT2 access road side drains has led to damage to calves' legs/trotters leading to stock being put down. The village has rented alternative pasture for calves to avoid using the road (1500 L/3 months) as a temporary solution.	<p>l. BTC Co./BIL, in consultation with the Cogender farmers, to investigate permanent solution to enable farmers to resume normal access of their pasture lands.</p> <p>m. BTC Co. to investigate extent of losses (calves, cost of temporary pasture) incurred by village and develop an appropriate compensation response.</p>	BTC Co.	High (by end of July 2010)

Southern Section, Turkey

Issue	Project Principles	Performance	Recommendation	By	Priority
LAND					
Payment of compensation for land affected households, where land is in multiple ownership.	Payment of compensation before land entry.	There are still a number of outstanding cases on title deeds transfer for land in multiple ownership. Thus compensation cannot be paid. Reasons vary, in some cases title deeds cannot be transferred because not everyone is available, in others some people may be unwilling or unable to pay the administrative costs. Often the amount of compensation due is very limited and the urgency to receive the compensation varies between shareholders.	a. BIL CLOs and DSA to develop a short list of villages where there are ongoing compensation issues and to develop a time-bound strategy for resolving these.	BTC Co./ BIL	Moderate
LAND REINSTATEMENT					
Reinstatement	Restore land to pre-project condition upon construction completion.	Working ahead of the final reinstatement task force, it was clear that there were a significant number of complaints that had not been captured on the task force's defects list. There is a risk that the reinstatement task force will pass by leaving a significant number of unresolved reinstatement complaints.	b. BIL/BTC Co. to make greater effort to notify project affected villages and landowners of the pending visit by the reinstatement task so that a complete defects list is developed prior to its arrival.	BTC Co./ BIL	High (ongoing)
Productivity problems due to reinstatement	Restore land to pre-project condition upon construction completion.	There are a number of areas where productivity has reduced substantially or farmers have not been able to farm at all. Some are enquiring whether they will be compensated further for this loss.	c. BTC Co. and BIL to develop a clear strategy for productivity loss due to reinstatement problems with the use of an agricultural expert.	BTC Co./ BIL	High
Reinstatement of Village Infrastructure	Affected village infrastructure to be restored to at least pre-project level if not better.	There are still a number of outstanding grievances related to village infrastructure impacted during construction. For instance in Cigcik village where roads damaged during construction were reinstated but problems remain due to subsidence.	d. A systematic appraisal should be carried out of the status of village infrastructure impacted through review of the grievance log and CLO knowledge of the area.	BTC Co./ BIL	High

Issue	Project Principles	Performance	Recommendation	By	Priority
COMMUNITY LIAISON, GRIEVANCE MANAGEMENT					
Grievance log Management	Timely acknowledgement and corrective action to address grievances	Entries in grievance log are not always correct. For example in Akifye village a complaint checked by the SRAP Panel was found to have not only been recorded under the wrong name, but also wrongly recorded as being closed out.	e. A mechanism should be developed to check the grievance log. This could be a combination of	BTC Co./ BIL	Moderate
Information Dissemination in particular to vulnerable groups	Communities to be kept informed about project and avenues for lodging a complaint.	There are still instances of grievances from the construction phase. Some were not reported. Vulnerable groups in particular are either reluctant to make a grievance or are unclear of the avenues available. Communities also need to be aware of avenues for lodging a complaint during Operations Phase.	f. BIL CLOs to have clear systematic procedures in place for regular community engagement and information dissemination, paying particular attention to vulnerable groups	BTC Co./ BIL	Moderate
LONG TERM PIPELINE PROTECTION					
Application for third party crossing		The qualitative survey showed that there are very few farmers who know the procedure for making an application for a third party crossing.	g. BIL CLOs to develop a system of continued information refreshment and update.	BIL	Moderate
CAMP IPT1					
Rental price for land	Landowners/users to be appropriately compensated for project use of land	Affected farmers complained that the yearly rental price had been negotiated five years ago. Moreover at the time of the negotiation they had been told that the land would be rented for one year only.	h. BTC/ BIL to review rental agreements on land used for camp and at the same time to give clear information on duration of future use.	BTC Co./ BIL	High

IRIS ACUTILOBA IMPACT MITIGATION AND OFFSET IN AZERBAIJAN

Prior to construction the project embarked on a programme to minimise the disturbance of *Iris acutiloba*, a Red Data Book Plant Species found along some sections of the pipeline Right of Way (ROW) in Azerbaijan. This programme involved the translocation of individual rhizomes from within the ROW either to nearby, undisturbed areas, or to the Mardakan Arboretum, prior to replanting in the field.

A total of 32,905 rhizomes were removed from the pipeline ROW section between KP5 and KP25. Of these, 8,105 rhizomes were directly transplanted to suitable areas off the ROW while the remaining 24,800 rhizomes were replanted on the section between KP6 and KP37.5 after first being relocated to the Arboretum. Overall, about 1,000 irises survived.

Given the poor survival rates, BTC Co. was interested in other opportunities to assist conserve this species. Such an opportunity arose when, in conjunction with Garadagh Cement Plant (GCP), BTC Co. agreed to support a programme to move irises from an area that was about to be disturbed as part of GCP's activities, to an undisturbed area near the BTC ROW. During the period 22nd November and 13th December, 2010, 11,787 individuals were moved.



Early indications suggest that the survival rates associated with this program are better than those evident for those specimens relocated from the BTC ROW. This probably reflects the use of modified replanting techniques that were developed as a result of lessons learned during the earlier BTC programme.

IMPROVING WASTE MANAGEMENT IN GEORGIA

BP's operations in Georgia generate approx. 4000 m³ of waste annually. Some of this waste is hazardous. The BTC project is a major source of these wastes, generating more than 1000 m³ of general waste and 600 m³ of hazardous waste.

The challenge faced by BP and BTC Co. is to minimize the effects of these wastes. This challenge is accentuated by the fact that Georgia lacks appropriate waste management infrastructure. This led to the development of a Waste Minimisation Plan. Part of this plan saw the introduction of new techniques to reduce the amount of food wastes generated and therefore requiring disposal. As a result of macerating, dewatering and finally composting food waste, volumes reduced by about 70%. Similarly, simple measures to separate and compact wastes prior to disposal in landfills reduced the volume requirements by up to 80%.



Other waste minimization measures adopted in 2010 included the installation of a lamp crusher with a mercury keeper and a drums compactor for hazardous solid waste. With this new equipment 22 drums (4.4 m³) of fluorescent lamps were crushed, reducing the volume non-hazardous waste down to 0.06 m³.

Similarly, 988 oily solid waste drums were compacted and 386 were emptied. It was estimated that the volume of waste was reduced by 40%, which had the effect of reducing disposal cost by 35%.



The overall effect of these techniques has been to reduce BP Georgia's waste management budget by 25%.

ENHANCING CAPACITY FOR WILDLIFE RESCUE AND REHABILITATION IN TURKEY

Due to its geographic location, Turkey is an ecologically diverse country, hosting 470 species of birds, 150 species of mammals, and more than 150 species of reptiles and amphibians. Many important flyways of many bird species are also located in Turkey with more than 200 bird species either migrate through Turkey or wintering in Turkey.

Despite this ecological endowment there is currently only two very modest rescue centres and two research centres in Turkey, and these are dedicated to marine wildlife (mainly for turtles and monk seals). Rescue and research activities for terrestrial wildlife, on the other hand, is carried out by veterinarian faculties and/or zoos. More importantly there are no rehabilitation centres for either marine or terrestrial wildlife in Turkey, which makes it almost impossible to rehabilitate and then release treated animals.

The Ministry of Environment and Forestry (MoEF) is responsible for wildlife rescue and rehabilitation and the Government has highlighted the need for wildlife rehabilitation facilities in Turkey.

BTC Co. and BIL have been pursuing a separate initiative to develop a capacity to rehabilitate wildlife in the unlikely event of an oil spill. There is an expertise gap in Turkey which cannot be replaced with international expertise. The most efficient way to fill the expertise gap was deemed to be establishing the capacity through providing the veterinarians and biologists the opportunity to continuous implementation in a rehabilitation centre which will be co-funded by interested third parties. In 2010, as a result of discussions with various stakeholders, BTC Co. initiated the Terrestrial Rehabilitation Centre Project in conjunction with the KuzeyDoga Association. The project aims at establishing and operating a terrestrial wildlife rehabilitation centre and an operation system for caring for sick, injured and orphaned wildlife.

The rehabilitation centre will also act as a hub for training and as a network of resource pool by providing veterinarians and biologists an opportunity to work in a rehabilitation centre.

A protocol was also signed between the MoEF, Uludag University, İkinci Sans Association, KuzeyDoga Association and BTC Co.. The MoEF assigned a wildlife veterinarian and 4-wheel drive vehicle for rescue and rehabilitation purposes while Uludag University agreed to make available their medical facilities within their Veterinarian Faculty without any financial costs.

The project sets a good example of cooperation among private sector, state institutions, and academia, all of which will bring in their own expertise and commitment, both cash and in kind.

