BTC Project
Environmental and Social Annual Report (Operations Phase)
2011

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CASE STUDIES

ABBREVIATIONS

ADC	-	Agricultural Development Co-operative
Ag	-	Silver
AGI	-	Above Ground Installation
AGT	-	Azerbaijan-Georgia-Turkey
Al	-	Aluminium
As	-	Arsenic
AzSPU	-	Azerbaijan Strategic Performance Unit
bbl	-	Barrel
BIL	-	BOTAŞ International Limited
BNB	-	See RUDF
BOD	-	Biochemical Oxygen Demand
BOTAŞ	-	Boru Hatlari ile Petrol Taşima A.Ş. (Petroleum Pipeline Corporation, Turkey)
BTC	-	Baku-Tbilisi-Ceyhan Pipeline
BTEX	-	Benzene, Toluene, Ethyl Benzene and Xylene
BV	-	Block valve
CARE	-	CARE International (Co-operative for Assistance and Relief Everywhere, Inc.) – non-governmental humanitarian organisation
CASE	-	Center for Social and Economic Research
CBO	-	Community Based Organization
CBU	-	Cattle Breeders' Union
CC	-	Consolidation Centres
Cd	-	Cadmium
CDI	-	Community Development Initiative
CGF	-	Credit Guarantee Fund Project
CIP	-	Community Investment Programme
CMT	-	Ceyhan Marine Terminal
CO	-	Carbon Monoxide
CO_2	-	Carbon dioxide
COD	-	Chemical Oxygen Demand
Cr	-	Chromium
CSR	-	Corporate Social Responsibility
CTU	-	Crude Topping Unit
Cu	-	Copper
dB	-	Decibel
DSA	-	Designated State Authority (Turkey)
E&S	-	Environmental and Social
EBRD	-	European Bank of Reconstruction and Development
EDDF	-	Emergency Drain Down Facility
EIA	-	Environmental Impact Assessment
EIP	-	Environmental Investment Programme

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
GHG	-	Greenhouse Gas
GIS	-	Geographical Information System
H&S	-	Health and Safety
H1	-	First half of year (January – June)
Hg	-	Mercury
HGA	-	Host Government Agreement
HSE	-	Health, Safety and Environment
HSSE	-	Health, Safety, Social and Environment
HT	-	Hot-Tap (illegal tap)
IEC	-	Lenders' Independent Environmental Consultant
IFC	-	International Finance Corporation
IP	-	Implementing Partners
IPA	-	Intermediate Pigging Station, Azerbaijan
IPT	-	Intermediate Pigging Station, Turkey
IS	-	Industrial Symbiosis
ISO	-	International Standards Organisation
KP	-	Kilometre Point
KPI	-	Key Performance Indicator
MDL	-	Method Detection Limit
MENR	-	Ministry of Ecology and Natural Resources (Azerbaijan)
MOC	-	Management of Change
MoE	-	Ministry of Environment (Georgia)
MoEU	-	Ministry of Environment and Urbanization (Turkey)
MOL	-	Main Oil Line
MSME	-	Micro, small and medium enterprises
NDVI		Normalised Difference Vegetation Index
NGO	-	Non-Governmental Organisation
Ni	-	Nickel
NO_2	-	Nitrogen Dioxide
NOx	-	Nitrogen Oxides
OMS	-	Operations Management System
OSRB	-	Oil Spill Response Base
OSRP	-	Oil Spill Response Plan
OWS	-	Oily Water Separators
PAH	-	Polyaromatic hydrocarbons
Pb	-	Lead

PCR	-	Public and Community Relations
pH	-	Potential of Hydrogen
PM	-	Particulate Matter
PSA	-	Pump Station, Azerbaijan
PSG	-	Pump Station, Georgia
PT	-	Pump Station, Turkey
Q1/Q2/Q3/Q4	-	Quarter 1/Quarter 2/Quarter 3/Quarter 4
QC	-	Quality control
RAP	-	Resettlement Action Plan
RBC	-	Rotating Biological Contactor
RC&E	-	Regulatory Compliance and Environment
RDI	-	Regional Development Initiative
ROW	-	Right of Way
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
SME	-	Small and Medium Enterprises
Sn	-	Tin
SO_2	-	Sulphur Dioxide
SOx	-	Sulphur Oxides
SRAP	-	Social and Resettlement Action Plan
STP	-	Sewage Treatment Plant
SWP	-	Storm Water Pond
THC	-	Total Hydrocarbons
TPH	-	Total Petroleum Hydrocarbons
UKDER	-	Ulaş Development Association
UN	-	United Nations
USAID	-	United States Agency for International Development
USLE	-	Universal Soil Loss Equation
VOC	-	Volatile Organic Compound
VPA	-	Vegetable Producers Association
WREP	-	Western Route Export Pipeline
WWTP	-	Waste Water Treatment Plant
Zn	-	Zinc

EXECUTIVE SUMMARY

Baku-Tbilisi-Ceyhan Pipeline Company (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 Annual Environmental and Social (E&S) Report.

There were two government fines incurred against BTC in Georgia and Turkey during 2011. With this exception, there were no other fines or penalties incurred for environmental or social non-compliances, and no material environmental claims against BTC during 2011.

There was one Class I, two Class III and one Class II changes submitted to the Lenders for approval. The report provides detailed information about each class. There were no Environmental and Social Impact Assessment (ESIA) addenda submitted.

A BP Safety and Operational Risk (S&OR) audit was conducted in Midstream facilities in June 2011, and covered Azerbaijan export pipelines as well as Georgia export pipelines. Two findings (one Category 2 and one Category 3), and their corrective actions were identified.

During 2011, there were two recordable contained spills and no significant health and safety (H&S) incidents. The total amount of crude oil spilt was about 3.9 barrels (bbl). One illegal tap was identified in Turkey but no ground contamination was observed.

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

The thirteenth post-financial audit by the Lenders' Independent Environmental Consultant (IEC), acting on behalf of BTC Lenders took place in September 2011. Only one Level II non-compliance was raised, which related to a failure to build the ship waste handling facilities at Ceyhan Marine Terminal (CMT).

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 in Azerbaijan and Georgia. Offset programmes have been prepared for both countries to compensate for the NO_x exceedance and were approved by the IEC. Offset programmes will fund implementation of renewable energy and energy efficiency projects. An additional offset programme was approved by the IEC. This compensates for the failure of *Iris acutiloba* plants to survive following their replanting on the pipeline right of way (ROW).

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, the management of liquid wastes improved in 2011, including the instillation of a number of new sewage treatment units in all 3 countries.

In 2011, negotiations were held with the Export Pipelines Protection Department (EPPD) of the Republic of Azerbaijan in order to reduce usage of motor vehicles for patrolling on the ROW.

BTC continues to benefit communities and non-governmental organisations (NGO) in all 3 countries through their Community Investment Programmes (CIP) and Environmental Investment Programmes (EIP). In 2011, over US$3,000,000 was invested in these programmes.

1 INTRODUCTION

The year 2011 was the sixth year of operating the BTC pipeline.

This BTC Annual E&S Report has been prepared and structured in accordance with the requirements of Annex J of the ESAP governing construction of the BTC project and Annex H of the ESAP governing the operations phase of the BTC project. These requirements are reproduced in Appendix 1. It is the eighth Annual E&S Report post-financing and covers the calendar year 2011[1].

2 ESIAs/EIA AND PERMITTING

2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE ESIAs[2]

2.1.1 Azerbaijan

There were no material modifications made to the BTC Azerbaijan ESIA in 2011.

2.1.2 Georgia

One material modification to the BTC Georgia ESIA commenced in 2011-Q2 – decommissioning of Crude Topping Units (CTU) at Pump Station, Georgia (PSG) 1 and PSG 2. Completion of CTU decommissioning is planned for 2012-Q4.

2.1.3 Turkey

There were no material modifications made to the BTC Turkey ESIA in 2011.

2.2 SUMMARY OF MATERIAL PERMITS ISSUED IN 2011

2.2.1 Azerbaijan

There were no BTC Azerbaijan-related environmental permits issued in 2011.

2.2.2 Georgia

The Statutory Environmental Permits acquired by BTC Georgia in 2011 are as follows:

- Water discharge limits for PSG 1 and PSG 2; and
- Construction Permit for the PSG 2 accommodation camp.

2.2.3 Turkey

An integrated permitting system for environmental permits and licenses has been introduced by Government through the Regulation on Permits and Licenses[3], replacing separate permitting for discharges, air emissions, and the like. As per the Regulation, an environmental permit and license obtained for a site will cover all of the related environmental issues, such as discharges and emissions at facilities.

For the first phase of the environmental permitting process, Temporary Operations Certificate applications were made for all 7 facilities in 2011 and certificates have been successfully obtained for all that show the compliance of BTC Turkey in line with the national environmental regulations. The final phase of the environmental permitting process (issuance of the Environment Permit for all facilities) is in progress.

[1] While construction started in 2003-Q2, the financing for the project was finalised in early 2004-Q1.
[2] Note that in Turkey the formal terminology is Environmental Impact Assessment (EIA).
[3] Dated 29.04.2009; referenced 27214.

2.3 UPDATE ON STATUS OF FURTHER WORK

A summary of country-specific activities relating to ongoing studies or surveys as required under the ESIAs or permits is given below. Studies or surveys noted as completed in the 2010 Annual E&S Report are not shown.

2.3.1 Azerbaijan

The only additional ESIA study and/or survey, as specified in the operations ESAP, relates to a Groundwater Monitoring programme.

Study/Survey: Groundwater Monitoring programme	**Expected Timing:** 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); 2010 (p 3).	
Groundwater monitoring was carried out according to the ESAP requirements in May 2011 and November 2011. 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 ROW prior to construction. This requirement was fulfilled, and monitoring of the success of the relocation programme continued during 2011. An Offset Programme will be developed to compensate for Irises that did not survive. In addition, Irises from the Garadagh Cement Plant, which would otherwise have been destroyed due to a development project, were translocated to the ROW between 22 November 2010 and 13 December 2010. In total, 11,787 Irises were planted at Kilometre Point (KP) 7, KP 11.8, KP 24.1, KP 25 and KP 26. Annual monitoring of these Irises will be conducted for 5 years to verify survival rates.

The Cultural Heritage – Archaeology Phase V (Analysis and Reporting) programme was ongoing during 2011.

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

Study/Survey: *Iris acutiloba* Monitoring programme	**Expected Timing:** 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); 2010 (p3).	
Prior to construction of the BTC pipeline, approximately 32,900 individual plants, recorded as Red Data Book species, were removed from the ROW. In total, 8,105 individuals were replanted off-the ROW and 24,800 were temporarily planted in Mardakan Arboretum for further translocation back to their original habitat. In 2006, the rhizomes of the temporarily planted *Iris acutiloba* plants were translocated to their natural habitat on the ROW mainly between KP 6 and KP 28. Monitoring and evaluation began in 2008 and continued in 2011. Results of May 2011 monitoring showed that only 147 Irises were found along the ROW which equates to 0.6% of the total number of translocated Irises (24,000 items) from Mardakan in 2006. Percentages recorded in previous years were 7.7% in 2008, 4.2% in 2009 and 2.8% in 2010. Trend analysis shows that the survival rate of the Irises has been decreasing gradually since the shock reduction in 2008. The Iris reduction rate on- and off-ROW in 2011 was greater than in 2010. The number of Irises on both sites has significantly decreased. BTC acknowledges that its original objective of re-establishing a minimum of 75% of the original population within the areas designated for translocation was not met. Other options to compensate for the Irises that have not survived have been reviewed and discussed with the IEC auditors resulting in initiation of an offset program to compensate for these individual species.	
Completion Status: Ongoing	

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

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); 2010 (p4).

The BTC/SCP (South Caucasus Pipeline) Cultural Heritage – Archaeology Phase V (Analysis and Reporting) programme was implemented by the Smithsonian Institution. This 3-year programme started in 2008 and includes both capacity building 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 2011:

- The book, *Past and Future Heritage in the Pipelines Corridor* (December 2010) was distributed in Azerbaijan and Georgia. Some copies were also sent to stakeholders in the UK, US and Turkey. The book describes the cultural heritage programme and artefacts discovered along the BTC/SCP route. It is available in English-Azerbaijani and English-Georgian languages;
- The Smithsonian Institution submitted the last item of the programme – Gobustan rock analyses; and
- The permanent archaeological exhibition at the Caspian Energy Centre, opened in 2009, and continues to attract visitors' interest. In 2011, the total number of the visitors was 4,360. The exhibition has 10 artefacts of the Bronze Age on display. The artefacts were kindly lent by the Azerbaijan Institute of Archaeology and Ethnography to the Caspian Energy Centre.

Completion Status: Completed

2.3.2 Georgia

The following additional ESIA studies and surveys, as specified in the Operations ESAP, were conducted in Georgia during 2011.

Study/Survey:	**Expected Timing:** 2010-12
Kodiana special projects and other legacy projects	Monitoring: Ongoing

Ref: 2006-H1 (p3-2); 2007 (p6); 2008 (p5); 2009 (p4); 2010 (p4).

Biorestoration of the Kodiana access road at KP 181-183 was followed by compensation planting in accordance with the planned maintenance schedule.

Landscaping commitments associated with the Emergency Drain Down Facility (EDDF) and Secondary Containment Facilities (SCF) were implemented. A biorestoration and landscaping monitoring scope was compiled on completion of planting activities. A survivability rate of planted material is subject to corresponding annual monitoring surveys.

Reinstatement, reimbursement and official hand-over of the Akhaltsikhe camp to landowners is 100% complete.

Construction of the SCP area 80-person permanent accommodation camp is completed.

Construction of the Wild Life Rehabilitation Centre (WLRC) at PSG 1 was completed in 2011-Q3. Setting up of the laydown area for PSG 2 accommodation addition was completed in 2011-Q4. Construction of the actual addition is planned to be completed in 2013.

Completion Status: Ongoing

2.3.3 Turkey

For Turkey, the following additional ESIA studies and surveys, as specified in the Operations ESAP, were conducted in 2011.

Study/Survey: Landscape plans and monitoring of facilities	**Expected Timing:** Construction and operations
Ref: 2005-Q1 (p3-4); 2005-Q2 (p3-4); 2005-Q3 (p3-4); 2005-Q4 (p3-4); 2006 (p6); 2007 (p7); 2008 (p16); 2009 (p4); 2010 (p5).	

The status of landscaping that was implemented at all facilities by BTC and handed over to BOTAŞ International Limited (BIL) in late 2008 was monitored during ad-hoc site visits and annual compliance audits. In parallel, BIL's ROW monitoring and maintenance site teams continued to monitor the condition of landscaping and take necessary action when required.

Completion Status: Monitoring ongoing

Study/Survey: Marine turtle survey	**Expected Timing:** 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 (p7-8); 2007 (p7); 2008 (p16); 2009 (p5); 2010 (p5).	

The annual marine turtle survey was conducted from June to October 2011. As in previous years, the survey was carried out at Sugozu, Akkum, Botas and Hollanda beaches, which are in the vicinity of the CMT jetty.

Nests:

In 2011, a total of 145 *Chelonia mydas* (Green Turtle) nests and 3 *Caretta caretta* (Loggerhead Turtle) nests were observed in the survey area.

A summary of the number of nests observed during 2011 compared with previous years is as follows:

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Green Turtle	42	44	213	29	198	57	160	163	104	145
Loggerhead Turtle	18	3	3	7	0	1	1	4	1	3

As shown in the table above, there are inter-annual fluctuations in the nest numbers of the Green Turtle and Loggerhead Turtle. The nesting activity within whole Mediterranean shows similar fluctuations from year to year, as it is dependent on various natural factors such as water temperature. Longer term monitoring when evaluated together with data from other parts of Mediterranean will provide a further basis for interpreting the fluctuations.

Hatchlings:

In 2011, over 8,500 hatchlings were estimated to have reached the sea, as determined from the basis of direct observations of hatchling, nests and track counts.

The success of the hatchlings, estimated on the above basis, did not indicate a deviation from the overall success rate trend of the 2007-2011. Generally, neither any significant mortality of the hatchlings (due to scorching effect of the sun) nor any significant disorientation was observed along the surveyed beaches.

A summary of the estimated hatchling successes during 2011, compared to previous years, is as follows:

Beaches	**2007 (%)**	**2008 (%)**	**2009 (%)**	**2010 (%)**	**2011 (%)**
Sugozu	80.9	87.2	76.5	86.6	92.1
Akkum	84.5	86.6	77.1	87.9	82.8
Botas	44.4	60.7	83.9	91.2	72.7
Hollanda	44.4	77.0	80.5	96.0	68.5
Overall	**82.3**	**82.9**	**77.8**	**89.1**	**84.7**

Completion Status: Ongoing

2.4 OTHER STUDIES

2.4.1 Azerbaijan

Study/Survey:	**Expected Timing:**
Vegetation cover: April 2011	Operations

For 2011, biorestoration monitoring includes 5 years of percentage cover values, and 3 years of species-diversity data, collected from 55 transects located along the length of the ROW. The results of the 5 years of the biorestoration monitoring programme can be summarised as follows:

In 2011, there were 2 changes to the monitoring process:

- Monitoring was discontinued at transects AZ 41 and AZ 42, due to installation of a permanent access track; and
- Monitoring at transects AZ 47, AZ 49 and AZ 50 has been discontinued due to cultivation of the soil for agricultural use.

The majority of transects show an increasing trend in vegetation cover over the 5-year sampling period (89% increasing, 7% stable and 4% decreasing). This is an improvement on the figures from 2010, which showed an 84% increasing trend in vegetation cover. It should also be noted that the 'decreasing' transects include 2 transects that have been discontinued because they have been cultivated.

Despite the increasing trend in vegetation cover, the monitoring results also show the transects where vegetation cover is either slow or is less than 70% of the off-ROW cover. These transects fall into three main zones: Sangachal desert (KP 0 to KP 9); Gobustan semi-desert (KP 23 to KP 79); and Kurdamir lowlands (KP 143 to KP 208).

These zones are areas where the environmental conditions are most adverse for establishment and growth of vegetation. In the case of the Sangachal desert, the soils are prone to compaction and the climate is very arid, with little precipitation and high evaporation, exacerbated by high wind speeds.

In the Gobustan semi-desert zone the climate is semi-arid and conditions are slightly more favourable to vegetation growth in comparison with the Sangachal desert. The natural vegetation cover here is naturally quite high, and the on-ROW vegetation cover is much higher than in the Sangachal desert, however, as predicted, this zone still lags behind natural cover levels. In the Kurdamir lowlands, the soils are very prone to salinisation, and these transects have a salt crust on the soil, which is likely to be hindering vegetation recovery.

Although some habitats have recovered quickly in terms of vegetation cover, this does not necessarily correspond with recovery of species diversity, meaning that the species composition of the vegetation cover on the ROW is different from that in the adjacent undisturbed vegetation. Again, this is consistent with plant succession and was predicted in the Biorestoration Management Plan.

The majority of transects (89%) show an increasing trend in vegetation cover over the 5 years of sampling, and over half (51%) have achieved natural levels of vegetation cover. Recovery of species diversity on the ROW is occurring, although the rate of change is generally very slow. By combining the rates of change in vegetation cover and species commonality, we can see that some habitats are slow to recover from disturbance, while others have recovered quickly.

Biorestoration and erosion control monitoring will be continued during 2012.

Completion Status: Ongoing

Study/Survey:	Expected Timing:
BTC/SCP biorestoration (seeding)	Monitoring: Ongoing

The overall objectives of the biorestoration process, as defined in the Azerbaijan reinstatement specifications, are to:

- Establish sufficient vegetation cover to reduce the erosion rate to meet the performance requirement of Erosion Class 3 or better through restoration of the local plant community; and
- Reinstate the variety and distribution pattern of the original plant species with the long-term objective of reinstating the local ecology.

Monitoring, which consists of 3 stages (sample site selection, field measurement and data analysis), is required to generate tangible evidence to demonstrate whether BTC is meeting relevant biorestoration commitments.

The biorestoration strategy was based on the need to create a stable landform in order that natural regeneration would occur without the need for further intervention. In special circumstances it was recognised that intervention would be necessary (e.g., Ecologically Sensitive Areas (ESA) and areas prone to erosion). In these instances, ephemeral and perennial provenance seeds have been collected and broadcasted on the ROW in selected areas

A total of 191kg of *Salsola nodulsa* (Dane-wort) and 122.5kg of *Artemisia lerchiana* (Wormwood) perennial species seeds, which were collected and stored in 2010, were sown during 2011. The areas included those with erodible and poor vegetation cover, such as KP 11 and KP 309.

The methodology for 2012 seed sowing will be different to previous years. A trial project will be implemented whereby collected seeds will be sown directly into a nursery bed, established in accordance with native habitat properties; and then translocating the seedlings to the area identified for biorestoration within the ROW between September and October 2012.

Completion Status: Ongoing

Study/Survey:	Expected Timing:
Landscape monitoring of the Facilities Construction and Installation (FCI) ROW	Monitoring: Ongoing

BTC has implemented a substantial reinstatement and biorestoration programme, which aims to return all forest belts, river crossings, hilly and flat lands, natural wetlands, desert, and semi-desert landscapes along the pipeline corridor to pre-construction conditions. To demonstrate progress in landscape restoration 90 vantage points were selected in the Azerbaijan section of the pipeline. The vantage points were selected due to their importance from the following points of view: rivers and stream crossings, slopes and gullies liable to erosion, areas with a high visibility to communities, borrow pits, as well as permanent Above Ground Installations (AGIs), including AGIs and block valves (BVs)/control valves and road crossings within environmentally sensitive areas.

Generally there has been a positive improvement on all selected landscape vantage points in comparison to previous years. Biorestoration of disturbed areas is equal to or greater than adjacent undisturbed areas. No significant reportable erosion signs were detected during monitoring.

During the monitoring, which conducted in September 2011, monitoring activities at 13 vantage points were not provided. These vantage points were the former camp and pipe yards, and agricultural lands where landowners had started cultivating land plots and constructing village crossings. As a result of these activities they have undergone significant landuse change and are no longer suitable as monitoring points. Monitoring pro-formas and comparison folders were updated for 2011.

Landscape monitoring will be continued along the BTC/SCP ROW for next year. The e-MOC has been raised concerning to annual monitoring of ROW (KP 0 – KP 124) and 3 years' monitoring of KP 124 – KP 442 of ROW.

Completion Status: Ongoing

Study/Survey:	Expected Timing:
BTC/SCP running track reinstatement	Monitoring: Ongoing

BTC has implemented a substantial reinstatement programme, which aims to return the pipeline landscape to pre-construction conditions where possible. There is also a formal requirement in the BTC ESAP Ecological Management Plan to establish a photo-landscape monitoring programme.

Since these commitments were made, a Government of Azerbaijan Decree (2003) resulted in the formation of the EPPD. The EPPD provides security for the Western Route Export Pipeline (WREP), BTC and SCP pipelines in Azerbaijan.

As a result, EPPD has patrolled the BTC and SCP ROW by vehicle on a 24-hour basis since 2005. 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 biorestoration 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, it was agreed that, at several locations, EPPD would use alternative roads for routine patrols, thus facilitating BTC's efforts to reinstate these locations.

The results of monitoring showed that during 2011, efforts to reinstate these ROW patrol roads were unsuccessful. It was therefore decided to stop monitoring these sections of the ROW. However, following a recommendation from the Lenders, running track reinstatement activities have continued.

As a result, further meetings were held with the EPPD, the Ministry of National Security, Ministry of Internal Affairs, coordinators of Export Pipelines and BP Security and ROW team representatives to discuss using alternative methods of security monitoring (horse patrolling, application of electronic devices) and the acceptability of alternative roads for security suggested by Environmental Team (in accordance with EPPD regional branch level). Activities in relation to this programme will continue during 2012.

Completion Status: Ongoing

2.4.2 Georgia

There were 10 other studies/surveys carried out in Georgia in 2011.

Study/Survey:	Expected Timing:
Biodiversity monitoring for off-FCI-ROW	2011 to 2015

BTC committed to a 5-year programme for biodiversity monitoring for off-FCI-ROW locations based on the initial agreement with the Ministry of Environment (MoE), Georgia. The commitment was to analyze data collected over the 2004 to 2009 time period for broad trends.

BTC has since proposed a revised/reduced scope for the next 5 years of the off-FCI-ROW monitoring and this proposal has been submitted to the Government of Georgia for review, comments and final agreement. A key objective of the revised scope is to ensure that the two data sets are complimentary and thereby allowing meaningful comparison, especially in terms of trends.

In 2011, BTC recommenced the monitoring program, using the revised scope, consisting of faunal (including ichthyofauna) and floral (including habitats) components to identify any potential impact caused by pipeline construction and operation activities. The programme was launched in spring 2011. The 7-year-long faunal species monitoring programme has shown the spatial variability of population dynamics of *Pelobates syriacus* (Spadefoot Toad), *Crex crex* (Corncrakes), *Mesocricetus brandti* (Brandt's Hamster), *Tetrao mlokosiewiczi* (Black Grouse) and *Lutra lutra* (common Otter), which suggests that the distribution range of the listed species is patchy. This makes the species more vulnerable to impacts, both anthropogenic and natural, increasing the need to continue monitoring surveys to further define trends in species numbers and diversity, and to identify variables accounting for the trends. In terms of the renewed biodiversity monitoring programme, an ichthyological survey

was considered to be undertaken once in 2 years at 22 major river crossings within the BTC/SCP ROW for 3 major components, such as in-stream water quality, macro-invertebrate communities and habitat. As fish generally have long life histories and integrate pollution effects over longer time periods and large spatial scales, physical habitat, aquatic macro-invertebrate assemblage and periphyton was assessed as a major indicative supplementary eco-factor supporting qualitative assessment of riverine aquatic habitats.

Monitoring will continue from Spring 2012.

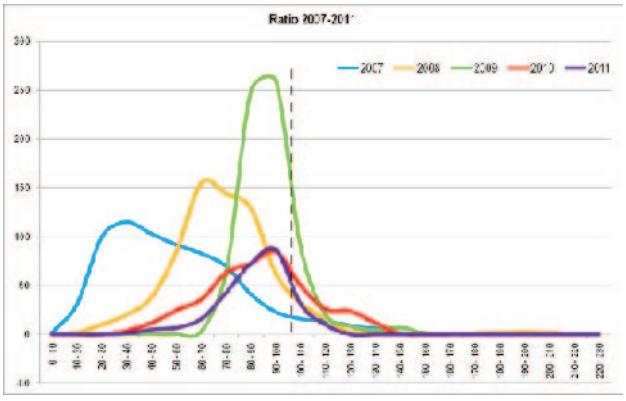
Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Vegetation cover recovery and potential erosion risk assessment along with species diversity evaluation within BTC and SCP ROW 2011	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 data collected over 4 years of observation (2007 to 2011), are summarized below.

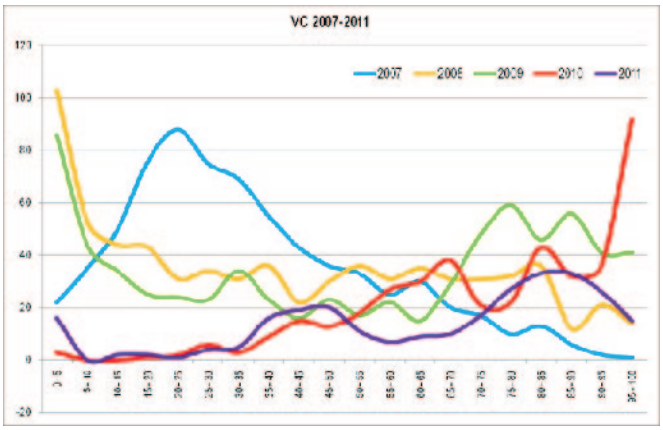
All habitats[4] (based on 100m long ROW sections):

- As of 2011, vegetation cover exceeded 70% for 89% of the ROW sections. The vegetation cover ratio on the ROW was greater than adjacent off ROW cover for 15% of the 100m sections. Vegetation cover decreased on 10% of the 100m ROW sections between 2007 and 2011.
- In 2007, 8.5ha of disturbed areas (representing all habitats) had vegetation cover in the range 0% to 10%. In 2008, vegetation cover of 0% to 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 the total area of the ROW sections with vegetation cover below 70% comprised 108ha. In 2011, no areas of vegetation cover less than 10% were observed. Areas with vegetation cover of 10% to 70% comprised 44.3ha and those areas with 70% to 100% vegetation cover was observed in 81.9ha.



Normalised Difference Vegetation Index (NDVI) Ratio for BTC/SCP in and off-ROW Georgia for 2007-2011: % of coverage against frequency for 100m ROW sections

[4] Excluding agricultural land.

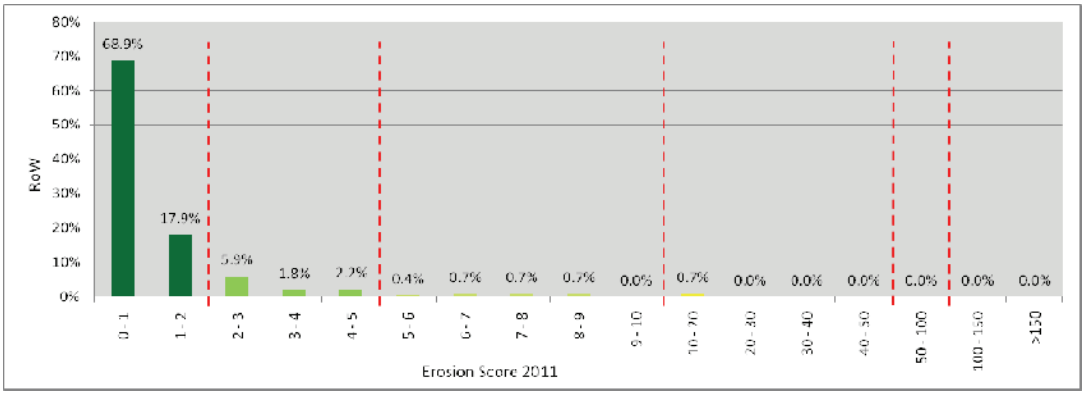


Vegetation Cover for BTC/SCP ROW Georgia for 2007-2011:
% of coverage against percentage of entire area of ROW

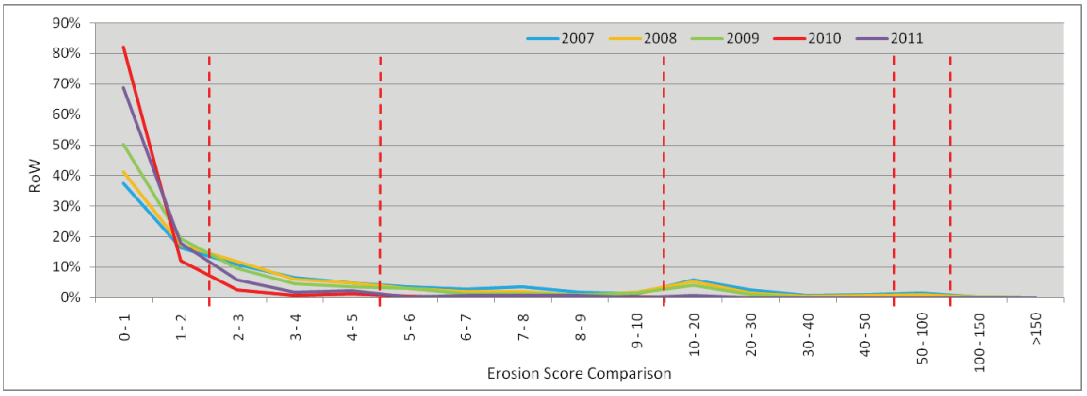
Erosion potential assessment using Geographical Information System (GIS)-based Universal Soil Loss Equation

An erosion potential assessment of year 2011 was conducted based on the methodology detailed in the report *Vegetation Cover Recovery Trend & Potential Erosion Performance Analyses by Satellite Imagery* produced by BTC Company.

Desktop Universal Soil Loss Equation (USLE) evaluations show that, in 2011, 99.3% of the ROW sections met the biorestoration target achieving Erosion Class 3 or better along the ROW. Areas assessed as being Erosion Class 4 or greater comprise only 0.7% of the 100m ROW sections, for which the NDVI was acquired in 2011.



USLE 2011 – percentage of entire area of coverage of ROW
vs. erosion rate per erosion classes bar chart



USLE comparison 2007-2011 – percentage of entire area of coverage of ROW
vs. erosion rate per erosion classes bar chart

Species diversity evaluation

The species diversity data collected during the course of the 2011 field surveys was analysed for their communality index under the categories of habitat, elevation, erosion, slope and aspect.

The lowest species commonality was calculated for the scrub and mountain grassland and xeric grassland combined with south-eastern sub-Mediterranean deciduous thickets (shibljak) and dwarf cushion-heaths. Low nutrient availability in soil, lack of moisture and disturbance by grazing and trampling were the major factors affecting commonality between on- and off-ROW sections.

The highest values of commonality were calculated for the xeric grassland combined with south-eastern sub-Mediterranean deciduous thickets (shibljak), plantation (pine) woodland and montane grassland/pastures (84%, 78% and 77% respectively comparing to measurements obtained in 2009 of 58%, 54% and 53% respectively).

The highest values of commonality were calculated for the montane grassland/pastures and xeric grassland (63% and 57% respectively comparing to those measured in 2009 at 75% and 72% respectively).

The next round of vegetation cover and erosion potential assessment monitoring is scheduled to commence in April 2012, whereas the next round of the species diversity rates assessment is to take place in 2016, i.e. the tenth year of monitoring.

Study/Survey:	**Expected Timing:**
Bat mitigation pilot project	2008 to 2011

The artificial bat shelter monitoring involved 2 activities in 2011: monitoring colonisation of artificial shelters by bats, and shelter clean-up.

The third year monitoring survey showed that 10 artificial shelters have been colonized by bats. In summary, 25% of the shelters were colonized in 2011, which is in line with the results of similar projects around the world. It should be noted that this is the first time that shelter type 1FF Flat Box (which is commonly being used as a nursery roost equipped by a narrow crevice-like internal space to attract Pipistrelle and long-eared bats) was found inhabited by bats and yet another species, the common *Plecotus auritus* (Long-eared Bat) (in addition to the common Pipistrelle) had also colonized the shelter. Unfortunately, 5 more shelters (in addition to 5 destroyed previously) were found destroyed. The remaining 10 shelters were inhabited by wasps, butterflies, birds, bees, spiders, forest mice, dormouse, and other similar species.

Completion Status: Completed

Study/Survey:	**Expected Timing:**
Rare floral species management programme	Operations

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 the case of 8 species out of 11. Similar to the results obtained in 2010, no individuals of *Gentiana angulosa* (Gentian) (2 populations) and *Orchis coriophora* (Bug Orchid) were recorded on the reintroduction sites. Considerable reduction in abundance has been recorded for *Iorhiza urvilleana* (Frog Orchid) (populations at KP 96) and *Dactylorhiza euxina* (Marsh Orchid).

At present, a separate project involving propagation of *Gentiana angulosa* (Gentian) and *Fritillaria lutea* (Fritillary) from seeds has commenced, as outlined below.

Surveys to assess survivability rates will continue in 2012.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Propagation of Gentian and Fritillary by seeds and reintroduction to original habitat	2010 to 2012

Progress:

The monitoring surveys of rare species, conducted in 2009, identified the absence of Gentian 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.

BTC Georgia has implemented a rare species restoration programme aimed at propagation and subsequent reintroduction into original habitats of Gentian and Fritillary.

In early March 2011, the seeds of the target plants collected in the wild were sown in prepared soil mixture in a greenhouse. After the first leaves emerged, the seedlings were moved outdoors on the first decade of May 2011. The seedlings showed a good growth rate and have been carefully maintained through regular weeding and watering throughout the dry summer months. The seedlings/juvenile plants will be ready for reintroduction in their native habitats in late spring 2012.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Control of invasive *Ambrosia Artemisifolia* (Common Ragweed) and survey of alien/ invasive species along the BTC/SCP ROW	Operations

Mechanical control measures of *Ambrosia artemisifolia* (Common Ragweed) were developed for short-term interventions by specifically investigating the effect of timing of the intervention on the performance of both Common Ragweed and its accompanying vegetation. In 2011, cutting using a brush cutter at the time of flowering (August 2011) was performed at 2 different sites in Tetritskaro and Akhaltsikhe districts, differing in both climatic conditions (with the former milder and the latter prone to more extreme conditions) and land use history (with the former a reinstated site and the latter a former arable site). Results from the 2 sites clearly showed that cutting at the time of Common Ragweed flowering in mid-August significantly reduced cover (94%/75%), height (85%/72%) and phenology (80%/40%) of Common Ragweed when assessed 6 weeks after the treatment application. Nevertheless, the few surviving *Ambrosia artemisifolia* plants were still able to partially compensate by re-growing within 1 month and produce male flowers.

The 2011 results clearly confirm the findings of the late cutting regime applied in 2010. Comparison of the 2010/2011 data also indicates a continued succession process, especially at the restoration site towards a more competitive grass cover, which is expected to increasingly suppress *Ambrosia artemisifolia*. A walkover survey of the BTC/SCP ROW conducted in 2011 revealed the presence of populations of 8 alien species on the ROW. Out of 8 species, 2 (*Ambrosia artemisifolia* and *Robinia pseudoacacia* (Black Locust)) are invasive taxa. The majority of alien species are naturalised annuals. A 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.

It is proposed to re-visit the sites in spring and summer 2012 to identify trends in the populations of invasive species, to assess longer-term effects of these treatments, and to repeat the cutting treatment.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Landscaping/biorestoration projects at PSG 1, PSG 2, SCF and EDDF sites and along the Kodiana access road	Operations

The 2009 and 2010 landscaping and biorestoration project outcomes and mitigation activities included aftercare activities at selected locations adjacent to the BTC pipeline at PSG 1, PSG 2, SCF and EDDF sites (Tskhratskaro SCF site (Andeziti); Kumiska 1 and 2; Oshora 1 and 2; EDDF temporary site; and EDDF staging area 1) and along the Kodiana access road. 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. This includes regular maintenance applied to the plantation during appropriate seasons. Monthly inspections focused on evaluation of respective seasonal and eco-sensitive conditions of planted stocks led to consequent applications of the required activities, such as soil cultivation, mowing (weed control), watering, pest and disease control and maturing (aiming to achieve minimum mortality of saplings). In October 2011, 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:	**Expected Timing:**
Assessment of tree and shrub survival planted at PSG 1, PSG 2, SCF and EDDF sites and along the Kodiana access road	Operations

A field assessment on survival of trees and shrubs planted at PSG 1, PSG 2, SCF and EDDF sites and along the Kodiana access road was conducted in October 2011. Relatively high mortality rates of planted trees and shrubs were recorded at PSG 1, PSG 2, EEDF temporary site and Oshora 2. At other sites, the survival rate of plants was rather high. Recommendations were made to carry out additional planting at sites with higher mortality rates, in order to facilitate establishment of woody vegetation cover.

Completion Status: Ongoing

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

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

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

Completion Status: Ongoing

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

In 2011, monitoring of the recovery of landscape features was conducted along BTC/SCP ROW with a 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, and the like in order to capture changes over time. Determined vantage points were later uploaded into a GIS device representing ROW restoration reliable track record.

The 2011 photo survey was analysed for trends and results have resulted in the monitoring frequency being reduced to once every 3 years, and targeted on those vantage points, which have shown considerably lower levels of reinstatement success.

Completion Status: Ongoing

2.4.3 Turkey

Eight other studies were carried out during 2011 in Turkey.

Study/Survey:	Expected Timing:
Ecological monitoring (species diversity and vegetation cover)	Operations

Ref: 2006 (p8), 2007 (p10), 2010 (p11).

The 2011 ecological site survey data was evaluated as part of a long term evaluation study carried out by BTC Co. for the 2006-2011. The study covered comparative analysis of the data from 2006, 2007, 2009, 2010 and 2011 surveys carried out in 18 habitats along the Turkey section of the BTC pipeline. The main purpose of the study was to evaluate the overall performance of species diversity and vegetation cover along the pipeline in Turkey and propose mitigation measures if there were any unexpected negative trends regarding species diversity or vegetation cover.

Monitoring consists of two components: vegetation cover and species diversity. The survey is required to be undertaken annually for vegetation cover monitoring and bi-annually for species diversity (which is carried out jointly with the annual vegetation cover monitoring). The 2011 ecological monitoring study consisted of both species diversity and vegetation cover monitoring components and was conducted between June and July 2011.Outcomes of the study are given below:

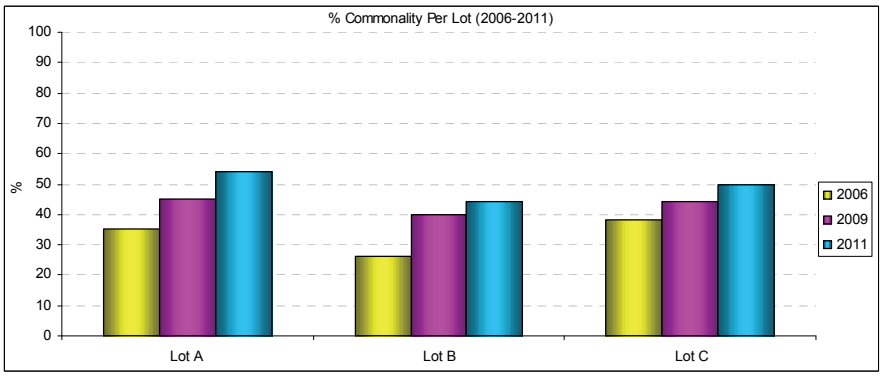
The site survey results, overall, indicate a sustained positive trend in both floristic commonality rates and vegetation cover progression, which is in line with the expectations. On the other hand, there are variations in the success levels of Lot A, Lot B and Lot C habitats, all of which have varying levels of sensitivity and the climate in each area differs slightly from one another. At some locations, little change was observed in floristic commonality and vegetation cover since the last monitoring event. The main reasons for this were natural hazards, such as weather conditions, local landslides, and anthropogenic factors such as animal grazing which was of minor scale.

The relation between the natural flora of the habitats and the flora on-ROW, and the relation between the vegetation cover on-ROW and that of the natural vegetation along the pipeline have been evaluated by taking account of the survey years, commonalities across the species diversity and special conditions and sensitivity of habitats.

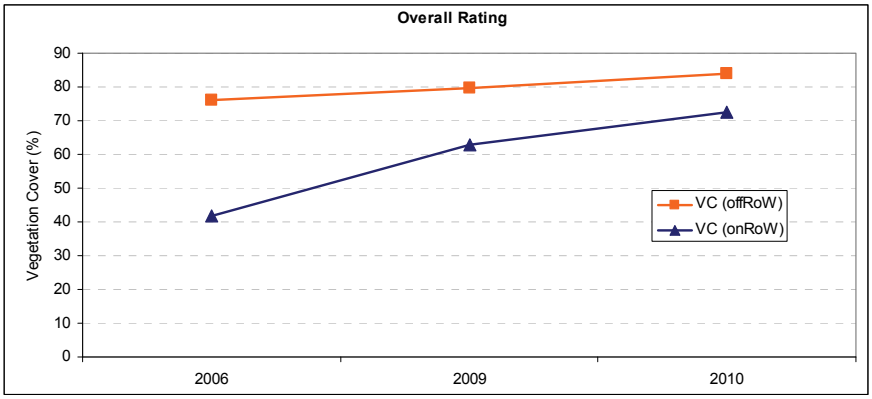
The impact of factors on success rate for vegetation cover and species diversity such as elevation, erosion class, slope and aspect on the floristic commonality has been evaluated in order to determine whether parameters other than the habitat characteristics affect the success of the biorestoration activities. As a result, it was deemed elevation and aspect do not have a significant effect on the floristic commonality whereas the floristic commonality rate decreases as the erosion class increases. Hence, there is a significant association between erosion class and floristic commonality. In addition, there is also a significant correlation between aspect and floristic commonality: the floristic commonality has been found to be higher in flat habitats than all other aspects. The on-ROW vegetation cover for all habitats has increased from around 40% in 2006 to approximately 60% in 2009 and up to 70% in 2011. These results are also consistent with the expected levels.

Results

Species Diversity (per lot):



Vegetation Cover:



Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Marine sediment and ecology survey	Operations

Ref: 2006 (p9-10); 2007 (p11); 2008 (p21); 2009 (p22); 2010 (p11).

The marine sediment and ecology survey around CMT was conducted in July 2011 in order to monitor the physico-chemical state sediment and sea water as well as the biological state of marine life. Highlights of the outcomes are given below:

- Measured trace metal concentrations in sediments in 2011 are close to 2008 levels and lower than those of 2009 and 2010;
- Total Petroleum Hydrocarbons (TPH) (C5 to C10 and C10 to C28 components) concentrations measured in sediment samples collected around the BTC jetty area are lower than the guideline values. indicating no significant present contamination in terms of TPH values in the area;
- No significant differences between 2001, 2005, 2007, 2009 and 2011 were observed in physical properties of water. Physical properties of water samples are in acceptable limits compared to reference values. No significant increase in the nutrient concentrations was observed within the study area resulting from BIL operations compared to previous surveys; and
- Regarding the marine ecology surveys, no significant differences between 2001, 2005, 2007, 2009 and 2011 results were observed. Despite the unproductive sea bottom, most of the commercially important fish and prawn species inhabit the survey area. Hence, no negative trend is observed.

Completion Status: Ongoing

Study/Survey:
Coastal processes survey

Ref: 2007 (p13); 2008 (p23); 2009 (p23); 2010 (p12).

The fifth coastal processes survey was carried out in December 2011, which aimed to monitor potential impacts of the CMT Jetty, if any, on natural coastal development patterns in the vicinity. The previous studies were carried out in December 2006, June 2007, December 2007, and December 2009-January 2010. The December 2011 survey results indicate that the BTC jetty has had no significant effect of on the natural coastal development pattern of the survey area as in previous years.

Impacts associated with the BTC jetty were only observed in the immediate vicinity of the jetty. The impermeable section of the BTC jetty, extending 360m into the sea, blocks the north-east transport of sediments resulting in the accretion observed at the south-west side of the connection point. This particular sand accretion at the south-west part of the jetty might contribute to the formation of a nesting area for marine turtles, since the subject locality is a controlled area. Based on the results of surveys conducted in 2007, 2009 and 2011 it is evident that accretion has not been significant and has not had a negative impact on local benthic and nektonic communities. In contrast, and as a natural consequence of sediment accretion at the south-west connection of the jetty, there are signs of erosion in the opposite direction (north-east) where the breakwater for the emergency response boats is located.

The summer houses along the coastline belonging to Gölovası Village are the closest settlements to the BTC jetty (app. 750m). Since the mentioned sediment accretion concerns only a very limited area (the closest profile to the jetty), no significant impacts were observed to affect nearby settlements as confirmed by the profile measurements.

Consequently, the findings of the monitoring studies to-date indicate that no significant impact has occurred other than the anticipated minor impacts listed above.

Completion Status: Ongoing

Study/Survey:
ROW physical monitoring

Expected Timing:
Operations

Ref: 2009 (p23); 2010 (p12).

The physical monitoring activities were carried out along the BTC ROW in order to identify the general physical status (erosion, vegetation cover, contamination, garbage, third party footprint, etc.) with a higher representation of environmentally sensitive locations and special areas such as such as steep slopes, side slopes, ESA, river crossings, archaeological sites and areas previously contaminated with oil. Five surveys have been completed to date: in 2007 (May and June), 2008 (May and June), 2009 (June and July), 2010 (June) and 2011 (July). During this period 384 locations have been assessed, comprising 14 illegal tap locations, 51 ESAs, 37 archaeological sites, 60 river crossings and 222 steep slope locations. Various problems were reported for a total of 43 of these locations none of which was considered major.

A summary of the locations monitored and parameters assessed are as follows:

- Illegal tap locations: All locations were deemed to be in a safe condition with no problems being observed since the previous monitoring campaign in 2010 in relation to spill, erosion or landscape;
- ESAs: ESAs were monitored with respect to landscape, erosion, unauthorised access and oil spill aspects. The findings indicated that the majority of ESAs are in good condition in general and there are no significant problems;
- Archaeological sites: All sites are in good condition and no problems exist in any of the sites in terms of erosion, landscape or vandalism;
- River crossings: Surveys for main and secondary river crossings were conducted 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. Some minor problems (such as rip-rap damage and change in river bed) were observed at about 10 locations and reported to the ROW maintenance team; and

- Slopes: Steep and side slope locations were inspected. About 90% of the monitored slopes were found to be in a state of erosion class 2 or better. The remaining of the surveyed slopes were mainly Class 3 slopes, which are subject to further monitoring. The main reason for the reported erosion was determined to be limited vegetation cover.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Waste water feasibility survey	Operations

Ref: 2007 (p12); 2008 (p22); 2009 (p22); 2010 (p24).

The purpose of the survey was to inform the design and acceptance of the new Waste Water Treatment Plants (WWTP) or those WWTPs to be improved. The new IPT 1, PT 1 and PT 3 are built. Also there is an improvement plan for PT2 and PT4 WWTPs and the Oily Water Separator (OWS) for all facilities, which is under consideration and based on the survey data. The survey is complete.

Completion Status: Completed

Study/Survey:	**Expected Timing:**
Ballast water management study	Operations

Ref: 2007 (p10-11); 2008 (p22); 2009 (p23); 2010 (p24)

The Ballast Water Risk Assessment study was not conducted in 2011 but it is planned that TÜBİTAK MAM (Marmara Research Centre) will provide the fourth update in 2012 for ships that have visited the CMT after 4 June 2006 (first day of operation). This update will also cover the ships visited CMT in 2011.

TÜBİTAK MAM will also review the 2010 marine ecology and marine sediment survey results that was conducted by BIL and incorporate the findings into the Ballast Water Risk Assessment.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Waste management Best Practicable Environmental Option study	Operations

Ref: 2009 (p24); 2010 (p25).

The study was planned as three phases: BPEO for (i) domestic, (ii) hazardous and (iii) recyclable and reusable waste streams. The domestic waste actions of the BPEO for the management of solid wastes arising from BTC operations in Turkey are being taken by BIL and BTC Company. One of the outcomes of this study was to use the Antakya Municipal Landfill site, which BIL has already started to use under a protocol. The other outcome was to use the Erzurum Municipal Landfill site following the new 2-year EIP project (Eastern Anatolia Waste Management Project) actions taken. Meetings were held with BTC Company, İSTAÇ Company and Erzurum Municipality for the EIP project and site visits conducted. The protocol between BTC Company and Erzurum Municipality has been drafted and is being finalised by both parties. The project will be initiated once the protocol is signed.

The study on hazardous waste is ongoing. The service order with İSTAÇ Company was signed to carry out the air emissions review of Izaydas, Mersin and Kayseri cement factories. The study had to be postponed due to the changes in national regulations. The study will be finalized early 2012.

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

Completion Status: Ongoing

3 CHANGES

As reported in previous Annual E&S 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 Lenders' IEC.

3.1 AZERBAIJAN

There were one Class II and one Class III changes in Azerbaijan in 2011.

Asset	Class	Description of Change
BTC Pump Station, Azerbaijan (PSA) 2	**III**	For technical reasons it is not possible to run Azerbaijan PSA 2 Main Oil Line (MOL) turbines such that that they consistently meet the NOx concentrations emission limit of 75mg/m^3 limit specified in the Emissions Management Plan (AZSPU-HSSE-PMT-01265-2). It is therefore proposed to simulate the NOx emission trading mechanism that applies in the Netherlands, with notional permit costs being used to finance an offset programme. This programme involves the installation of solar thermal heating systems at three villages along the Az Export Pipelines. • Chobanabdalli of Samukh district, kindergarten • Bashirli of Goranboy district, school and • Qurbanzade of Goranboy district, school It is believed that this approach allow the project to be consistent with Host Government Agreement (HGA) commitments to operate to European Union (EU) standards
BTC ROW	**II**	An offset programme was approved by IEC, which will compensate for the failure of *Iris acutiloba* plants to survive following their replanting on the pipeline ROW. According to the program the following activities will be undertaken: • Afforest new areas around BTC pump stations • Re-use treated sewage water to irrigate planted trees BTC plans to plant Cypress and Plane trees in a new area around the pump and pigging stations. These will be irrigated by effluent from the PSA 2 camp, PSA 2 and IPA 1 sewage treatment plants. In addition to providing biodiversity, afforestation will shield the stations from the surrounding area, reducing noise, light emissions and visual impact. In total about 3154 trees (1970 Cypress and 1184 Plane) will be planted around IPA 1 and PSA 2 covering an area of about 4.7ha of which about 3.5ha will be covered by Plane trees, a Red Data Book species.

3.2 GEORGIA

There was one Class I and one Class III change in Georgia in 2011.

Asset	Class	Description of Change
PSG	**III**	For technical reasons it is not possible to run Georgia PSA 1 and PSA 2 MOL turbines such that that they consistently meet the NO_x concentrations emission limit of 75mg/m^3 limit specified in the Emissions Management Plan (AZSPU-HSSE-PMT-01265-2). It is therefore proposed to simulate the NOx emission trading mechanism that applies in the Netherlands, with notional permit costs being used to finance an offset programme. This programme involves the following projects: • Introduction of a solar thermal system in Tbilisi public boarding school number 203 for deaf and diminished hearing children, which will decrease the consumption of natural gas used for central heating and electricity used to heat water for showers and kitchens; • Introduction of a solar thermal system in Georgia SOS children's village in Tbilisi, which will decrease the consumption of natural gas used for central heating and hot water supply for showers and kitchens; and • Construction of a micro-hydropower plant on the Borjomula River in the territory of Borjomi Historical Central Park to produce renewable clean energy. Produced electricity will be used by Borjomi Historical Central Park to receive cheap and clean energy and raise energy security.
BTC PSG 1 and PSG 2	**I**	**Removal of coliform from the retention ponds effluent analysis** Originally, sewage effluent from STPs had to be discharged to the retention ponds, thus coliform bacteria was one of the retention pond discharge monitoring parameters. Currently, it has been decided to connect STPs directly to the reed beds for additional treatment without utilisation of the retention ponds. Therefore, the only water entering the retention ponds is storm water from non-hydrocarbon contaminated areas and water treated within the OWS. As no other water types from site operations are mixed with the above mentioned water prior to entering the retention ponds, it is proposed to remove coliform bacteria from the spectrum of retention pond discharge monitoring.

3.3 TURKEY

There were no Class I, II or III changes in Turkey during 2011.

3.4 CROSS-COUNTRY CHANGES

There were no cross-country changes approved in 2011. However, a Class III change related to NOx emissions from gas turbines in Azerbaijan and Georgia was submitted to the IEC in draft form for comment in 2010 and approved for Azerbaijan and Georgia in 2011. This change was submitted formally in early 2011 and was approved by IEC, thereby ending the non-compliance in this area. Further information on implementation of Offset programmes will be given in the 2012 Annual E&S Report.

3.5 DESCRIPTION OF ANY MATERIAL AMENDMENT, SUPPLEMENT, REPLACEMENT OR MODIFICATION

This section outlines any material amendments, supplements, replacements or material modification to any ESIA, ESAP, Resettlement Action Plan (RAP), Oil Spill Response Plan (OSRP) or the Environmental and Social Management System (ESMS).

3.5.1 Azerbaijan

No material amendments to the BTC Azerbaijan ESIA or RAP were made in 2011.

3.5.2 Georgia

No material amendments to the BTC Georgia ESIA or ESAP were made in 2011.

Execution of material modification to the BP operations in a form of CTU decommissioning will lead to amending BTC ESMS in due course.

3.5.3 Turkey

There were no material changes to the BTC Turkey EIA, ESAP or RAP.

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 2011 are detailed in Appendix 3 of this Report.

4.1.1 Azerbaijan

There were no non-compliances in Azerbaijan from the IEC in 2011. The action taken in response to the previous year's audit non-compliance, involving development and implementation of offset programs, was accepted by the IEC.

No government fines or penalties were incurred for environmental or social non-compliances, and no material environmental claims were made against BTC Azerbaijan during 2011.

One Level III non-compliance related to stack emissions (for adjustment of NOx standards) was corrected by setting up the NOx offset alternative energy programme and one Level II non-compliance for failure of Iris acutiloba plants survival was corrected by planting trees at PSA 2 and IPA 1.

4.1.2 Georgia

There were no new emission or discharge related non-compliances raised during the 2011 IEC annual audit. Two non-compliances from the previous year were closed based on completion of the corrective actions.

One Level III non-compliance related to stack emissions (for adjustment of NOx standards) was corrected by setting up the NOx offset alternative energy programme and one Level I non-compliance for discharge of non-compliant retention pond water into the surface water environment was corrected by general improvement of the waste water discharge system.

4.1.3 Turkey

There was one Level I non-compliance in Turkey relating to a failure to build the marine slops treatment facilities at the CMT. Details are provided in Appendix A.3.3.

Currently, vessels that need and request to offload domestic and recyclable waste are provided with a waste reception service by the adjacent BOTAŞ Iraq-Turkey Pipeline Terminal, under a contract with BIL. Since crude oil tankers do not conduct regular tank washing for maintenance purposes (and the vessels carry out this process only at or on the way to shipyards) oily tank washdown water handling facilities remain as a regulatory requirement but not an operational requirement for the CMT.

No pollution or other detrimental impact has occurred at the CMT as a result of the absence of waste handling facilities. As part of the terminal code (Port Information and Terminal Regulations booklet of BIL), tankers that require maintenance are not accepted at the CMT to load crude oil. For these reasons the potential environmental consequences of absence of the ship waste handling facility at CMT is believed to be negligible.

BTC actively worked with BIL, BOTAŞ and the Ministry of Environment and Urbanization (MoEU) in Turkey to finalise the arrangements for ensuring compliance of the CMT with the applicable International Convention for the Prevention of Pollution from Ships (MARPOL) requirements on waste handling facilities. BIL submitted a MARPOL facility plan to MoEU in 2011, which outlined the ship waste reception facility to be built at the CMT. MoEU approved the plan in December 2011 and instructed BIL to build the facility within 45 working days. Local regulation enables the MoEU to extend the deadline by another 45 days. Engineering and design works will be initiated early 2012 by BTC. However, this schedule is unrealistic and further negotiations will take place with MoEU in order to agree an achievable schedule.

4.2 MONITORING RESULTS

Actions on operational environmental monitoring arising from the BTC Emissions Management Plan (AZSPU-HSSE-PMT-00325-5) continued during 2011. These planned activities were implemented in accordance with the internal HSSE Assurance Plan 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 2011, ambient air quality monitoring was carried out at PSA 2. Sampling devices were deployed during July to August at 5 locations around PSA 2 and the PSA 2 camp. Analyses were carried out for nitrogen dioxide (NO_2) and sulphur dioxide (SO_2).

Monitoring at the Intermediate Pigging Station (IPA) 1 was not conducted in 2011.

All results were within the ESIA specified limits for the 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 and included monitoring of PSA 2 main power generators, 4 turbines and a Water Bath Heater, and IPA 1 main power generators. All of the stacks were sampled for nitrogen oxides (NO_x), carbon monoxide (CO), SO_2, and particulate matter 10 (PM_{10}).

The monitoring results of all BTC Azerbaijan diesel generators (PSA 2 generators A, B and C; IPA 1 generators A and B) and WBH indicated that the NO_x, CO, SO_2 and PM_{10} concentrations are well below the limits specified for these plants in the BTC Azerbaijan ESIA (AZSPU-HSSE-PMT-00571-A1) and Emissions Management Plan (AZSPU-HSSE-PMT-01265-2).

However, monitoring results of the BTC Azerbaijan PSA 2 MOL turbines indicated that NO_x concentrations were higher than the 75mg/m^3 limit specified in the Emissions Management Plan (AZSPU-HSSE-PMT-01265-2) for this plant, but lower than the 125mg/m^3 limit specified in the 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. A MOC that sets a framework for such an offset programme has subsequently been submitted to IEC.

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

4.2.1.3 Noise

In 2011, environmental noise monitoring was conducted in accordance with ESAP requirements at 2 pre-identified receptors around PSA 2, 3 pre-identified receptors around IPA 1, and 6 block valves (BV 4, BV 7, BV 10, BV 11, BV 13 and BV 14) which are located within a 300m distance of community receptors.

Results indicated compliance with the ESAP standards for all locations, excluding Azerbaijan Block Valve (AB) 7 night time standards due to the close proximity of the measurement location to the highway.

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

4.2.1.4 Effluent

BTC Azerbaijan's effluent discharges in 2011 comprised treated sewage from PSA 2, the PSA 2 camp and IPA 1.

Sewage treatment systems at PSA 2, the PSA 2 camp and IPA 1 have the same design and undergo the same 3 stages of treatment: biological treatment, ultra violet (UV) sterilisation, and final polishing in reed beds.

Effluent monitoring included monthly measurements of effluent parameters at the internal environmental laboratory. A third-party subcontractor was engaged to conduct the quarterly effluent monitoring programme on the reed bed outlet at PSA 2.

One external audit finding related to the exceedance of coliform bacteria (ranging from 700/100ml to 16,000/100ml compared with the standard of 400/100ml) during heavy rains. It was recommended to communicate with Ministry of Ecology and Natural Resources (MENR) representatives and inform them about the natural origin of the exceedance.

All results from the PSA 2 reed bed were in compliance with the ESAP standards, with the exception of total phosphorus in March and September 2011 (8.4 and 7.9mg/l against 2mg/l) likely arising from natural processes.

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

4.2.1.5 Ground and Surface Waters

In 2011, surface and groundwater monitoring was carried out in May and November. In May 2011, groundwater samples were taken from 7 monitoring wells at the Karayazi aquifer (3 wells were dry and 1 had been vandalised) and from 2 wells at PSA 2. In November 2011, groundwater samples were taken from the remaining 6 monitoring wells at the Karayazi aquifer (3 wells were dry and 1 well had been destroyed with gravel) and from 2 wells at PSA 2. Surface water samples were taken from upstream and downstream locations at IPA 1 and PSA 2.

All results were in compliance with pre-project baseline conditions.

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

4.2.1.6 Waste Management

During 2011, waste management practices were maintained and improvements undertaken to minimise waste generation through awareness sessions, tool-box talks and the like. All wastes were handled and disposed of in accordance with BP Azerbaijan-Georgia-Turkey (AGT) regional 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 April 2011 at PSG 1, PSG 2 and Area 80. Measurements were taken at 5 locations around each of the mentioned stations for NO_2, SO_2, and benzene. All results demonstrated full compliance with the relevant standards.

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 stack emissions monitoring was conducted in November and December 2011 for most of the equipment of PSG 1 and PSG 2 with the exception of PSG 2 Generator 1, due to the failure of equipment to turn on. CTUs are being decommissioned and were therefore removed from the monitoring programme.

All of the stacks were sampled for NO_x, CO, SO_x and calculations for PM_{10} were performed. In addition, CO_2 monitoring was conducted for operations purposes.

Monitoring results for PSG MOL turbines demonstrated general compliance with ESAP standards with the exception of NO_x emissions.

The MOL turbines NO_x emissions non-compliance has been offset by the alternative energy programme, as noted above.

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

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

Greenhouse Gas and Non-Greenhouse Gas Emissions to Air

Twelve monthly rounds of Greenhouse Gas (GHG) and non-GHG air emission calculations were completed during 2011. The figures for actual fuel used are being received for MOL turbines; equipment specifications and fuel used from running hours assumption is being utilised for generators and WBHs emissions calculations.

A reforecasting exercise was also completed in 2011 using new forecast data and previous years' emissions data.

A summary of GHG air emissions calculation results is provided in Appendix A2.2f.

4.2.2.3 Noise

In 2011, the annual round of environmental noise monitoring took place around PSG 1 (including Area 72), PSG 1 camp, PSG 2, PSG 2 camp, Tsalka and Borjomi Oil Spill Response Bases (OSRB) and the EDDF.

All results, at all locations, indicate compliance with the ESAP project specified standards with the exception of 1 location at the PSG 2 camp due to the noise background of heavy machinery passing along the road towards the municipal railway station construction site.

However the LA90[5] measurement at this location was well within the specified standards

A summary of monitoring results for environmental noise is provided in Appendix A2.2c.

4.2.2.4 Effluent

Effluent discharges in 2011 consisted of treated hydrocarbon contaminated water from PSG 1 and PSG 2 retention ponds, treated sewage from PSG 1 camp, PSG 2 camp, PSG 2 site and Borjomi OSRB reed beds. All of these discharges are subject to regular monitoring.

Existing Rotating Biological Contactor (RBC) type STPs were removed from PSG 2 camp and installed at PSG 1 camp. New RBC type STPs were installed at the PSG 2 site. The Tsalka OSRB and the existing RBC were maintained at Borjomi OSRB.

The EDDF non-RBC type STP failed to maintain the standards of treated water and after numerous maintenance attempts was stopped. The waste water from the EDDF is being transferred to the Area 80 permanent accommodation STP for treatment and disposal. A new RBC type STP was purchased. It is planned to be installed by the end of 2012. The Tsalka OSRB RBC type STP was not monitored due to the absence of discharge. The results indicate general compliance with the project-specified standards, with the exception of PSG 1 retention pond (one TSS reading), PSG 1 camp (one coliform bacteria reading) and PSG 2 camp (two Coliform bacteria readings – resulted in non-compliance report completion with specified actions recorded in Tr@ction).

The non-compliances were found to be caused by: a reduction in microbial activity due to the low ambient temperature; uneven distribution of air in the aeration tank due to 2 diffusers not being fitted: and removal of an RBC type STP from the site (for its installation at PSG 1 camp, thus leaving PSG 2 camp with only a TETEM type of STP, not capable of treating the discharge consisting of a large amount of domestic chemicals, which is being discharged into the sewage.

Taking all the above into consideration the following measures were identified and recorded within Tr@ction for action:

1. Develop site-specific STP operation and maintenance procedures (considering design changes), including a detailed inspection and preventive maintenance schedule. For example, the schedule should include a defined frequency of inspection and maintenance of air diffusers, aeration tank temperature controls and pumps and electrical systems;

[5] This is the noise level that is exceeded 90% of the time and is therefore excludes short events such as cars passing and dogs barking. It is therefore generally representative of the background noise at a location.

2. Contractor to develop a site-specific domestic chemical inventory and update the cleaning schedule in a manner to reduce multiple on-site applications, thus minimising volume of chemical disposal to the STP and subsequent treatment system upset;
3. Environmental advisor to communicate changes ensuring that similar mitigation measures are implemented across other BTC facilities and consistency maintained between sites; and
4. Maintenance representatives from the catering and camp management contractor shall report all deviations and abnormal cases, like sludge microbial activity reduction or temperature changes, immediately to field environmental advisors.

A summary of monitoring results is provided in Appendix A2.2d.

4.2.2.5 Ground and Surface Waters

Two full seasonal (May to June and September to October) rounds of groundwater and surface water monitoring were conducted during 2011 along the BTC pipeline and around PSGs. The results of monitoring demonstrated full compliance with the specified Method Detection Limits (MDLs).

A summary of groundwater and surface water monitoring results is provided in Appendix A2.2e.

Non-Hazardous Landfill Groundwater

Three quarterly rounds (starting from 2011-Q2) of underground seasonal water monitoring were conducted at BP non-hazardous landfills in 2011. During 2011-Q2 all 5 monitoring wells were sampled. During the 2011-Q3 round, only monitoring wells 2, 3 and 4 were sampled with monitoring well 1 and 5 being dry. During the 2011-Q4 monitoring, only wells 3 and 4 were sampled as monitoring wells 1, 2 and 5 were dry.

The results of the analysis showed general compliance with the background geochemistry, with some fluctuations within several parameters, such as electrical conductivity (wells 2, 3 and 4), sulphate (all monitoring wells), chloride (well 3), sodium and baron (wells 2, 3, 4 and 5) and selenium (wells 2 and 3).

Through averaging the results for each quarter, a trend of increasing conductivity emerges (Refer to Figure A2.2.1 in Appendix A2.2e). This seems to be linked with rainfall patterns. Relevant table in Appendix A2.2e shows precipitation figures for Rustavi area, which indicate high rainfall in 2011-Q2, which then began to decrease in 2011-Q3 and 2011-Q4. This is also consistent with the number of dry wells.

Original wells, which were used for background data collection, were destroyed during the construction of the landfill, therefore the monitoring is being conducted from new wells.

Additional geological studies and installation of additional wells for monitoring is planned in 2012.

A summary of non-hazardous landfills ground water monitoring results is provided in Appendix A2.2e.

4.2.2.6 Waste

A summary of waste generated in 2011 is provided in Appendix 2.2g. The main waste generation areas are at PSG 1 and PSG 2. The Central Waste Accumulation Area continues to be utilised by operations for the storage of hazardous waste, which cannot be recycled or disposed of in accordance with appropriate standards.

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

In 2011, BP Georgia continued using local companies for BTC waste recycling, such as: Caucasus PET Company with 181m^3 of plastic waste recycled; Vargi Limited with 334m^3 of paper/cardboard recycled; and NSM & Company with 135m^3 of metal waste recycled.

BTC developed a new contract with a local battery recycling company. BP improved the company's safety and operational conditions by providing new fire extinguishers, PPE for staff and modifying electrical connections/junction boxes. In total 48.3m^3 of used and replaced batteries from BTC block/check valves were sent for final disposal. The recycling company produces new accumulators for cars.

In May 2009, the first EU-standard non-hazardous waste landfill in Georgia began operation. During 2011, the landfill received 640m^3 of compacted waste.

BTC continues using food waste macerators and a dewatering system.

4.2.3 Turkey

4.2.3.1 Ambient Air Quality

Ambient air quality monitoring is undertaken only at the CMT. The results of monitoring are presented in Appendix A.2.3a. No ambient air monitoring is required at the 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, BTEX, SO_2 and NO_x are measured at 7 locations at and around the CMT once every 3 months.

Four surveys were undertaken between January and December 2001 (although the January 2011 survey actually commenced in December 2010).

All annual average measurement results of parameters were in compliance with the project-specific standards and limit values set by Turkish regulations. The highest BTEX values were observed at CMT 3 Karatepe quarter, CMT 7 existing BOTAŞ housing compound and CMT 10 İncirli quarter, which are intensively under the effect of BOTAŞ facilities. Some other occasional increases were also observed at other monitoring locations, but these were not significant. The annual average values of parameters measured in 2011, are very close to those for 2010.

Changes to the monitoring programme were also proposed by the contractor, which was ensured by BTC Company that BIL's environmental monitoring contractor SoW included these changes.

4.2.3.2 Stack Emissions

The flue gases originating from gas fired reciprocating engines, water heaters, diesel-fired generators and wax handling boilers were monitored by BIL's environmental monitoring contractor in accordance with the ESAP Environmental Emissions Management Plan.

Stack emissions monitoring results for 2011 are shown in Appendix A.2.3b. The results demonstrate compliance at all facilities with the exception of SO_2 at the PT 1 water heater 1 and soot at the IPT 1 wax handling water heater. The maintenance of those pieces of equipment was performed by the BIL maintenance department following notification of the non compliant monitoring result.

4.2.3.3 Noise

The project standard for noise specifies a maximum of 45dBA 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 at a maximum of 50m from the perimeter fence at each PT. The closest residential receptor to any of the facilities is 1.5km away. 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 2011, consequently, no ambient noise level monitoring was conducted.

4.2.3.4 Aqueous Discharges

Aqueous discharges originating from project facilities, (as well as downstream surface water bodies that receive aqueous discharges), are monitored on a monthly basis. Upstream water bodies are similarly monitored to establish control conditions. Aqueous discharge monitoring results for 2011 are shown in Appendix A.2.3c.

A number of aqueous discharge streams did not meet project standards. In such cases, the effluent was recycled or trucked to project-approved municipal WWTPs for further treatment and discharge.

In 2011, WWTP control checklists were revised for all facilities. Preventive maintenance work plans were prepared for all OWSs by BIL. The new WWTPs at IPT 1, PT 1 and PT 3 were added to the Maximo system for systematic maintenance. Preventive maintenance work plans and preventive maintenance request forms were prepared and shared with the Maximo department for PT 2 and PT 4 existing WWTPs and all PTs OWSs. The IPT 2 seepage shaft overflow line remediation was also completed by the BIL's ROW Technical Management team.

Details of the studies carried out for waste water system improvements at all facilities are provided in Section 2.4.3.

4.2.3.5 Groundwater

Groundwater monitoring was conducted in 2011 at the CMT and PTs in line with the project commitment and scope of work.

The main objectives of the monitoring programme are to determine:

1. Operational impacts of groundwater abstraction from the wells;
2. Possible contamination by BTC facilities on groundwater; and
3. Saline intrusion for CMT (Yanikdegirmen) well, if any.

Monitoring was completed in December 2011. The evaluation report will be available in 2012.

4.2.3.6 Waste Management

In 2011, about 441t of solid waste was disposed of off-site. Of this, 14% was hazardous waste that was sent to Izaydas for incineration, 37% was domestic waste sent to Izaydas for landfill and the remainder was non-hazardous waste that was reused or recycled. Appendix A.2.3d provides details of waste volumes generated.

For details of the waste management BPEO study refer to Section 2.4.3.

4.3 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 2011.

All non-compliances that have been identified in 2011 are summarised in the Executive Summary and are shown in Appendix 2. Non-compliances relating to other audits are provided in Section 11 (and detailed in Appendices 3 and 4). For all non-compliances identified, corrective actions have been developed and implemented.

4.4 CHANGES IN APPLICABLE ENVIRONMENTAL LAW6

4.4.1 European Legislation

New and amended EU directives, regulations, and decisions announced in 2011 have been reviewed. Potential implications arising from the review are being taken into account as part of the HSSE Compliance Programme. The following Regulations have been identified as being potentially relevant to BTC's legal obligations and, where reasonably practicable, aspects of these will be considered for inclusion into BTC's HSSE compliance system (unless otherwise stated):

1. Regulation (EU) No 291/2011 on essential uses of controlled substances, other than hydrochlorofluorocarbons, for laboratory and analytical purposes in the EU falls under the Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer. The Regulation allows the production, import and use of controlled substances other than hydrochlorofluorocarbons for specified essential laboratory and analytical use. Decision XXI/6 of the Parties to the Montreal Protocol consolidates existing decisions and extends the global laboratory and analytical use exemption beyond 31 December 2010 until 31 December 2014 for all controlled substances, except for hydrochlorofluorocarbons, thus authorising the production and consumption necessary to satisfy essential laboratory and analytical uses of controlled substances, subject to the conditions established under the Montreal Protocol.
2. Regulation (EU) No 537/2011 of 1 June 2011 on the mechanism for the allocation of quantities of controlled substances allowed for laboratory and analytical uses in the Union under Regulation (EC) No 1005/2009 of the European Parliament and of the Council on substances that deplete the ozone layer. The Regulation provides the mechanism for the allocation of quantities of controlled substances allowed for laboratory and analytical uses that should ensure that the quantity annually authorised under licences for individual producers and importers does not exceed 130 % of the annual average of the calculated level of controlled substances licensed for the producer or importer for essential laboratory and analytical uses in the years 2007 to 2009 and that the total quantity annually authorised under licences, including licences for hydrochlorofluorocarbons under Article 11(2) of Regulation (EC) No 1005/2009, shall not exceed 110 ozone-depleting potential (hereinafter 'ODP') tonnes.

[6] Applicable environmental laws as defined within the HGA and Inter Government Agreement.

4.5 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.

4.5.1 Azerbaijani Law

There were no environment-related legislative changes in 2011 that were potentially relevant to BTC Azerbaijan.

4.5.2 Georgian Law

The following environmental-related legislative changes occurred in 2011 and are potentially relevant to BTC Georgia.

Regulation Title	Regulation Topic	New/ Revision	Impact on BTC Georgia Operations
Resolution No.136 on Approval of Rules and Conditions for Issuance of Mineral Resources' Extraction Licenses	Licensing	Revision	To be assessed
Resolution No.14 of Government of Georgia on approval of new decree on "Environmental Impact Assessment"	EIA	Revision	To be assessed
Law of Georgia on changes into the certain legislative acts. No.5201-II	Flora and fauna	Revision	To be assessed
Resolution No 426 Government of Georgia on "Approval of Decree about extraction and use of useful minerals"	Mineral usage	Revision	To be assessed

4.5.3 Turkish Law

The list of national environmental regulations that were published or re-issued in 2011 is shown below, along with a statement regarding BTC's likely response:

Official Gazette No	Effective Date	Regulation On:	New/ Revision	Potential Impact on BTC Turkey Operations
27916	26.04.2011	Communication on waste interim storage facilities	New	Related to storage areas where wastes are kept until transporting to waste recycling and disposal facilities. Waste interim storage facilities should be audited by BIL according to this communication.
27967	Published on 17.06.2011 Effective dates are different.	Communication on recovery of some non-hazardous wastes	New	Annual declaration of non-hazardous waste would be required by BIL every March, starting from 2013.

Official Gazette No	Effective Date	Regulation On:	New/ Revision	Potential Impact on BTC Turkey Operations
28035	24.08.2011	Control of packaging waste	New	Packaging wastes collection and separation facilities and recycling and recovery facilities should be audited by BIL according to this Regulation.
28036	25.08.2011	Ceyhan (BOTAŞ) Port	New	Refers to requirements on ship waste handling and ship waste control.
27807	06.01.2011	Technical, safety and environment regarding construction and operation of BOTAŞ crude oil and LPG pipeline	New	BIL's construction and activities are already in compliance with this Regulation.
27957	07.06.2011	Public waterworks administration groundwater metering systems	New	Requires installation of a water metering system at wells.

5 OIL SPILL RESPONSE

5.1 SUMMARY OF OIL SPILL RESPONSE PLANS COMPLETED, UPDATED, OR AMMENDED DURING THE YEAR

The OSRPs for Azerbaijan and Georgia were amended and updated in September 2011 as summarised in Section 5.3.

In July BIL made the decision not to renew their contract with SESMeke, their OSR contractor, with a view to providing all response activities in-house. As a consequence, BTC put in place a direct contract with Seacor to provide services in Turkey in addition to their existing scope in Georgia. Subsequently Seacor took over the OSRBs previously managed by SESMeke.

5.2 SPILL AND REMEDIATION SUMMARIES

BTC reports any material release that reaches the environment (i.e. is uncontained) or that is greater than 1bbl, 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 releases is provided in Table 5.1.

Table 5.1: BTC Material Releases in 2011

Asset	Liquid			Gas
	<1bbl	>1bbl		
	Uncontained	Contained	Uncontained	
BTC Azerbaijan	0	0	0	0
BTC Georgia	0	0	0	0
BTC Turkey	0	2	0	1

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

5.2.1 Azerbaijan

There were no material releases during 2011.

5.2.2 Georgia

There was no contained spill greater than 1barrel (bbl) recorded during 2011.

5.2.3 Turkey

5.2.3.1 Contained

There were 2 contained spills greater than 1bbl recorded during 2011.

Estimated 1.89bbl crude oil (PT 1 – March 2011)

A lube oil spill occurred from the MOL C Wartsila engine oil sump drain pipe during the 26,000 hours maintenance work. Oil was removed from the gallery to the slop tank using a pump. Contaminated areas were cleaned up using oil spill kits. All drain pipe plugs for the Wartsila engine oil sump drain lines have been checked, locked and closed. All related personnel have been informed about the incident.

Estimated 2.01bbl crude oil (PT 1 – November 2011)

During positive isolation works on MOL D for station depressurization pipe replacement work inside the pump house gallery, mechanical technicians were dismantling the flange connection of the 8" recycle line. While breaking the flanges, approximately 320L of oil flowed into the drip tray, of which about 20L overflowed. Absorbent pads were immediately laid on the ground to collect the overflow. The drip tray was emptied to a safe container and oil on the ground cleaned up immediately.

5.2.3.2 Uncontained

There were no uncontained spills recorded during 2011. However, a gas leak occurred at the CMT.

During a field check, the VOC operator noticed there was a LPG leakage on the flexible metal hose of the pilot gas line at VOC Stack Number 2. The operation of the stack was immediately stopped. A work order was issued to replace the ripped flexible pipe. All flexible pipes were checked on the remaining 5 VOC stacks.

5.2.3.3 Illegal Taps

One illegal tap (HT 26) occurred in 2011. It was discovered at KP 1026+005 on 24 June 2011. The illegal tap location was within the ESA 48. Access to the pipeline was via hand excavation. A 2" illegal connection was discovered between 20cm to 30cm depth. No soil contamination was observed. The location was reinstated following backfilling activities.

5.2.3.4 Remediation

A bioremediation programme for approximately 150m^3 of contaminated soil, which originated from previous illegal taps, was implemented by BIL at the CMT. The programme is nearing completion as the bioremediated soil has been confirmed as reaching the inert waste (soil) category. The bioremediated soil is planned to be stored within the CMT, and if necessary at a later stage, will be sent to the Antakya Municipal Landfill Site for disposal.

During repair work at the BVT 24, site personnel observed an obvious odour within the excavation area. Approximately 6m^3 of oil contaminated soil (which originated from a BVT 24 spill in 2009) was excavated from the surrounding of the upstream 8'' bypass line (drain pipe on the bypass line) and then placed in a separate location in the field. Soil sampling was conducted in order to understand the contamination level of the soil. Based on the laboratory results; TPH, chromium and nickel were above the specified limits and the contaminated soil was decided to be sent to the CMT for bioremediation. The bioremediation process for BVT 24 oil contaminated soil is ongoing.

5.3 SUMMARY OF MATERIAL MODIFICATIONS TO THE OIL SPILL RESPONSE PLANS

The OSRP for Azerbaijan was amended and updated in September 2011 to include the following changes:

- Updated response equipment inventory list; and
- Updated page numbers.

The OSRP for Georgia underwent very minor changes.

It should be noted that a major update of the OSRPs is expected in 2012 based on the new BP Group Defined Practice (GDP 4.6-0002 Oil Spill Preparedness and Response).

6 ADDITIONALITY PROGRAMMING

6.1 SUMMARY OF ENVIRONMENTAL INVESTMENT PROGRAMME

6.1.1 Azerbaijan

Since 2009, the Azerbaijan EIP ceased to exist as a separate programme when all EIP activities were integrated within the framework of the Sustainable Development Initiatives (SDI) and Community Development Initiatives (CDI), refer to Section 6.2.

6.1.2 Georgia

6.1.3 NO_x Offset Programme

Agreement A-11-BPCS-275667 between BP Exploration (Caspian Sea) Limited and the Energy Efficiency Centre Georgia was signed on 30 November 2011. This Agreement expires 31 December 2013. Its scope includes provision of funds within the SDI to implement renewable energy and energy efficiency projects for Georgian communities. These projects are:

- Construction of a micro-hydropower plant on the Borjomula river in the territory of Borjomi Historical Central Park to produce renewable clean energy;
- Introduction of a solar thermal system in the Georgia SOS children's village, which will decrease the consumption of natural gas used for central heating and hot water supply for showers and kitchens;
- Introduction of a solar thermal system in the Tbilisi boarding public school number 203 for deaf and diminished hearing children, which will decrease electricity consumption used to heat water for showers and kitchens; and
- Development of renewable energy and energy efficiency demonstration projects and an accessible renewable energy and energy efficiency funding mechanism.

In addition to offsetting BTC NO_x emissions, the implemented projects aim to demonstrate to local decision makers and the population at large that application of clean energy solutions has the potential to meet energy demand and can result in energy bill reductions and lower emissions. Increasing capacities of local targeted beneficiaries in implementation and monitoring of clean energy projects and provision of relevant information resources will raise awareness among communities.

6.1.4 Turkey

Ten of the construction phase projects (EIP 1) and 5 operation phase projects (EIP 2) are complete. The conservation of commercially important endangered endemic plants in Ardahan and Kahramanmaraş project was completed in 2011. There are 5 ongoing projects. New projects are also under development.

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 the 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 pipeline region	Construction (EIP 1)	01/08/2003	31/12/2005	260,000
6	Lesser Caucuses Forests gap analysis	Construction (EIP 1)	01/02/2004	31/04/2006	305,000

	Project	Phase	Started	Completed	BTC Funds Spent (US$)
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
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	31/05/2011	420,000
12	Biogas/fertilizer demonstration in Kahramanmaraş – Phase 1	Operations (EIP 2)	01/12/2006	31/12/2009	60,000
13	Conservation priority analysis for central and south BTC regions – Phase 1	Operations (EIP 2)	01/12/2006	Ongoing	1,350,000
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	Ongoing	445,000
18	Conservation of commercially important endangered endemic plants in Ardahan and Kahramanmaraş	Operations (EIP 2)	01/12/2007	31/12/2011	275,000
19	Terrestrial wildlife rehabilitation	Operations (EIP 2)	01/04/2010	Ongoing	250,000
20	Marine wildlife rehabilitation	Operations (EIP 2)	01/01/2011	Ongoing	190,000
21	Eastern Anatolia waste management	Operations (EIP 2)	01/01/2011	Ongoing	200,000
	TOTAL				**7,050,000**

The EIP continued to promote biodiversity as well as extending the themes into the following areas:

- National environmental infrastructure (such as waste disposal and waste water treatment facilities);

- Wildlife care; and
- Regulator capacity support (awareness and experience).

6.1.4.1 Project Status as of December 2011

A summary of key EIP developments in 2011 are as follows:

- **Conservation of endangered plants along the BTC pipeline:** This project targeted offset habitat creation for BTC-impacted plants. Local conservation actions were taken for 10 endemic plant species. Propagation of endemic plants in Ardahan and Kahramanmaraş was successfully completed. In total, 10,000 seeds were planted in a pilot garden allocated and funded by the District Governorship of Cildir, Ardahan. A guideline for the propagation of bulbous plants will be published in early 2012. The guideline is anticipated to be used by volunteer propagators and will be one of the most important outcomes of the project;
- **Conservation investment priority analysis for the central and southern BTC regions:** This project aims to mainstream biodiversity conservation into the forestry sector. The project also disseminates data and information by collecting and standardising all EIP generated data and transferring it into the national database. A low budget and replicable integration of biodiversity into the forest management plan was completed in Artvin. Others will follow using the guidelines developed as part of the project and will be funded by the General Directorate of Forestry;
- **Implementation of the Yumurtalik lagoons management plan (Phase II):** This project aims to maintain momentum towards conservation of a wetland ecosystem and reduce some of the land use complexities that local stakeholders are facing. Monitoring of the water quality continued during 2011. Freshwater connection from the river to the lagoons was established. The management plan is being implemented as planned however, due to the continuation of a legal case, some of the activities concerning the status of the National Park are currently on standby;
- **Terrestrial wildlife rehabilitation centre project:** This 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, as well as increase Turkey's capacity with respect to wildlife rehabilitation. The rehabilitation centre was completed in 2011 and has commenced operations. Injured and orphaned wild animals were treated, rehabilitated and returned to the wild where possible. Those that are not able to be rehabilitated are cured in the centre. The centre also hosted volunteers who had the opportunity of practicing wildlife rehabilitation;
- **Marine wildlife rehabilitation centre project:** This project aims to enhance and operate a marine wildlife rehabilitation centre, establish an operation system with the aim of caring for sick, injured and orphaned wildlife and introduce Turkey to wildlife rehabilitation. An existing sea turtle centre on the south-west coast of Turkey was improved in 2011 with project funds. Injured sea turtles were rehabilitated and returned to their habitats. Satellite monitoring of selected sea turtles also started during 2011. The centre was also a very popular destination in 2011 for volunteers seeking opportunities to help wildlife conservation and gain rehabilitation experience. The centre was also visited by many tourists; and
- **Eastern Anatolia waste management:** This project aims to provide technical assistance to Erzurum Municipality to enhance their operations procedures and practices to operate a municipal landfill to EU standards. The project activities will be accelerated once a protocol between BTC, Erzurum Municipality and the EIP Grantee is signed.

6.1.5 Environmental Investment Programme Expenditures 2011

Table 6.2 shows the amount budgeted for the EIP and the cumulative spend since its inception. Table 6.3 shows the breakdown of expenditures for 2011.

Table 6.2: Cumulative EIP Budget and Expenditures (US$) 2003-2011

	Azerbaijan	Georgia	Turkey[7]	TOTAL
EIP budget	3,467,000	3,000,000	7,570,000	14,037,000
Total spent-to-date (at end 2011)	1,697,298	2,877,548[8]	7,052,000	11,626,846

Table 6.3: Summary of EIP (Operations Phase) Expenditures (US$) 2011

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	0	300,000	550,000	850,000
Actual	0	300,000[9]	550,000	850,000

6.1.6 Environmental Investment Programme Budget 2012

The EIP, CDI and SDI programme budgets in Azerbaijan were consolidated and became part of the overall social investment budget.

Table 6.4 shows the breakdown of the 2012 planned budget.

Table 6.4: EIP Budget (US$) 2012

	Georgia	Turkey	TOTAL
Budget 2012	750,000[10]	550,000	1,300,000

6.2 SUMMARY OF COMMUNITY DEVELOPMENT INITIATIVES[11]

The following table summarises how the projects performed across all 3 countries under the CDI programme (refer to 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 US$145,000 to the initially planned US$300,000 was added in 2009 for Ktsia-Tabatskuri Reserve Management implementation project.
[10] Includes US$450,000 from PEIP budget.
[11] In Azerbaijan the term CIP has changed to Community Development Initiative (CDI).

Table 6.5: BTC/SCP CDI and Other Investments – Visualising the Benefits (to year end 2011)

Investment Type	Azerbaijan	Georgia	Turkey
Number of communities benefiting	161	77	330 in total (in 2011, projects mainly focused on 220 villages)
Amount invested (US$)	894 million[12]	5.668 million[13]	23.256 million (including 2.1 million which was allocated for 2011)
Implementing partners (IP)/Number of local/national NGOs	5 IPs and12 local NGOs	1 IP and 5 NGOs assisting	3 IPs (all national) implementing projects in partnership with 133 village based organisations (associations, co-operatives, farmer unions) and local authorities along the BTC route
% Women in community action groups for 2011	48%	22%	Average 32% varies from 8% to 60% according to region (all CIPs have separate projects targeting 100% women)
Number of medical facilities improved	42	2	11
Number of education facilities improved	63	5	133 schools upgraded (in addition, 622 women/girls have applied to open school programmes) 164 schools have been painted under cooperation between BTC, Filli Boya and Search and Rescue Association (AKUT)
Number of water supply systems improved	99 (potable and irrigation)	37 potable, 29 irrigation	123 potable water systems including 12 electrical motor pump systems were improved 97 irrigation systems (drip, sprinkling and concrete channel) were improved 178 water systems for animal were improved
Kilometres of road upgraded	347.64km	10km	Road improvements were not supported under the CIP for Turkey in 2011. Village roads were improved as part of reinstatement activities during the construction and reinstatement phase.
% Infrastructure project achieving >25% community contribution	93.3	100% Contribution was no less that 50%	Approximately 450 quick impact projects have been completed between 2003 and 2011. 95% of 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	37,963 people received general health training (over 13,000 people received reproductive health training from an EU funded project implemented by a CIP IP in Ardahan)

[12] Amount invested: until 31 December 2006 – accruals plus amount disbursed, from 1 January 2007 – only amount disbursed. This amount includes spend on BTC/SCP projects within SDI, but for 2011 only the amount of CDI projects added.
[13] Figures contain the budget of CDI 2, Farmers to Market, CDI 3 (BTc/SCP), CDI (WREP)

Investment Type	Azerbaijan	Georgia	Turkey
Number of micro-loans issued	54,642[14]	4,395	According to CIP exit plans, all micro-loans were cancelled in Turkey and funds are used for collective income generation activities in agro-businesses by co-operatives and producer unions such as Andırın Cherry Producers Union
% Repayment rate for micro-loans	97.5%	100%	Approximately 87% of the micro-loans were repaid and the process is on going for the remaining 13%, which will be transferred to the Andırın Cherry Producers Union
Average value of micro-loan (US$)	2,346[15]	1,500	Not applicable in 2011
% Women receiving micro-loans	21%	65%	Not applicable in 2011
Number of demonstration farms/agricultural trainers	102 demonstration field plots and 53 agricultural trainers	150 demonstration farms. 30 demonstration farming groups; 11 trainers	2,603 demonstration farms were established in the project villages (333 agricultural trainers were trained)
Number of farmers trained	5,657 farmers	4,698	Over 131,199 (also 842 beekeepers)
Number of livestock vaccinated	–	828	1,066,804 livestock vaccinated, CIP is giving support to Cattle Breeders' Unions (CBU); 60,722 cows have been artificially inseminated to-date (including livestock vaccinated more than once)
Weight (tonnes) of high quality seed provided	59.2t	23.2t	Over 1,375t (also over 63,000 units of fruits saplings provided)
Number of co-operatives established	1 development resource centre in Yevlakh 7 agricultural service centres 8 water purification Limited Liability Companies 5 youth funds established	25 co-operatives (15 producer and 10 service groups are created)	70 village-based organisations established (co-operatives, associations and informal Community Based Organizations (CBO)) In total, 133 village-based organisations (including co-operatives, village development associations and unions) received support from the project since 2003 under the capacity building theme of the 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 Regional Development Initiative (RDI) special funds (US$1,600,000) for implementation of the 2.5-year 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 the SDI.

[15] Average value of micro-loan for year 2010 is $USD 2,346. No micro-loan was given in 2011.

6.2.1 Azerbaijan

6.2.1.1 Sustainable Development Initiatives in Azerbaijan

Caspian Information Centre

The Caspian Information Centre (CIC) is being implemented within the framework of the Caspian Environmental Programme (CEP) developed for and by Caspian Littoral States. The main objective of the CEP is to halt the deterioration of environmental conditions of the Caspian Sea and to promote sustainable development in the area.

The main objective of the CIC project is to establish an online environmental database which will be used as a centralized regional hub and provide up-to-date information on the environmental situation of the Caspian Sea basin, promote environmental data collection, sharing, monitoring, analysis, harmonization and public communication. The CIC will also be used as a tool to promote sustainable development and environmental activities in the region.

Local Governance, Youth Development and Environment Programme

The Local Governance, Youth Development and Environment Programme project is aimed at enhancing the capacity of municipalities in identifying and addressing local problems as well as increasing awareness of environmental problems and facilitating their resolution. Additionally, the project will establish a mechanism of youth participation in local governance through the establishment of youth chambers within municipalities and by educating and engaging youth in addressing environmental problems within their communities.

The project encompasses 9 municipalities in 9 villages along the BTC pipeline ("Community") and targets community youth.

Enterprise Development and Training Programme

Launched in 2007 the Enterprise Development and Training Programme (EDTP) aims to support local companies in achieving international standards, to enhance their competitiveness in supplying the oil and gas sector of Azerbaijan and increase the local content of our contractors.

The programme covers a wide range of activities related to the development of the local supply chain such as market surveys and the identification of potential local suppliers, detailed gap analyses and implementation of tailored development plans as required.

Key achievements since inception of the project:

- 93 companies have successfully completed the program since 2007;
- 187 business development plans (action plans) and 182 gap analyses have been produced to support participating companies in delivering improvement activities;
- Local companies have invested approximately US$8,700,000 in new capital equipment;
- EDTP clients have hired 527 new employees; and
- The programme has assisted local companies to secure contracts with local and international companies valued at more than US$184,000,000 from which more than US$125,000,000 are with BP.

Highlights for 2011 include:

- 79 local companies were engaged in EDTP activities;
- 33 development plans were implemented;
- EDTP clients have hired 314 new employees; and
- A major showcase event was hosted by BTC and its co-venturers in June, 2011. The event was organised as part of our commitment to help local companies increase their participation in BTC-operated oil and gas projects through enhancing their capabilities, developing their business and building relationships with potential clients.

Micro and small lending and advisory programme with the European Bank for Reconstruction and Development

Under the framework agreement signed in 2006, BTC and its co-venturers committed US$6,000,000 through the European Bank for Reconstruction and Development (EBRD) for use as loans and for technical assistance to private sector development in Azerbaijan and Georgia. The objective was to help widen access to finance and to encourage a strong microfinance sector in both countries.

As part of the contract amendment in 2010, US$1,600,000 was allocated to 30-month credit advisory services, an initiative aiming to provide technical support and institutional strengthening of seven financial institutions in Azerbaijan, to enable them to provide Small and Medium Enterprise (SME) loans in urban and rural regions on a sustainable basis.

Highlights for 2011 include:

- A master manual on human resources development was specially developed for financial institutions involved in the project;
- A workshop was held in cooperation with the Azerbaijan Microfinance Organization aimed to introduce Management Information Systems (MISs) currently available in global markets and used by financial institutions around the world. Expert representatives from local financial institutions attending the workshop had a chance to familiarize themselves with various MISs and further consider applying such systems in their organization, based on their operational needs;
- 22 seminars on 7 different topics were conducted with 309 financial experts representing 8 financial institutions; and
- The percentage of lending in urban and rural regions/agricultural lending/lending to women has increased.

Advisory Services on Macroeconomic Management and Institutional Reform

The Advisory Services on Macroeconomic Management and Institutional Reform (ASMMIR) technical assistance project continued in 2011. The implementing partner - Center for Social and Economic Research (CASE), supported the Ministry of Economic Development of the Republic of Azerbaijan in enhancing economic planning capability by improving forecasting and economic policy analysis skills. The total value of the contract with CASE is US$1,250,000. The project was successfully completed in January 2012.

Highlights for 2011 include:

- Analytical content of regular macro-economic reports, prepared by the Department of Economic Policy, Analysis and Forecasting was expanded;
- Forecast values based on the macro-economic framework of the Azerbaijan economy for 2011 to 2015 were elaborated and further updated;
- The money and inflation in Azerbaijan study presenting a possible approach to inflation modelling was published; and
- A series of reports and documents dedicated to the situation in the global economy, monetary policy and impact of oil revenues on inflation was prepared.

Business enabling environment project with International Finance Corporation (IFC)

The programme was established to assist the Government of Azerbaijan in improving legislation in the areas of permitting/licensing and business registration.

Highlights for 2011 include:

- In cooperation with the EU Twinning Project, a study tour on the progress of inspection reforms in Lithuania was organised for representatives of 6 Ministries, the President's Administration, the Cabinet of Ministers and the Parliament;
- An international seminar on inspections conducted by the Ministry of Tax, and other governmental bodies and 5 roundtable discussions enhancing Government's understanding of the reform process was organised within the project framework;
- In co-operation with State Fire Inspection Service of the Ministry of Emergency Situations, 5 regional seminars on fire safety requirements and the use of checklists were conducted. The seminars involved 310 entrepreneurs and 145 inspectors from across the country;
- A guide for entrepreneurs on using the e-Registry was developed in collaboration with the Ministry of Justice; and
- A trial version of the SME Portal was launched to the public under the internet domain www.biznesinfo.az. The Portal includes materials on business regulations, compliance requirements, self-learning tools, such as business forms and calculators, analytical information, including market overviews and expert opinion, and investment related information.

SDI initiatives are summarized in Table 6.6 below:

Table 6.6: Summary of SDI Initiatives

Project	Partners	BTC Grant[16] (US$)	Partner Contribution (US$)	Total Project Funds (US$)
EDTP	Azerms Limited Liability Company	908,945	N/A	3,635,780
Micro and small lending and advisory programme	EBRD	1,500,000	8,400,000	14,400,000
ASMMIR	CASE	312,500	N/A	1,250,000

[16] Budget of all SDI projects in Azerbaijan are divided equally between BTC Company, SD Ltd, AIOC and SCP Company.

Project	Partners	BTC Grant[16] (US$)	Partner Contribution (US$)	Total Project Funds (US$)
Business enabling environment project with IFC	IFC	115,000	4,300,000	4,760,000
CEP	Stiftelsen Grid Arendal	37,500	40,000	150,000
Local governance, youth development and environment programme	Eurasia Partnership Foundation (EPF)	49,348	268,074	465,465
TOTAL		**$2,923,293**	**12,968,074**	**24,661,245**

6.2.1.2 Community Development Initiatives in Azerbaijan

In 2011, BTC Azerbaijan continued to support sustainable CDIs along the BTC and SCP pipelines.

The community programme was implemented in 56 communities across Azerbaijan in 2011. The programme focused on income generation and the creation of wider economic opportunities. In 2011, BTC and its co-ventures allocated about $808,000 to the community programme and supported many projects. Supported projects included:

Introduction of greenhouse agriculture into the communities in the Goranboy Region

The primary goal of the project implemented by the Ganja Agribusiness Association was to foster sustainable economic development through the establishment of greenhouse agriculture in Goranboy communities. The programme was launched in June 2010 and was completed in November 2011.

Throughout the project, 27 greenhouses were constructed. Agricultural training on pest and disease control, fertilization, growing of tomatoes, cucumbers, greens, and cultivation of seedlings was conducted for programme participants. During the year, US$34,071 out of total budget US$171,255 was spent.

Expansion of economic opportunities programme

The goal of the project implemented by “Umid” Support to Social Development Public Union, national NGO, Azerbaijan (Umid SSD) was to create a better environment for entrepreneurs to achieve sustainable business development and to support youth employment opportunities in the Kurdamir, Ujar and Agdash communities along the respective pipelines. This initiative began in October 2009 and was completed in May 2011.

Highlights for 2011 include:

- 8 entities developed their capacity to sustain, develop and manage their businesses;
- 13 business plans out of 25 business ideas were supported;
- 44 youths enhanced their business knowledge and capacity and 42 successfully graduated from the apprenticeship courses; and
- 14 youths received Jump Start Economic Project grants to set-up their own businesses.

The budget for the project is US$326,155 of which US$58,270 was spent in 2011.

Provision of community based support to dairy producers

This project, implemented by Umid SSD began in July 2010. It has been designed to expand dairy production for small and medium-sized farmers. A secondary goal is to promote regional collection centre linkages to commercial processors to enhance the sustainable development of private dairy farming households and small farmers in Azerbaijan.

Primary funding has come from the United States Agency for International Development (USAID) in conjunction with BTC and its co-venturers.

Highlights for 2011 include:

- three milk collection points were established and delivered for usage by three communities (Yevlakh Rayon/Nematabad community, Samukh Rayon/Seyidler community and Goranboy Rayon/Veyisli community); and
- 461 people, including 125 women, in the targeted communities participated in 29 training sessions on market knowledge, milking cows, milk storage, serving, keeping and rearing cattle.

The project period extended from 30 June 2011 until 29 February 2012. The project budget is US$106,835 of which US$39,998 was spent in 2011.

Community income generation and capacity building programme

This 2-year programme, being implementing by the Ganja Agribusiness Association, is designed to provide sustainable income generation and capacity building opportunities for community members involved in the agricultural sector. The programme scope includes construction of 132 greenhouses, a community bakery and 96 beekeeping set-ups and associated equipment in addition to transference of skills and knowledge required to sustainably manage these businesses and facilities. The project is also expected to open up additional markets, create new job opportunities and strengthen self-help possibilities, increase business and technical capacity among targeted beneficiaries, provide benefits to the environment including support for biodiversity, provide opportunities to reuse project components by others within the same communities as well as other communities. The programme started in November, 2011.

The project budget is US$787,629 of which US$4,974 was spent in 2011.

Supporting youth development

Economic capacity building for youth.

The goal of the project implemented by Umid SSD is to increase the capacities and revenue of community entrepreneurs and youth as well as reduce the number of social problems via sustainable and market responsive solutions. The project covers 30 communities located in 5 western districts of Azerbaijan, Goranboy, Samukh, Shamkir, Tovuz and Agstafa, along BTC/SCP and 3 communities in the Garadagh District of Baku, Umid, Sahil and Sangachal. The project will continue until April 2012.

Highlights for 2011 include:

- 219 people were involved in the apprenticeship courses;
- 20 graduates from the apprenticeship courses received Jump Start Economic Project grants to the amount of US$9,200;
- 10 business plan development training sessions were conducted for 96 apprentices;

- 3 marketing training sessions were conducted for 34 people;
- 16 safety training sessions (safety of sound environment) were conducted for 161 people;
- The establishment of waste collection points project, to the value of US$11,220, was implemented in the Sangachal settlement; and
- 17 social events were carried out.

The project budget is US$500,000 of which US$490,203 was spent in 2011.

Youth economic development project

The goal of the project, implemented by EPF, is to create economic and entrepreneurial opportunities for community members and help young people acquire leadership and entrepreneurial skills for starting their own businesses or implementing small economic projects. The program was completed in February 2011.

Five youth fund committees consisting of 10 women and 25 men were established.

The youth fund members were provided with training on topics such as: youth fund structure; values and principles; documenting and reporting; leadership and decision making; financial management and reporting; and critical thinking and organisation.

A total of 19 business plans were funded including: 5 in the cattle breeding sector (4 in Aqstafa, 1 in Goranboy); 5 in information and communication technologies (1 in Tovuz, 1 in Samukh, 1 in Shamkir, 2 in Goranboy); and 9 in the service sector (1 in Goranboy, 3 in Samukh, 3 in Shamkir, 2 in Tovuz).

The project budget is US$138,551 of which US$8,103 was spent in 2011.

Centre of Entrepreneurship for Empowering Youth

The overall goal of the project, implemented by Azerbaijan Community Development Research, Training and Resource Centre, is to set-up a special business and management unit within the Ganja Vocational Training Centre. The Centre of Entrepreneurship for Empowering Youth (CEEY) will function as this special business and management unit, reinforcing the centre's efforts to foster youth entrepreneurship.

A total of 150 students graduated the first class in accounting, cosmetology, welding, computer skills, computer repair, sewing and knitting. Participants were provided with training on: business start-up; financial management; micro-credit comprehension; business plan writing; budgeting and marketing; credit application submission; group and individual loans; agricultural lending; consultative assistance in entrepreneurship and farming; tax regulation; legal regulation on private business establishment and registration; and women in microfinance.

The project budget is US$98,845 of which US$88,959 was spent in 2011.

Supporting families with young children through increasing quality of and access to preschool school readiness programmes

The goal of the 1-year project, implemented by the Centre for Innovations in Education, was to improve the quality of preschool education at public kindergartens in selected communities and increase access to such facilities. The project ended in December 2011.

Highlights for 2011 include:

- Target communities were informed of the importance of quality education and development for young children;

- Unemployed women educators in Deller Jeyir were selected based on open competition and contracted for community-based school readiness and child development centre;
- Preschool teachers in public kindergartens and para-professionals as well as the most active parents in the communities were trained on child development, child-centred teaching methods and parenting programs to become paraprofessional caregivers and family practitioners;
- A study tour to model step-by-step kindergarten number 16 in Mingachevir was conducted for all project teachers; and
- A model of community-based preschool centre with participation of the Executive Committee and local municipality, local education department and Ministry of Education was piloted in Deller Jeyir.

The project budget is US$103,475 of which US$93,303 was spent in 2011.

6.2.2 Georgia

CDI 3 commenced in May, 2010 with CARE in Caucasus as the lead partner. The third phase of CDI will continue until the end of March 2012 with a total budget of just over US$1,865,081.

At the start of CDI 3 CARE began project implementation with two national NGOs, the Centre for Training and Consultancy and the Constanta Bank. The projects aim to support communities to implement and sustain self–help projects, thereby improving the livelihoods and opportunities for pipeline-affected communities through a partnership relationship with BTC.

The following themes were 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 BTC 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 were as following:

- Proposals for 30 infrastructure rehabilitation projects were selected and implemented by communities with 50% community contribution;
- Following training sessions provided to interested CBOs on social enterprise activities, organisational development skills, and business proposal writing; 11 social enterprises were established within the framework of CDI 3 as a part of the strategy of CBO future development;
- Following the increased demand for combined fodder from farmers, purchasing assistance has been given to farmers, with a 60% contribution required from the farmers;
- Seed producer groups were created and attracted 24 members;
- Service groups continue to provide relevant services to farmers. The main focus was livestock treatment;

- To improve marketing opportunities for farmers, projects continue to provide marketing training with 620 farmers attending training during the reporting year;
- During 2011, 275 farmers could sell their products through the various means, such as selling directly to shops, supermarkets, wholesalers or individual buyers;
- 120 potential entrepreneurs attended business management training;
- 46 start-up grants were disbursed to 33 businesses through the competitive grants process; and
- The programme supported disbursements of agricultural loans within the subsidised loan scheme. 133 agricultural loans were disbursed to farmers and farmer groups.

The farmers to market project, which commenced in 2008, was completed in July 2011. Prior to its completion, this project continued to operate within its themes, which were:

- Giving farmers increased access to agricultural product buyers (such as milk to milk processing factories) via establishing 6 consolidation centres (CC); and
- Increasing farmers' skills, knowledge and tools for improved marketing of their products.

Six agricultural CCs were established. These included:

- 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 2011 were as follows:

- 540 farmers started to use the improved knowledge on production gained through the extension and training in practise;
- 123 farmers sold the product to the CCs during the reporting year. The value of this product was equal to US$78,000;
- One agricultural product tradeshow was organised and attended by 2,500 people. 51 farmers participated and sold their products at the show; and
- Food safety training was provided to 250 farmers.

As a result of co-operation between farmers' and CCs the following product was purchased and/or produced by CCs from the pipeline farmers during 2011:

- 30kg of honey;
- Nearly 155,000L of milk;
- 62,000 chicken eggs;
- 4,700kg of cheese;
- 43,000kg of cereals; and
- 14,000kg of fodder.

6.2.3 Turkey

In 2011, two major programs have been run along the pipeline in order to foster local and regional development; *Community Investment Program (CIP)* and *Regional Development Initiative (RDI)*. BTC Turkey also drafted a strategy paper on community and regional based development activities, combining them all under Sustainable Development Initiative as of 2012.

6.2.3.1 Community Investment Program

The year of 2011 was the last implementation year for the 8 community investment projects. A total of 330 villages along the BTC Turkey route have been involved in this 8-year program. Most of the activities were concentrated in 220 of these villages based on their willingness to participate in the activities and the population density in villages.

In line with the exit strategy, each project focused on activities supporting CBOs, most of which are co-operatives, village development associations and unions established and supported by the BTC-funded CIP since 2003, that will take over the project mission in their regions.

In this context, 133 local organisations were supported in the following areas:

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

In order to manage the transition from national IPs to local partners, BTC Company provided significant support to national IPs to develop their exit strategies and annual plans to ensure smooth exits from various projects. BTC also helped IPs to develop grant management guidelines, monitoring plans and visibility and communication plans through workshops and one-on-one technical consulting during the design and implementation of projects.

In 2011, an external expert visited the project areas in order to: analyse the weaknesses and strengths of the CBOs; help IPs design capacity building activities for the CBOs; and support stakeholder engagement plans for 2011 projects. BTC also helped IPs to design capacity building support for communication and visibility of stakeholders to takeover project missions.

As a result of this strategy, almost all of the village based institutions implemented at least one project and managed to leverage over US$6,000,000 from other development institutions (primarily from government agencies) in 2011.

In addition to ongoing technical support to IPs and CBOs, BTC Turkey conducted regular monitoring visits to project regions to ensure beneficiaries' feedback was received and that projects were revised if deemed necessary.

In 2011, BTC Turkey conducted a SDI Forum and visited other countries to share lessons learned with other teams along the BTC route. In this context, Communication and External Affairs Directors from Azerbaijan, Georgia and Turkey and the BTC senior management team visited several community and regional development projects in Turkey by the end of July 2011. Turkey and Azerbaijan SDI teams are working on developed actions, which suggest transferring experience and knowledge from Turkey to Azerbaijan through creating links between IPs and other state institutions.

All projects planned their activities towards exiting from the region through transferring their mission and role to the CBOs at the end of 2011. Since there has been several activities, particularly on collecting data for monitoring and evaluation, completion of final reports is still ongoing. Five projects have been extended until the end of March 2012 and 3 projects to June 2012.

Ardahan sustainable rural development project implemented by Sustainable Rural and Urban Development Association SURKAL

The Ardahan project had two key objectives for 2011; improving the institutional and operational capacity of local organizations to take over the project mission as well as strengthening co-operation with local authorities in husbandry activities.

Highlights for 2011 include:

- Damal and Haskoy Agricultural Development Co-operatives (ADC) having 288 members in total increased their milk collecting capacity to 900t and their cash capital to US$340,000 in 2011.
- Ardahan Beekeepers Union has been improving its institutional capacity and widening its services to its members. The future strategy of the Union was discussed and determined with the support of BTC. The second World Bee Day was organised in Ardahan with the participation of 400 beekeepers, representatives from the Beekeepers Union Headquarters and local authorities as well as experts from BTC Georgia CIP and IPs. This forum helped local and national stakeholders to understand the significant potential for beekeeping in Ardahan province as well as some of the obstacles and actions needs to be undertaken to improve beekeeping in the region; and
- The protocol with the Provincial Directorate of Agriculture has been signed to run activities in the fight against foot and mouth disease. To date, 23,000 barns have started to be disinfected in 227 villages.

Kars sustainable rural development project implemented by SURKAL

In line with the exit strategy, the project team has supported and provided consultancy to Kars CBU, worked collaboratively with the District Directorates of Agriculture and increased technical capacity of intermediaries.

Highlights for 2011 include:

- 25 female and 35 male intermediaries became competent at applying ex-parasite disinfection, measuring body temperature, conducting injections and conducting mastitis tests on their livestock;
- 331 more producers registered to Kars CBU and the number of union members reached to 4,531 by the end of the year. In 2011, artificial inseminations were applied to 2,871 cattle. In addition, 1,432 households benefited from fodder crop cultivation support and 49 producers received organic fodder crop cultivation certificate for 446ha area;
- A protocol was signed with the Provincial Directorate of Agriculture on combating foot and mouth disease. Approximately 20,000 barns in 162 project villages were disinfected; and
- Septicemia vaccinations were applied to approximately 10,300 animals and infection rates have decreased from 40% to 5% since 2005.

Erzurum sustainable rural development project implemented by Atatürk University

The Erzurum project commenced in June 2003 with the objectives of improving agricultural production and animal husbandry, supporting small enterprises in project villages, and developing capacity of local organizations. Most of the activities were conducted in 34 villages belonging to 7 districts in Erzurum.

Highlights for 2011 include:

- The Vegetable Producers Association (VPA) extended their vegetable farming area by 6.5ha in 4 villages. The VPA started seed production and distributed to its members which is crucial for the sustainability of this activity;
- The Erzurum CBU widened its activities in the region. It opened new branches in 2 districts reaching 4 branches along the BTC route in Erzurum province. The number of members increased by 90% and reached 11,900. The Erzurum CBU applied protective vaccinations to 20,327 cattle, treated 173 cattle and practiced 29,500 artificial inseminations in the region (1,400 of which are from milk collected villages). CBU's income increased by 50% in 2011;
- Income of the co-operatives significantly increased through systematic and strategic operation of machinery and equipment obtained through the small support fund of BTC. One of the cooperatives restructured and completely repaid its debts due to the loan they received from the Ministry of Agriculture for the milk dairying project, where another co-operative purchased a new vehicle with its own capital;
- Watermelon production was introduced to the region. Two volunteer farmers produced 93t of watermelons and generated approximately US$ 32,000 of income; and
- The open school programme for women continued with 13 enrolled students. This activity has been transferred to the District Directorate of Education in Yakutiye who committed to provide similar support to young women in the future. In addition, 10 young women received computer literacy certificates from the Alvar Computer Classroom established with the support of the project.

Erzincan-Gümüşhane sustainable rural development project implemented by PAR Consultancy

In 2011, the project has focused on strengthening the technical, financial and managerial capacity of the co-operatives through supporting their main activities. The outcomes are:

- Erkadin Women's Co-operative has become a women's centre in the district. In 2011, 24 women completed a confection course organised in collaboration with the Employment Organization of Turkey;
- 3 ADCs were supported in fodder crop production. They sold 88.5t of fodder to their members and ground 130t of grain for 147 farmers;
- Yurtbasi ADC was supported in purchasing an additional milk boiler, a butter weighing machine, a vacuum packaging machine and a dry scalding machine. The co-operative is now able to process an additional 3t of milk per day and has increased its sales;
- Balıklı, Çaykent, Verimli and Yeşilyaka ADC management was supported in organising milk collection and animal shelter rehabilitation programs in their villages. A total of 102 producers have been included in the milk collection system whereas 16 households benefited from the soft loans provided under the animal rehabilitation program of the 4 ADCs; and
- 39 young people participated in vocational training as machine operators and received a certificate from the District Public Education Centre. Most of the students have been employed with mining companies in the region.

Sivas sustainable rural development project implemented by SURKAL

The Sivas project, launched in 2004, has focused its 2011 activities on promoting greenhouse and organic production to increase household income in 24 villages.

Highlights for 2011 include:

- The total area of greenhouse production increased from 12,500m² to 20,800m² of which 7,000m² is managed by women;
- The Ulaş Development Association (UKDER), has become capable of taking over the project's mission for undercover and organic agricultural production with BTC's financial and technical support. UKDER produced 24,000 organic and 46,000 inorganic seedlings and carried out organic cereal farming over an area of 12,000ha in Sivas with 650 producers. UKDER established a machinery park, which contains a bailing machine, a stemmer, a feed grinder and a sorting machine;
- 156 producers received strawberry seedlings along with on-the-job training and produced strawberries in a 20,000m² area; and
- High-quality fodder crop production area has been done on 1,2640ha with all seed costs met by the producers.

Kayseri sustainable rural development project implemented by PAR Consultancy

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 2011:

- The total number of orchards reached 98 within a 753ha area. The average annual income was US$1,100 per producer in 2011;
- The project team provided technical support to entrepreneurs in order for them to apply to various funding agencies. The projects were about income generation, social empowerment, increasing productivity and managing organisational capabilities. In total US$144,000 was received; and
- The Gümüşali and Karakuyu ADCs started to enlarge their service area and produced 100 and 35t of animal feed respectively. The 2 co-operatives purchased necessary machines with the financial support of the project, the Ministry of Agriculture and with their own means. The total value of Gümüşali ADC's machines is US$18,167 and Karakuyu ADC's machines is US$54,000.

Kahramanmaraş sustainable rural development project implemented by PAR Consultancy

The Kahramanmaraş project makes important contributions to the development of the region in three areas: raspberry and blackberry production in Andırın, undercover vegetable production in the Göksun District and development of a cold storage depot at Andırın. The following summarises the achievements of 2011:

- 21 raspberry and blackberry producers with 49,000m² of gardens sold their products to ice cream firms and at local markets. The total harvests increased from 30t in 2010 to 54.4t in 2011 which generated income of more than US$45,000;
- 8 project-supported greenhouse vegetable producers harvested 39.5t of cucumbers and 7.35t of tomatoes. The income gained from each unit area increased 28%; and
- Andırın Cherry Producers Union was supported both technically and financially in a project to establish a 1,500t capacity cold storage facility. The project received US$250,000 of financial support from Eastern Mediterranean Development Agency DOĞAKA and an additional US$250,000 fund was created through membership fees.

Adana-Osmaniye sustainable rural development project implemented by PAR Consultancy

The project, implemented in 32 villages, has 3 components: spreading the sustainable agricultural techniques in the Çukurova region, supporting small-scale dairy cattle breeding and strengthening the income resources of the fishermen living in Gölovası village and Yumurtalık.

Highlights for 2011 include:

- The project introduced sulphur implementation for soil improvement in order to create leader farmers and model implementation areas. In the reporting period, 20 sulphur spreader machines were used by producers at project villages;
- Sustainable agricultural techniques training sessions were conducted both at the Çukurova University Faculty of Agriculture and villages with the participation of village agricultural advisors, representatives of local fertilizer sale offices, all PhD students of the faculty and farmers;
- Micro, small and medium enterprises (MSME) and institutionalisation of activities, which aims to develop a qualified labour force in the region.

6.2.3.2 Regional Development Initiative

The following projects were implemented in 2011:

Industrial symbiosis project in the Iskenderun Bay – Phase II

The project aims to initiate Industrial Symbiosis (IS) implementation in the Iskenderun Bay, as a mechanism to increase the collaboration and solidarity between companies for achieving both environmental and economical improvement in the region, and also to develop a model for a national level IS programme. The project is implemented by the Turkish Technology Development Foundation in cooperation with Industrial Synergies Limited, implementer of the National Industrial Programme of the UK and Middle East Technical University.

In 2011, activities have been carried out to identify IS opportunities in the area, to introduce the IS concept to the country and to establish a multilateral structure with national and local stakeholders.

Highlights for 2011 include:

- A kick-off meeting was held on 5 May 2011, which was hosted by the British Embassy in Ankara with the attendance of high-level bureaucrats from various Ministries, NGOs, and private companies;
- The IS concept was introduced to local and national stakeholders through introductory meetings, brochures and training materials. The project website www.endustriyelsimbiyoz.org has been established to provide continuous and updated information on IS;
- An IS network and database system has been developed to record related companies and possible IS relations. As a result of the IS development workshops, with the participation of 65 representatives from 50 companies, 400 IS opportunities were identified. The project team has initiated detailed feasibility studies on 10 pilot potential synergies, which will create significant environmental and economic gains in future;
- A detailed study was conducted on the obstacles and opportunities within Turkish legislation related to IS implementation, particularly waste exchange procedures, which will be a basis for the National IS Programme implementation model and plan;

- An Advisory Committee was established with 23 members from 20 institutions including ministries, regional development agencies, chambers of commerce and industries, international institutions, university and private sector representatives; and
- The project team visited Birmingham, UK for the exchange of experience with Industrial Synergies Limited, which manages the National IS Programme in the UK.

Ceyhan Fire and Natural Disaster Training Centre – CEYDEM Project

The CEYDEM project aims to meet capacity building needs to manage fire and natural disaster risks in terms of human resources and physical infrastructure in the heavily industrialised Ceyhan region. With this project, the fire teams of private companies and the local municipalities in the region will be trained through a certification programme to be established under the CEYDEM project.

Highlights for 2011 include:

- A partnership protocol was signed at the end of 2010 between the Çukurova University Search and Rescue Association, BIL and BTC Turkey. The project grant agreement was signed in January 2011;
- Allocation of 10ha of land by the Çukurova University for construction of the training centre;
- Having the approval of the Council of Higher Education (Turkey), Çukurova University have opened the 2-year vocational programme on civil defence and fire fighting to train firemen under the Ceyhan Vocational High School and has assigned teachers who will start training students by 2012;
- All design projects for fire and natural disaster simulations were completed by the Tekfen Engineering Company as an in-kind contribution; and
- The Çukurova University developed the tendering specification with the support of BTC's experts and completed the tendering process independently in line with national regulations. Construction of the CEYDEM will be initiated by 2012-Q2.

Employment development programme based on inter-sectoral co-operation and supporting entrepreneurship in the Çukurova Region – Phase II

As a unique example of public and private sector partnership, this project includes the co-operation of BTC, Small and Medium Enterprises Development Agency (KOSGEB), and Turkish Employment Organisation (İŞKUR), both of which are Governmental agencies for improving local businesses and human resources to become potential suppliers, service providers and employees to meet the needs of a rapidly industrialised region.

Highlights for 2011 include:

- İŞKUR Ceyhan branch office has become active with a staff of 7 and started providing training courses to individuals and companies in the region;
- 83 MSMEs attended capacity building training on business standards, quality and loans. 38 entrepreneurs were supported to establish their own businesses;
- A synergy focal point was established in the Ceyhan Chamber of Trade, which assisted the registration of 650 MSMEs into the database of KOSGEB. 83 of these MSMEs have benefited from KOSGEB's soft loans to the amount of approximately US$1,800,000;
- The career consultancy service reached 1,621 people compared with the 1,000 people planned. 594 people completed employment guaranteed/vocational courses. In total 493 people were employed by the end of 2011;

- The Continuous Training Centre which was established under the Ceyhan Chamber of Trade has organised 9 different vocational courses for local people in Ceyhan;
- Local enterprises have received US$1,500,000 in grant funds from regional development agencies with the technical support of the BTC consultants; and
- The third phase of the project has been initiated to establish Ceyhan Business Development Centre (CEYGEM), which aims to provide support for improvement of MSMEs and institutionalisation of activities, which aims to develop a qualified labour force in the region.

Credit Guarantee Fund project

This initiative is designed to support local MSMEs and entrepreneurs by providing loans to improve businesses in all provinces on BTC Turkey pipeline route. BTC signed a co-funding agreement with the Credit Guarantee Fund (CDF) of Turkey in 2008. Two national banks (Ziraat Bank and İş Bank – two of the biggest country-wide banks in Turkey) partnered with the project by providing loans with the guarantee provided by project funds. In addition, negotiations are in progress with Turkish Economy Bank to also develop partnerships to provide further loans in 2011.

This initiative is designed to support local MSMEs and entrepreneurs by providing loans to improve businesses in all provinces on BTC Turkey pipeline route. BTC signed a co-funding agreement with the CDF of Turkey in 2008 followed by 2 national banks (Ziraat Bank and İş Bank – 2 of the biggest country-wide banks in Turkey) engaging in the project. In addition, negotiations are in progress with Türkiye Ekonomi Bankası to progress project implementation. In 2011:

- A US$2,631,735 guarantee requested by 67 MSMEs was approved by the CDF and over US$3,423,841 in credit has been approved by the banks;
- All beneficiary MSMEs are from BTC pipeline regions. 87% of these MSMEs are micro, 7% small and 6% medium enterprises and all are established in small districts along the BTC route; and
- 75% of the beneficiaries are from agro-business, 9% are from manufacturing, and 16% are from the service sector.

Table 6.7: Budget of Ongoing RDI Projects

Project	Partners	BTC Grant (US$)	Partner Contribution (US$)	Total project Funds (US$)
IS implementation – Phase II	Turkish Technology Development Foundation Middle East Technical University National Industrial Symbiosis Programme (UK)	443,204	118,992	**562,196**
CEYDEM project	Çukurova University Search and Rescue Association BIL	461,600	592,500	**1,054,100**
Employment and enterprise development based on inter-sectoral co-operation in Çukurova Region – Phase II	ISKUR National SME Development Agency (KOSGEB)	1,370,000	2,032,000 (ISKUR) 1,180,440 (KOSGEB)	**4,582,440**

Project	Partners	BTC Grant (US$)	Partner Contribution (US$)	Total project Funds (US$)
CEYGEM – Phase III	ISKUR National SME Development Agency (KOSGEB) CEYGEM Limited[17]	813,840[18]	Approximately US$2,000,000 from KOSGEB and CEYGEM Limited.	**2,813,840**
Supporting the MSMEs to obtain bank credits on BTC pipeline route	CGF Turkiye Cumhuriyyeti Ziraat Bank İs Bank	2,000,000	2,000,000	**4,000,000** (x5 leverage from Banks = US$20,000,000)
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 2012

Project	Partners	BTC Grant (US$) (Tentative)	Partner Contribution (US$)	Total project Funds (US$)
Capacity building of municipalities on the pipeline route on emergency response management (fire and natural disasters)	TBD	100,000	TBD	TBD
New CIP projects	TBD through a request for proposal process	1,800,000	TBD	TBD
Building the operational capacity of the Fire and Natural Disaster Training Centre (CEYGEM-Phase 2)	Cukurova University/ AKUT	300,000	TBD	TBD

6.2.4 Community Development Initiative Expenditure 2011

CDI expenditure for the total Operations phase and for the year 2011 is summarised in Tables 6.9 and 6.10.

[17] CEYGEM Limited owned by local partners such as the Union Chambers and Commodity Exchanges of Turkey, Chamber of Commerce, Chamber of agriculture, Ceyhan Trade exchange, Ceyhan Tradesmen – Craftsman Credit and Guarantee Cooperatives and Ceyhan Municipality

[18] Approx US$300,000 was saved and trasnsfed from the employment and enterprise development based on inter-sectoral co-operation in Çukurova Region – Phase II project.

Table 6.9: Operations Phase CDI III Budget and Expenditure (US$), 2006-2011 (BTC/SCP only)

	Azerbaijan	Georgia	Turkey	TOTAL
CDI (BTC/SCP) CDI (WREP) budget	8,165,097	6,131,347[19]	14,595,000	28,891,444
Total spend to the end 2011	8,602,000	5,570,718	14,234,406	28,407,124

Table 6.10: Summary of BTC/SCP CDI Expenditure (US$) 2011

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	855,000	1,311,362	2,100,000	4,266,362,
Actual 2011	550,937[20]	1,100,211	2,099,406	3,750,554

6.2.5 Community Development Initiative Budget 2012

The BTC CDI budget for 2012 is presented in Table 6.11 below.

Table 6.11: BTC/SCP CDI Budget (US$) 2012

	Azerbaijan	Georgia	Turkey	TOTAL
Budget 2012	606,000[21]	900,000	2,100,000	3,606,000

7 ENVIRONMENTAL AND SOCIAL 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.

[19] This figure represents only BTC /SCP split, without GPC split from the following projects' budgets CIP 2 first year contract value was US$1,470,000; CIP 2 second and third year contract value is US$2,390,000. 6-month extension value is US$92,214. 3-month extension value is US$233,680. Farmers to market within 2006-2011 is US$519,288 including CIP 3 budget for 2010-2011 – US$ 2,208,258, and WREP CDI budget for 2010 – 2011, US$299,910.
[20] Actual commitment based sum.
[21] SCP spend includes capex and opex.

7.2 EXTERNAL MONITORING

7.2.1 Host Government Monitoring

7.2.1.1 Azerbaijan

In 2011, the MENR has been notified to participate in Ground/Surface Water Monitoring and visit the repaired River Crossing.

Upon completion of the visit MENR sent a formal letter requesting further involvement of MENR experts in regular erosion control work at river crossings and Karayazi ground water well monitoring. It has been agreed to follow this request by inviting MENR participation in these works.

7.2.1.2 Georgia

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

7.2.1.3 Turkey

No HGA monitoring occurred for BTC Turkey within 2011.

7.2.2 NGO Monitoring

7.2.2.1 Azerbaijan

In 2011, the Azerbaijan Social Review Commission has been involved in a review of BTC's agricultural programmes, run by the Ganja Agribusiness Association. A monitoring report, which was submitted to BTC states that "in general the programme seems to be meeting expectations and is commended and these projects are well designed and good."

7.2.2.2 Georgia

Due to limited interest from NGOs towards BTC operations in the country, formal NGO monitoring of BTC Georgia activities has stopped. However, informal activities and engagement continued in order to keep NGOs and the general public informed about BTC Georgia's operations. In November 2011, BTC Georgia took part in a forum organised by the AmCham and United Nations (UN) Global Compact Georgia network and used this opportunity to provide an update on ongoing company activities. In addition to the face-to-face engagement efforts when requested and through various forums, BTC Georgia has made its Sustainability Report available to the 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 BTC Turkey project, their experience is generally greater, so there was a lack of demand for a facilitated scheme. Notwithstanding this, BTC 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 and contractor staff through a variety of media including formal classroom training, toolbox talks, roll-out of respective environmental procedures, aspects and impacts, objectives and targets, HSE Compliance Expectations, Compliance Task Manager User Training Pack etc. based on the 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 and to incorporate changes made in environmental processes.

7.3.2 Georgia

Training for BTC operations in 2011 was focused on site-specific environmental aspects and impact management as well as pollution prevention.

Other key topics included Sewage Treatment Plant (STP) operation training provided to STP operators at PSG 1, OSRBs (Tsalka and Borjomi) and Area 80.

Training was delivered at sites as a series of formal classroom training.

7.3.3 Turkey

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

Environmental training

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

- Environmental awareness;
- Waste management (segregation, collection and storage);
- Role-specific training for drivers;
- International Standards Organisation (ISO) 14001 Environmental Management System training;
- Advanced Environmental Management System training to new HSE engineers;
- Oil spill response;
- The ECO Card System; and
- OWS documentation in BIL Document Management System (provided to CMT Tank Farm and Jetty Operators).

Basic environmental awareness training was given to all new staff by BIL. Environmental refresher training was also given to staff who were due for re-training.

In 2011, separately, the BIL environment team received training on the following topics:

- Oil spill response International Maritime Organization Level 1 training;
- Ministry of Environment and Forest EIA training;

- Ministry of Environment and Forest Environmental Permits and Licenses training; and
- ISO 14001 Lead Auditor training.

In addition, BTC Turkey held the following workshops with BIL:

- Marine monitoring evaluation workshop: conducted with the participation of the BIL environment team and technical consultants;
- Air quality workshop: held at the CMT with the participation of BTC, the BIL environment teams and the consultant; and
- WWTP operation and maintenance training was organised with the contractor and provided to relevant BIL staff on site.

Social training

BIL Public and Community Relations specialists provided training to all new employees and contractors of BIL as part of the orientation programme. In total, 79 employees were trained in 2011 on the following topics:

- Community relations (organisation and responsibilities);
- Complaints and compensation;
- Employment;
- Procurement;
- Safety (traffic and pipeline safety);
- Land use/restrictions;
- Safe life through pipeline;
- Code of conduct;
- Audits (internal and external);
- Responding to media;
- CIPs;
- Refreshment of public and community relations training;
- Communication skills; and
- In addition to training provided to employees, basic public and community relations induction training was provided to high school students at the CMT.

The total number of trained personnel at the end 2011 is summarised in Table 7.1.

Table 7.1: Summary of Social Training Programmes

Training Title	Number of BIL Staff Trained	Number of BIL Contractors Trained
Community relations (organisation and responsibilities)	523	692
Complaints and compensation	523	692
Employment	523	692
Procurement	523	692
Safety (traffic and pipeline safety)	523	692
Land use/restrictions	523	692

Training Title	Number of BIL Staff Trained	Number of BIL Contractors Trained
Code Of conduct	1	663
Audits (internal and external)	1	663
Responding to media	523	663
CIPs	523	663
Refresher of public and community relations training	63	52
Communication skills	10	-

In 2011, the BIL public and community relations team received training on the following topics:

- Land use/restrictions - awareness campaign training;
- GIS;
- Pipeline intruder system;
- Training of trainees for a school children awareness campaign by an academic from Istanbul Culture (Kültür) University; and
- Winter driving.

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

- First aid;
- Process safety;
- Legal college;
- Incident Management Team and oil spill response;
- Do more in less time;
- What is a Personal Developmental Plan and how do I write a good one;
- Personal Developmental Plan clinic;
- Effective meetings;
- BP people portal;
- Purchasing and Supply Chain Management – what do you need to know on working with Purchasing and Supply Chain Management;
- ISO 14001 Environmental Management System Internal Auditor training;
- ISO 14001 Lead Auditor training;
- Biorestoration (workshop held in Baku); and
- National environmental legal requirements.

8 PROJECT COMMUNICATION

8.1 CONSULTATION APPROACH

Consultation and communication with various BTC project stakeholders, from communities to Government organisations, was ongoing during 2011 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 2011 is provided in the following sections.

8.2 AZERBAIJAN

8.2.1 Project-Affected Communities

There were a number of community relations initiatives launched by the Azerbaijan export pipelines social team in response to various requests from project-affected communities.

In 2011, the Community Liaison Officers conducted 103 community consultation meetings with affected landowners, land users, local government and municipality officials covering a wide range of topics such as: general information about land use restrictions applied to project-affected lands, complaints management, community development projects, and waste management. Moreover, the Community Liaison Officers meet with communities, local administrations and enterprises functioning along the route at the beginning of each year to exchange information on the planned pipeline operations activities and visits.

8.2.1.1 Complaints

In 2011, 10 complaints were received from the BTC/SCP pipelines affected communities, 9 of which were closed.

Table 8.1: Summary of Complaints Received by BTC/SCP, 2011 (Azerbaijan)

Complaint Category	Complaints Received	Complaints Closed (at end of 2011)
Land use	3	2
Compensation	5	5
Access roads	1	1
Recruitment	1	1
TOTAL	**10**	**9**

8.2.2 NGOs and Technical Organisations

Regular meetings were held by the SDI team with a range of national IPs (Umid, Ganja Agribusiness Association, Centre for Innovation in Education and Azerbaijan Community Development Research, Training and Resource Centre) to discuss progress of CDIs.

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 Georgia social team continue to work with the villages and communities in the vicinity of the pipeline on a regular basis. The team maintains regular contact with village communities and engages with village trustees and informal leaders, local residents, complainants, landowners, regional Governors and Gamgebelis. Community Liaison Officers raise awareness of BTC Georgia and its activities, discuss safety issues, concerns relating to land use with respective communities. To reinforce messages about pipeline safety, a community calendar for 2012 and booklets about pipeline protection zones were developed. The community calendar also contains information about everyday HSE. These are short tips to help community residents take better care of their HSE.

A summary of the main activities conducted in 2011 is as follows:

- The social team continued working with contractors, both at management and field level, to ensure understanding and compliance with social commitments. The social team also worked closely with the PSG 2 accommodation contractor to ensure social commitments are met and adhered to by the contractor;
- In order to ensure the compliance of BTC Georgia and its contractors with the Employment and Training Management Plan (AZSPU-HSSE-PMT-00330-5) of ESAP, the social team conducted a documentation review of employment practices of the 3 main contractors. Gap analysis of the personnel sections of commercial contracts' was made for the 3 contractors;
- The social team worked with the respective technical authorities of the 4 core contractors that underwent an Employment and Training Management Plan audit in 2010 to close out recommendations made by the company as a result of the audit. All of the recommendations (56 in total) were closed-out by end of October 2011.
- The maps included in the Transport Access Procedure (AZSPU-HSSE-DOC-00027-4) were uploaded to the Dynamic Knowledge system. The procedure was also rolled-out to the target audience. The accesses were monitored through the Vehicle Driving Recorder system and any identified issues were addressed; and
- Worked with respective personnel to refine social tasks that went into the Compliance Task Manager and worked on closing out the part of tasks that were due in 2011.

8.3.1.1 Complaints

BTC Georgia continued effective management of the Third Party Complaints Procedure (AZSPU-HSSE-DOC-00057-4). Communities are aware of how they can raise grievances and Community Liaison Officers have helped them to lodge complaints when necessary. During 2011, 100 complaints were received of which 99 have been closed. The resolution of the outstanding complaint is still being resolved. Table 8.2 gives a breakdown of complaints categories. There remains 1 outstanding complaint from 2007 for which BTC has resolution plans in place.

Table 8.2: Complaints Log Statistics (as of December 2011)

Complaint category	Total Number Received	Number of Complaints Resolved	Total % of Complaints Resolved	Number of Complaints Pending Resolution
Additional land	0	0	100%	0
Land hand-back/reinstatement	2	2	100%	0
Orphan land	0	0	100%	0
Other land issues	3	3	100%	0
Access restricted/abolished	1	1	100%	0
Inventory/compensation disagreed	3	3	100%	0
Parcel ownership or size	0	0	100%	0
CBO compensation	0	0	100%	0
Community infrastructure	0	0	100%	0
Household infrastructure	88	87	98%	1
Bee-related	0	0	100%	0
Irrigation	0	0	100%	1
Cracked house	0	0	100%	0
Employment	0	0	100%	0
Other social issues	3	3	100%	0
Miscellaneous	0	0	100%	0
TOTAL	**100**	**99**	**99%**	**1**

8.3.2 National NGOs and Technical Organisations

In 2011, BTC continued to engage with national NGOs through a range of different initiatives. These initiatives are:

- The EIP
- The CDI
- Different cultural heritage initiatives

BTC also actively participates in different conferences and forums organised by the UN Global Compact Georgia Network. This creates an excellent networking opportunity with different stakeholders including NGOs, businesses and other national and international organisations.

8.3.3 Government Ministries and Departments

Close contacts were maintained with Georgian Oil and Gas Corporation, including bi-weekly meetings with 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 Government of Georgia sponsored third-party major projects in ROW.

8.3.4 Media

During 2011, various media activities took place in Georgia. These included:

- A communications plan was developed to broadly communicate the sustainability report;
- A press release was issued and interviews recorded during the close-out event of the 3-year eco-awards programme involving BP management, government, scientists, local NGOs and the media;
- A BP leaflet covering BP's activities in Georgia was distributed to major stakeholders including the media;
- A press release was issued regarding the second graduation ceremony under the project management college project;
- International publications interviewed BP Georgia's General Manager covering BP activities in Georgia;
- A press release 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 the media;
- BP Georgia's General Manager delivered a speech at the Economist Forum in Georgia covering BP's in-country activities attended by the media; and
- BP Georgia's General Manager delivered a speech at the Georgian International Oil, Gas, Infrastructure & Energy conference covering BP's activities and future plans in Georgia and the region. The conference was attended by the media.

8.3.5 Donor Organisations

BTC continued to meet with various development organisations in Georgia including the: United Nations Development Programme, USAID, World Bank, IFC, Millennium Challenge Commission Georgia and several national and international NGOs.

BTC and its co-venturers, in collaboration with a number of international organisations, continue to implement a number of projects in Georgia, including the: Energy Efficiency Project (USAID, EBRD, Organization for Security and Co-operation In Europe); Georgia Food Safety Project (IFC); English Language Programme for Media (Open Society - Georgia Foundation, British Council); Road Safety Project (USAID, Government of Netherlands); and Support to International School of Economics (Open Society - Georgia Foundation, Swedish International Development Cooperation Agency, USAID, Government of Norway).

Regular talks with donor organisations and participation in different co-ordination meetings continue with the aim of defining potential areas for future engagement.

8.4 TURKEY

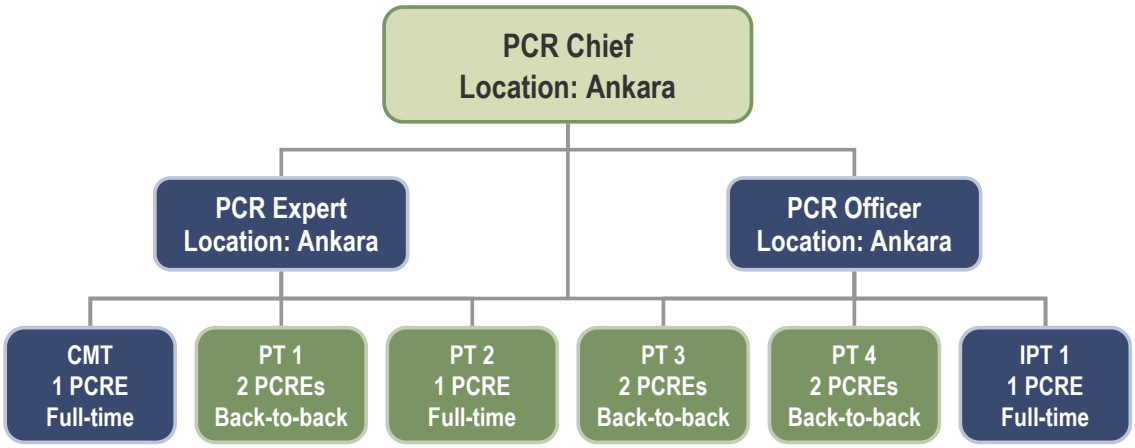
8.4.1 Consultation

8.4.1.1 BIL

BIL made structural changes in their Public and Community Relations (PCR) team during 2011. Three new Public and Community Relations Experts (PCREs) were recruited in October 2011.

Recruitment of the new site personnel, and a change in working conditions to full-time, largely solved the issue of coverage of PCR representatives along the pipeline. With this new structure, PT 2, PT 1 and CMT site representatives have started to work full–time, while the back-to-back structure has been ongoing in PT 1, PT 3 and PT 4 (refer to Figure 8.1). The new organisational structure has enabled more effective management of community relations issues during 2011.

Figure 8.1: BIL Public and Community Relations Team Structure 2011



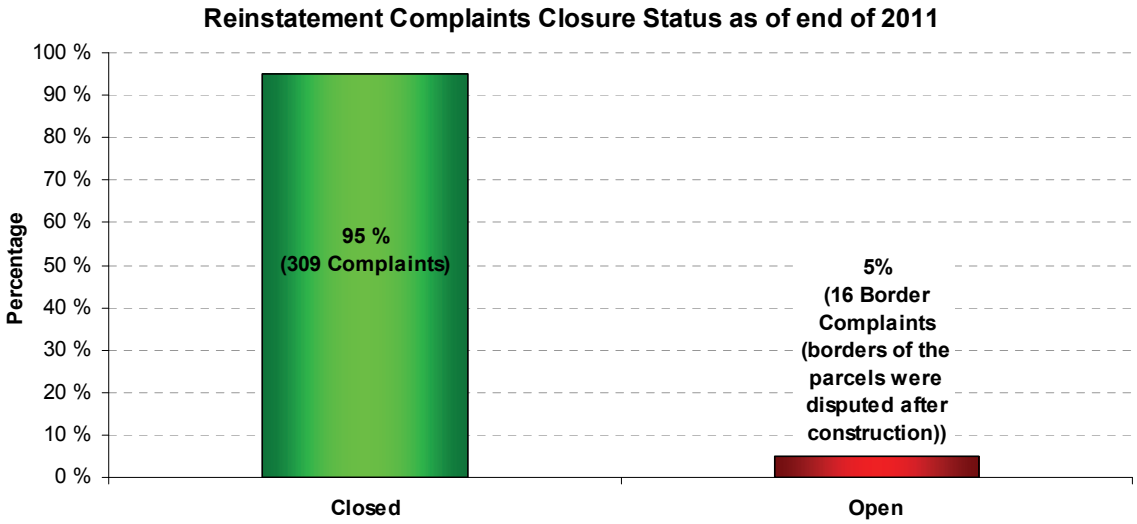
Two workshops were organised in January and December 2011 by BTC to increase co-ordination and co-operation between the PCREs working in different regions; exchange experiences between the PCREs; discuss ongoing issues and agree on priority actions. The first workshop, held in January 2011, aimed at training PCREs on awareness campaigns about land use restrictions, use of materials, methodology and planning; as well as supporting them to understand the use of GIS, which is critical for implementation and monitoring of land use violations. The second workshop and training session was held in December 2011 to review all activities, Key Performance Indicators (KPI) and field based information in 2011. The train-the-trainer session, aimed at building the capacity of PCREs who will deliver the awareness-raising training sessions to school children in all schools on the pipeline corridor, was also completed in a work group, led by an academic from Istanbul Kultur University.

The main highlights of the activities conducted in 2011 are as follows:

Resolution of ongoing reinstatement complaints: As outlined in previous reporting periods, a comprehensive field survey was conducted by BTC Turkey in 2008 and 2009 for resolution of complaints raised by land owners/users related to reinstatement issues occurring 2 years after completion of construction and reinstatement activities in 2006 along the Turkish section of the BTC pipeline. The purpose of the study was to minimise the project footprint by closing legitimate reinstatement complaints as committed. A field survey was carried out in 300 villages along the pipeline in 2008 and 2009 to collect data and explore the legitimacy of complaints. The study was conducted by reinstatement and community relations experts and was planned and executed in close co-ordination with the designated operator. In total, 500 complaints were registered, 423 of which were related to reinstatement. Of the complaints registered, 325 (65%) were identified as legitimate and 175 (35%) were classified as not legitimate during the evaluation meeting conducted with the participation of BIL PCREs, BOTAŞ Designated State Authority (DSA), the BTC Turkey environment team and reinstatement experts (as BTC's consultant). The items considered as not legitimate were mainly related to where BOTAŞ Natural Gas Pipeline passes parallel to the BTC pipeline for approximately 300km and road damages, which were not related to BTC directly.

The first phase of the field study was implemented in 2009. The second phase commenced in 2010 and was completed in June 2011. Necessary documents consisted of a land entry protocol, land exit protocol, crop compensation payment receipt (if applicable), stone disposal protocol (if applicable), stone disposal payment receipt (if applicable), photographic evidence, complaint closure form and ROW register. Relevant documentation was signed by all parties, including the complainant, Mukhtar, BIL PCRT and BTC Turkey site representatives, in order to officially close the complaints. Current closure status is given in Figure 8.2.

Figure 8.2: Complaint Closure Status



BTC Turkey 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 any risks related to erosion, geo-hazards and the like, in line with ESIA and RAP requirements.

Awareness campaign on land use restrictions: As a result of the assessments done in 2010, visual materials were produced for the 'Safe Life along the Pipeline' awareness campaign and training sessions commenced in the field in January 2011. The main objective of this campaign was to train land owners/users and local authorities, including security forces, on the land use restrictions, legal permits required for third-party crossing projects, the permit process for use of the ROW, H&S rules, emergency action plans and expectations from local stakeholders in case of an emergency situation and finally the complaints management process.

The first part of the training sessions targeted land users and owners in all affected villages, local authorities, relevant public and private institutions and also security departments. While the second part of the awareness-raising program was planned for school children along the pipeline route.

By end 2011, meetings were conducted in 242 villages; 59 training sessions were held with local authorities and stakeholders; and 58 meetings were held with the Gendarmerie teams responsible for protection of the BTC pipeline (as shown in Table 8.4.1). During the training sessions, an instructive movie was shown and information brochures and posters for land owners/users and local authorities were distributed to refresh them on land use restrictions, third-party crossing and emergency response messages.

Table 8.4.1: Community Awareness Meetings (as of 31 December 2011)

AREAS		VILLAGES		GENDARMERIE		PUBLIC INS.	
	KP	Number of meetings	Number of attendees	Number of meetings	Number of attendees	Number of meetings	Number of attendees
1	0 to 166	40	790	8	114	7	91
2	166 to 376	66	1,016	9	120	26	308
3	376 to 575	28	345	11	251	7	94
4	575 to 774	36	460	18	281	11	168
5	774 to 957	37	643	6	56	2	24
6	957 to 1076	35	724	6	108	6	70
	TOTAL	**242**	**3,978**	**58**	**930**	**59**	**755**

Table 8.4.2: Community Awareness Meetings per Village Risk Level (as of 31 December 2011)

Village Risk Categories	Number of Villages	Number of Trained Villages	Number of Trained Population	Percentage (%)
First Risk Level: PT or BVT affected villages	71	58	979	81,69
Second Risk Level: Proximity of less than 1km to pipeline or AGI	121	95	1,583	78,51
Third Risk Level: Proximity of more than 1km, less than 2km to pipeline or AGI	73	49	831	67,12
Fourth Risk Level: Proximity of more than 2km to pipeline or AGI but BTC pipeline passes to the village parcel plot	51	31	438	60,78
Fifth Risk Level: Traffic or ENH affected	15	9	147	60
TOTAL	**331**	**242**	**3,978**	**73,11**

Management of third-party violations on the ROW: In order to close-out third-party violations identified along the ROW, an action plan was developed and implemented by BIL during 2010 and 2011. As part of this action plan, BIL prioritised the high risk and important areas and made these the primary focus for close-out.

As a result of the action plan, 77.6% of land use violations cases were closed, 18.4% of them are pending and 4% are still open, due to be closed in 2012.

As shown in Figure 8.3, one-third of the violations have occurred as a result of third-parties crossing projects which have been observed on site and confirmed by BIL and BTC during the field visits. In addition, 30% of violations related to plantations and 18% related to digging or channel works during agricultural activities, mostly in the southern section of the pipeline where intense agriculture is undertaken.

In 2011, recorded land use violations increased by only 104, when compared to 2010 figures, all of which are categorized as of low importance. This shows that, compared to the previous year, the annual increase rate has decreased by 73% in 2011.

Awareness training campaigns have had a positive effect on the third-party crossing formal application process and has also resulted in more care being taken on land usage along the pipeline route. The dramatic decrease in land use violations in 2011 is presented in Table 8.4.3 below.

Figure 8.3: Land Use Violation Categorisation

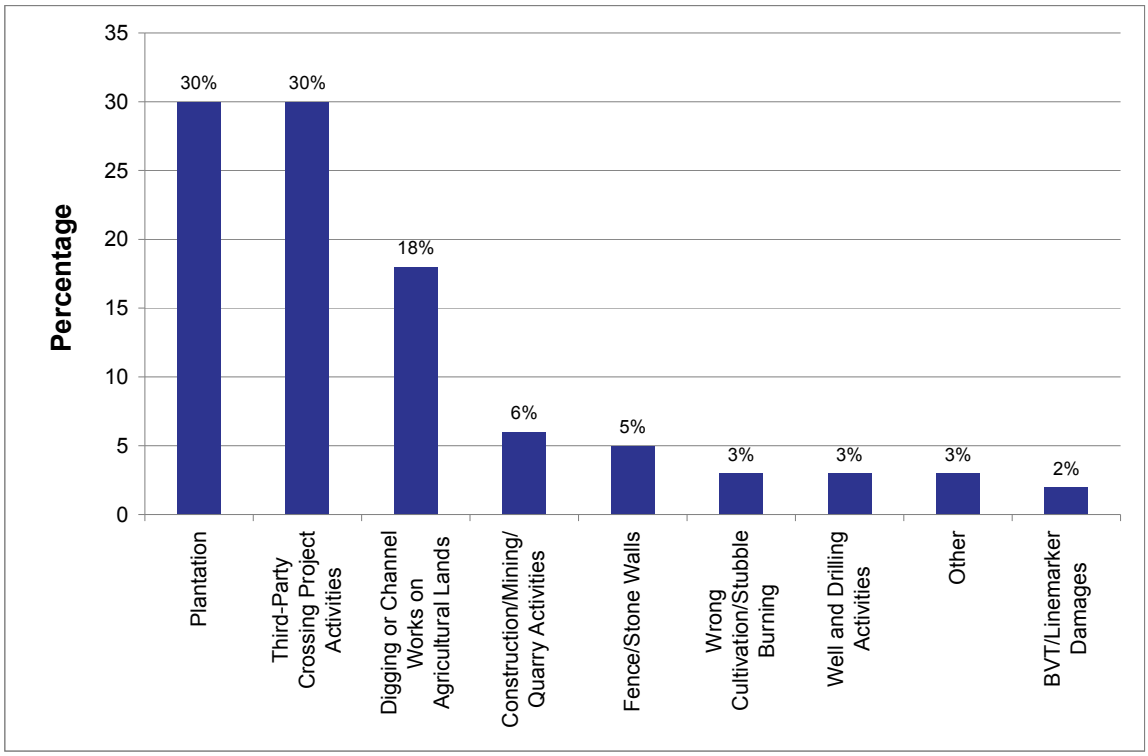


Table 8.4.3: Total Number of Land Use Violations (2009 to 2011)

Year	Total Number of Land Use Violations	Yearly increase
2009 (June)	276	276
2010 (December)	651	375
2011 (December)	755	104

Social compliance review by BTC Turkey: The BTC Turkey Corporate Social Responsibility (CSR) team visited BIL PCREs onsite to monitor the activities and social requirements of the operations phase and conducted interviews with BIL PCREs, affected villagers and other local stakeholders in July 2011. The review addressed all social requirements agreed in the ESAP and RAP. The geographical scope of the review included all major AGIs and a selection of affected villages along the pipeline route.

According to the review findings, it was noticed that reinstatement complaints decreased and were closed in most of the region. Repeated reinstatement problems were again reviewed with third-party experts to identify the core problems, especially in the Ardahan region. Related actions will be defined and complaints closed in 2012.

The BTC Turkey CSR team closely monitored the relationship with communities around the PTs and on the pipeline route through direct site visits to the villages either with PCREs or with community investment IPs.

A web-based integrated public and community management system was initiated by BIL, which will help them to record the activities more efficiently.

In this context, an internal pre-Lender social compliance review was conducted by BTC Turkey at the CMT, IPT 1, PT 4 and PT 3 villages (of Sivas Boğazdere, Akpınar, Karayün, Taşlıhöyük, Paşaköy, Kahramanmaraş Çağlayan, Tahirbey, Yiricek, Adana Hamdilli, Erenler, Sarımazı and Erzincan Şahverdi).

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

Several issues have been raised due to a change of the catering company who employ 64 local employees. These local employees were transferred to the new companies selected through a tendering process by BIL. There were several complaints with regard to the compensation payments from their previous companies, which are not yet resolved. The issue is at court and BIL has not been involved in this conflict between its service providers and their employees.

Goodwill gestures by BIL PCREs: In addition to a very comprehensive CIP managed by BTC in over 300 communities, the BIL PCR team have supported renewal and modification activities of 2 schools in Ceyhan as goodwill gestures with the support of operation teams.

Resolution of provisional recommendations from the RAP close-out audit by the Social and Resettlement Action Plan (SRAP) Panel: As described in the 2010 Annual E&S Report, the RAP completion audit quantitative survey was completed in approximately 60 villages in Turkey in February 2009 and the qualitative survey completed in September 2009.

Close-out audit provisional recommendations received from the SRAP Panel in June 2010 were investigated with the communities and resolved. Actions with regard to recommendations were taken and closed immediately. Status updates were provided to the SRAP Panel in 2010 and 2011.

At the time of writing this report, the final assessment report from the SRAP Panel was not available.

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 land owners on land use restrictions and to resolve reinstatement complaints along the pipeline route.

In addition to regular meetings in 2011, within the scope of the awareness campaign, meetings were held in villages with related local authorities, public institutions and security departments.

In total, 961 meetings with communities and other local stakeholders were organised by PCREs during 2011 with the attendance of 5,563 people. A breakdown of the meetings held by BIL in 2011 is presented in Table 8.4.4. These figures do not include consultation meetings with affected villagers conducted by BTC Turkey and by its IPs for CIP and RDI related issues.

More than 5,500 training videos and pamphlets, which include information on land use restrictions, emergency response, security, venue for grievance log, and the like, were distributed again to all villages and other local stakeholders such as sub-governors, mayors and state officers by PCREs during these training sessions.

Table 8.4.4: BIL Community Meetings, 2011

BIL Community Meetings	Number of Village Meetings	Regional Stakeholder Meetings
Community awareness and consultation meeting	242	59 with local authorities and 58 with Gendarme
Regular meetings (follow-up to introductory meetings)	217	297
Third-party crossings*	15	97
Hot tap consultation meetings/ROW security	4	3
Other (holiday courtesy visits; response to particular issues, etc.) evaluation meetings with BTC Turkey	17	10
TOTAL	**495**	**466**

* 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 Stakeholder Meetings

The BIL PCR department continued to host official visitors, mainly at the CMT and other AGIs, including country representatives, government officials, media and NGO representatives in 2011. Briefings were provided about various aspects of the operation of the BTC pipeline. A breakdown of official visitors is presented in Table 8.4.5.

Table 8.4.5: BIL Official Visitors

Official Visitors to CMT and other AGIs			
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
2011	**109**	**14**	**123**
Total	**1,184**	**388**	**1,572**

8.4.2 Complaints Management

During 2011, 43 new complaints were received, as shown in Table 8.4.6.

At the end of 2011, 66 complaints remained open, 39 of which are related to reinstatement issues, as shown in Table 8.4.7.

The tendering process for the Lot C reinstatement scope was completed at the end of 2010 and, due to weather conditions, some of the issues were postponed to the first half of 2011. Complaint close-out forms were signed in 2011 after the completion of reinstatement works at site.

In 2011, most of the newly registered complaints were related to operational issues such as damage to property, crops and land during reinstatement, enhancement and hot tap repair works.

As shown in Table 8.4.6, there is a significant reduction in the number of new complaints received in 2011 compared to the last 3 years.

Table 8.4.6: Total Number and Category of Operation Complaints Received in 2011

Subject	2008	2009	2010	2011
Employment	7	0	3	3
Reinstatement*	390	58	10	14
Access to land and other resources	2	0	0	-
Damage to property, crops and land	20	4	8	8
Damage to infrastructure and community assets**	77	7	2	12
Dust and noise	0	1	0	1
Payment/payment to service provider	22	14	25	1
Local procurement	1	0	0	-
Outstanding expropriation payments	17	2	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 (third-party crossing – Use of local resources)	2	1	1	2
TOTAL	**546**	**89**	**53**	**43**

* Includes reinstatement, biorestoration, border, grading, riprap, soil, transportation and stone complaints.

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

Table 8.4.7: Open Complaints as at 31 December 2011 (Cumulative)

Subject	2011	Action Plan
Reinstatement	**39**	13 border complaints (including 5 complaints identified during the 2008/2009 survey) will be carried out in spring 2012 by BIL PCREs. The delay occurred due to the fact that owners of the land were not able to be reached during site visits. 17 of these complaints are related to geo-hazard drainage study scopes and are planned to be completed in 2012. 9 of complaints are to be investigated by the BIL ROW monitoring and maintenance team for clarification and action in 2012.
Damage	**13**	During repair activities, repeated reinstatement complaints are related to a request for crop compensation. A field study and investigation for compensation will be completed in 2012.
Damage to infrastructure	**9**	3 related to trees planted in village common land around PT 1. The consultation meetings were held with the complainant and the issue is closed verbally, however formal close-out has not yet been completed. 6 are related to damage to roads that occurred after repair activities of subcontractors of BTC Turkey.
Dust and noise	**1**	BIL has contacted the Provincial Private Administration of Kahramanmaraş to ask them to improve the road.

Subject	2011	Action Plan
Payment	**2**	One parcel has been used as a car park area at PT 3. The land owner could not be reached to sign closure. One complaint was raised by petition from Çadırkaya-Erzincan about a traffic accident, which occurred during the construction phase. Related documents should be gathered from the BOTAŞ Project Directorate.
Recruitment	**1**	One of the ex-employees 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 rip-rap in 2010 and villagers are now asking for the stones back. This complaint will be resolved as part of the reinstatement scope.
TOTAL	**66**	

8.4.3 BTC

8.4.3.1 Consultation Activities with Government, NGOs and other Donor Institutions

BTC undertook various stakeholder meetings as part of its assurance role in Turkey. Although the majority of the meetings were related to projects implemented under the SDI (EIP, CIP and RDI), social and environmental assurance issues were also covered by various departments in the operations team.

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

As a result of the ongoing engagement in SDIs, BTC became an active organisation in the development arena of Turkey, that is BTC is now sitting on the Advisory Board of Development Studies at the University of Ankara and on 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 on their CSR projects as well as ESIA practices.

One CIP workshop was conducted in 2011 with the participation of all CIP IPs to discuss exit preparations. The exit plan and final report templates were discussed with IP project co-ordinators. Plans for project closing meetings were finalised.

As stated in Section 8.4.2, BTC financed reinstatement of the construction and post-construction phase reinstatement issues identified by BTC E&S teams in 2008. Therefore, in every village, BTC engaged in direct dialogue with land owners/users and village leaders to ensure no remaining issues are left unresolved along the pipeline route.

An awareness campaign training workshop on land use restrictions was held in Ankara with the attendance of all BIL PCR team members.

A summary of the number of meetings and other formal communications held by BTC is presented in Table 8.4.8. The number of meetings held does not include meetings held by the IPs.

Table 8.4.8: BTC Stakeholder Meetings, 2011 (Only CSR Team)

Type of Meeting	Number of Consultations*
Donor	
Government	6
NGO	6
Private companies	9
University	2
Media	4
TOTAL	**27**

* 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

The BTC CSR team conducted several community and regional stakeholder meetings during 2011. In general, the aim of these meetings was to monitor both the impact of SDI projects implemented by national IPs in Turkey and the community relations activities undertaken by BIL.

The BTC CSR team and its external development consultants also spent approximately 160 days onsite visiting villages and local authorities to ensure SDI projects and relations with communities are managed in line with agreed plans and commitments. Each region was visited more than twice during this reporting period.

8.4.3.3 Media

BTC is managing relations with media institutions in Turkey in line with the Operating Agreement with BIL. IPs announced project accomplishments via media in the context of their communication and visibility plans. During 2011:

- SDI and EIP projects were covered in 29 national media, 47 local media, 8 regional insert, 4 national television, 3 local television and over 400 web news media outlets;
- 1 press event was organised for media representatives in Ankara regarding ongoing CSR activities in Turkey and interviews were conducted with the BTC General Manager and CSR Manager;
- Several public events (protocol signature ceremonies) were organised in the regions by SDI partners to promote achievements in BTC financed projects;
- 1 major interview was held with Yalçın Doğan, an economy columnist from one of the major national daily newspapers, Hürriyet, regarding expected outcomes of the CEYDEM fire training project, which will be built in Ceyhan, Adana;
- A launch ceremony for the IS project, hosted by the British Embassy in Ankara, was covered in both national and local media. An interview on waste recycling and the IS concept in an economy programme was released on a well known national television channel;
- 2 private articles for CDI projects were published in major national daily newspapers; one was about the Sivas Sippoyaki project in the Hürriyet newspaper; and the other one was about the Erzurum Watermelon Project in the Zaman newspaper;

- 1 detailed article for EIP Terrestrial Wildlife Rehabilitation Project at Karacabey was covered by the national daily newspaper Sabah; and
- 1 detailed article was included in the Atlas Nature Magazine covering the EIP Marine Wildlife Rehabilitation Project at Dalyan/Muğla.

9 LAND ACQUISITION AND COMPENSATION

The land acquisition, compensation, hand-back and livelihood restoration activities and processes are described in the RAP. This section of the report summarises relevant activities conducted in 2011.

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 E&S Reports, bank accounts have been established for all affected people, in all districts, except for 7 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 landowners/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 1-38 and 2-12). The main reason for this situation is the absence or unavailability of landowners/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/land 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 (Hajialili Village, Shamkir district) have elected not to sign the agreement; and
- 3 landowners have elected not to sign the land exit agreement.

9.1.2 Land Acquisition Programme for 6m Access Corridor for Interim Routine ROW Access Strategy

As part of the ESIA and RAP compliance, BTC acquired a 6m land strip alongside the ROW as some sections were used for the temporary driving of Azerbaijan Government EPPD vehicles (refer to 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 2011 the following activities were accomplished:

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

Others

Close co-operation was provided with the contractor Telco+ and BP legal department in connection with the BTC/SCP BV electrification project's land acquisition.

In total, 16 access permits for maintenance works were obtained from landowners.

9.2 GEORGIA

9.2.1 Acquisition and Compensation

As of December 2011, land acquisition in Georgia is nearly complete. To date, approximately US$11,000,000 has been paid for land acquisition and approximately US$13,000,000 has been disbursed as compensation for crop loss. Table 9.1 summarises key information regarding the acquisition, compensation and hand-back of land used.

It is noteworthy that a 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 2,782 to 3,522. An additional 2 parcels were bought.

Table 9.1: Number of Land Parcels for which Compensation has been Paid

	Private Land Parcels		High Mountain Village Land Parcels		State Leased Land Parcels	
District	**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

One of the court cases regarding land registration and titling (Naokhrebi Village) has been finalised at Tbilisi Appellate Court. The Claimants have the right to apply to the Supreme Court. No additional payments are necessary.

In addition, there are 23 absent landowners, and for all parcels, BTC has acquired Necessary ROW. However, BTC may have potential renegotiation regarding land price offers, as land market prices fluctuate.

9.2.3 Resettlement Action Plan Fund

The budget for land acquisition and RAP costs for the Georgia section of the BTC pipeline project was estimated to be US$10,800,000. The actual expenditure amounted to US$26,800,000. The major elements were: payments for permanent privately owned land acquisition (US$11,700,000); crops (US$8,300,000); and orphan Land (US$3,500,000). Total compensation in 2011 was US$71,000.

9.2.4 Land Hand-back

As of December 2011, the Akhaltsikhe camp issue is closed and the agreement with owners regarding land hand-back has been signed.

Eleven servitude agreements were registered and paid US$6,900.

The last and fifth year of crop loss monitoring was provided and 271 owners were paid for US$35,000.

One lease agreement for PSG 2 was prolonged for another 2 years and paid US$34,000.

Land exit agreements are still being signed with landowners and land users. As of December 2011, 88.5% of all land use and servitude agreements were completed. The reasons for delay in signing of land exits vary but many relate to absence of landowners (86), and changes in regulations for state registration.

9.3 TURKEY

9.3.1 Acquisition and Compensation

As of December 2011, land acquisition in Turkey is almost completed. BOTAŞ/DSA acquired 99.03% of the parcels. 98.12% of these land plots acquired by BOTAŞ/DSA were already transferred to BTC Turkey. The process is ongoing for the remaining parcels.

Land acquisition and registration process has been completed for an additional 90 parcels in 2011 and data was integrated into the GIS system of BOTAŞ/DSA.

Court cases are ongoing for 30 private parcels due to the following reasons:

- Disputed cases occurred after cadastral surveys in the regions had negative impact on the resolution of the ongoing court cases, which delayed the acquisition process;
- Due to multiple ownership and absentee owners, parties (heirs of deceased owners) cannot be defined by the court in a short period of time (ongoing Article 10 Cases);
- Servitude rights were acquired for some of the parcels by mistake, which is now being corrected as usage rights through court processes; and
- Some of the parcels were sold during the court process and therefore BOTAŞ/DSA had to initiate the court process again with the new landowners.

BTC Turkey continues to monitor the acquisition of lands described above and additional parcels required for enhancement projects and will continue to monitor this process closely.

Particular attention is given to the management of additional land take by contractors who are responsible for reinstatement and enhancement projects for the BTC pipeline. The BTC CSR team and BIL Public and Community Relations Experts are providing day-to-day support to the contractors to ensure that contractors sign land entry/exit protocols, rental agreements with the landowners/users and to ensure crop/land and assets compensation is made in line with the RAP requirements.

Table 9.2 provides an update of the status of the acquisition and compensation process as at the end of 2011.

Table 9.2: Land Acquisition and Compensation Progress (December 2011)

Indicators	Information Provided by BOTAŞ/DSA		
	Total (Number by Parcel)	Complete (Number)	Complete (%)
Overall land acquisition*	16,829	16,722	99.36
Title deed registration for private lands only	11,747	11,713	99.71
Resolution of Article 10 Cases (private lands)	7,642	7,612	99.60
Transfer or rights to land to BTC Turkey**	17,950	17,775	99.03

* 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 includes additional land take required for enhancement activities during operations phase.

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 BOTAŞ/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 Turkey prior to the acquisition of land plots.

Temporary land take needed for reinstatement and enhancement projects are managed directly by the construction contractor under the supervision of BTC Turkey and BIL social teams. BOTAŞ/DSA is involved in management of crop/land valuation studies, which is done by the district agricultural offices along the route. In case of dispute, the University of Ankara is engaged as an expert to cross-check the land/crop values provided by the district agricultural offices.

Camp Sites at Pump Stations:

Rental agreements were extended with the landowners of the parcels where camp sites are located at all pump stations by BIL until the end of 2011. Payments are made in line with the market price as determined by BOTAŞ/DSA based on district agricultural office prices.

After a long period of negotiations, the BIL Operating Agreement was amended on 25 October 2011 (Amendment 3) and as a result the Main Export Pipeline participant will assume the role of constructing permanent facilities at locations in Turkey as required. Once several condition precedents are satisfied, Amendment 3 will be effective and the Main Export Pipeline participant will start to work on the permanent facilities work scope.

PT2 Flood Mitigation Measures:

Three land plots (2 private, 1 public) at Pump Station, Turkey (PT) 2 camp site were acquired in order to construct permanent flood mitigation measures at PT 2. Two private parcels have been acquired; the remaining 1 public parcel will be acquired by early 2012.

Intermediate Pigging Station, Turkey (IPT) 1 − Security Road:

The expropriation of 16 parcels needed for the security road around IPT 1 was finalised in 2011. Only 7 title deeds are expected to be transferred to BOTAŞ in early 2012.

Geo-hazard studies and reinstatement activities:

BTC Turkey 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 Public and Community Relations Experts and rental payments were monitored by BTC Turkey staff directly.

Permanent land acquisition activities are managed by BOTAŞ/DSA in line with the HGA. BOTAŞ/DSA prepared expropriation files and submitted them to the Provincial Cadastral Directorates for their approval. BOTAŞ/DSA conducted consultation and negotiation meetings with landowners/users as well as title deed and cadastral officers in the districts in line with the RAP requirements. In cases where there is no consent

agreement or a multiple/absentee owners issue, the court process is initiated to identify the shareholders and the price for the land plots.

Land acquisition needed for the reinstatement of rip raps in Kars Selim and Osmaniye Kadirli regions have been initiated in 2011 for 10 (2 private, 8 public) and 11 (5 forest, 4 private, 2 public) parcels respectively, and will be concluded in mid-2012. All relevant public institutions such as Provincial Directorates of Forestry were consulted.

Other Land Management Activities in 2011:

The annual fees for the use of the forest parcels that have been rented for the BTC pipeline ROW have been paid in 2011 by BOTAŞ/DSA. The total amount paid for forest lands in 2011 is approximately US$200,000.

BOTAŞ/DSA, BIL and BTC Turkey work closely to manage the third-party crossing projects in Turkey. Third-party crossing projects submitted by other state institutions, such as State Hydraulic Works and Turkish High Ways, Turkish Electricity Distribution Company, etc. and private persons, are sent to BIL for their technical review and then to BOTAŞ/DSA to manage the land issues. After approval of both BIL and BOTAŞ/DSA these requests are submitted to BTC Company for their final consent. In 2011 approximately 49 third-party crossing project requests were received and managed by these three parties.

Table 9.3: Third-Party Crossing Projects in 2011

Type of Projects	Number of Cases
Road	9
Electricity	5
Telecom	12
Water line	22
Pipeline (Natural Gas Pipeline)	1
TOTAL	**49**

BOTAŞ/DSA updated its internal land tracker based on additional land take and updates on land ownership status as a result of the cadastral surveys.

Complaints about land issues were also followed up and resolved by BOTAŞ/DSA field teams in line with the Complaints and Compensation Procedure document No: BIL-PRO-HRS-GEN-001 Rev. 000.

9.3.3 Transfer of Land Rights

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

By the end of 2011, 98.12% of parcels were transferred to BTC although 99.03% of the plots are ready to be transferred to BTC Turkey BOTAŞ/DSA is waiting for all land plots to be acquired in each district before they transfer all plots to BTC in those districts. The process will continue in 2012 for the remaining parcels. The process of transfer of land rights from BOTAŞ to BTC Turkey has no impact on the communities.

9.3.4 RAP Monitoring

No external RAP monitoring activity was conducted in 2011 in Turkey. Completion of the RAP close-out audit report is awaited from the SRAP panel since 2009.

Internal RAP monitoring activities continued by BTC Turkey as described above.

10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS

The majority of targets and KPIs set at the beginning of 2011 for operations have been met. All operational activities were conducted in a safe manner without any major incident.

Operational activities were conducted across the 3 countries and safety performance has been kept at a very high level. There were no significant incidents such as, Days Away From Work Cases, major incidents or fatalities and no significant process safety-related incidents recorded in 2011.

A major organisational change initiated in 2010 was completed in 2011. 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 2011 was the closure of the 2009 S&OI remaining action items. In 2011, all recommended actions were closed, maintaining a 0 recycle and 0 overdue rate, which is an exceptional performance on actions closure.

In 2011, another major S&OR audit was conducted and results were very positive for BTC operations. The audit team has commended BTC operations for a high standard of control of work implementation, personnel competency and emergency response preparedness.

The following is a summary of the main health, safety and emergency response related activities in 2011.

Safety:

- Preparation for S&OR audit activities and hosting the S&OR audit;
- Quarterly update of the risk register and risk mitigation plans;
- Development and implementation of the 2011 annual assurance plan;
- Completion of the 2011 competency programme for site H&S Advisors (Azerbaijan and Georgia);
- Azerbaijan and Georgia contractors safety leadership forums conducted;
- Development of the Project HSE strategy, HSE plan and risk assessment;
- External control of work audit in Azerbaijan and Georgia;
- Quarterly incident trend analysis process developed and implemented;
- Main contractors audits in Azerbaijan/Georgia and Turkey;
- Incident investigation quality review in Azerbaijan and Georgia; and
- Monthly lessons learned process developed and implemented.

Driving:

- Driving improvement plan for 2011 developed and implemented;
- A number of road risk assessments for main and some access roads conducted across the 3 countries;
- Self-driving standing instruction updated and reinforced for Azerbaijan, Georgia and Turkey;
- Annual transport safety audit for BTC core contractors conducted;
- Annual Driving Safety Standard audits have been carried out in 3 countries; and
- The defensive driving training programme has been updated and a new training provider selected.

Health:

- Azerbaijan/Georgia pipelines medical emergency response strategy revised;
- Asbestos survey conducted at Azerbaijan pipelines facilities;
- Personnel skin survey completed at pipeline facilities;
- BTC Turkey health audit conducted;
- Quarterly food hygiene assessment conducted at pipeline facilities;
- Azerbaijan/Georgia pipelines 2011 health plan developed, published and closed in the health map (99%);
- A number of health campaigns/promotion programmes have been rolled-out to the pipelines operations personnel in all 3 countries. For example: summer risks, manual handling, ramadan, hearing protection, winter risks, flu prevention and world heart days;
- Azerbaijan/Georgia pipelines stray animals control management strategy revised;
- Commencement of regular alcohol testing of Azerbaijan PLNs and Georgia ROW core contractors; and
- Personnel fitness for task programme 2011 completed.

Emergency Response:

- Oil spill response capability review conducted at Azerbaijan PLNs and Georgia Operations;
- BTC Georgia helicopter workshop conducted;
- Oil spill response audit conducted for Supsa Marine Terminal;
- Development and implementation fire fighting plan for Georgia operations;
- Ministry of Emergency Response/EPPD/State Oil Company of Azerbaijan Republic/BP combined exercise conducted;
- Midstream emergency response co-ordinator workshop held;
- 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;
- Fire fighting philosophy has been developed and issued; and
- Emergency response and OSRPs updated.

A summary of H&S performance during 2010 for operations activities is presented in Table 10.1 (leading indicators) and Table 10.2 (lagging indicators).

Table 10.1: BTC Operations H&S Leading Indicators

Operations Inputs	Target	2010 Performance		2011 Performance	
		BP	BIL	BP	BIL
Behavioural observation safety system	N/A	23,215	7,701	24,031	8,585
Safety observation and conservation	N/A	5,971	42 940	3.425	950
Safety training matrix compliance	>95%	98	93	98	93

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

Operations Outputs	2010 Performance		20110 Performance	
	BP	BIL	BP	BIL
Man-hours	**2,308,313**	**2,110,508**	**2,123,048**	**2,100,715**
Fatality	0	0	0	0
Days Away From Work Cases	0	1	0	1
Recordable injury	1	1	1	4
First aid case	10	7	2	8
High potential incident	0	0	0	2
Traffic vehicle accident	3	12	9	1
Kilometres driven	**6,599,510**	**5,655,191**	**9,785054**	**5,096,737**
Near miss	66	30	88	34

BP – BP operated section of BTC (Azerbaijan and 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 11.1[22].

Table 11.1: Summary of Internal Reviews/Audits, Azerbaijan, 2011

Audit/Review	Auditor	Scope	Findings and/or Recommendations
Waste management audit	Audit team consisted of environmental advisors from Azerbaijan and Georgia Export Pipelines	Compliance with requirements for waste management processes through the BTC/SCP/WREP pipeline Azerbaijan, including IPA 1, PSA 2 and PSA 2 camp, WREP PSA 5.	No basic spill response kit in vehicles and hazardous waste transported without secondary containment. Storage requirements for hazardous and non-hazardous wastes were not followed at PSA 2. Hazardous waste bins stored on gravel without any cover (shelter, roof) to avoid high wind, direct sunlight and rain. **Good Practice:** High level of awareness by site personnel regarding waste management and related practices.
S&OR audit	Auditors from BP auditor team	Assess the compliance status of BTC (and SCP/WREP/Sangachal terminal) against the	S&OR audit identified 3 findings, related to the assessment of health risks regarding the usage of treated sewage water for irrigation (Category 3) and related to inconsistencies amongst different waste management tier procedures. Another action was related to implementation of OMS sub –element

[22] Note: these are treated separately from environmental monitoring, which is detailed elsewhere in this Report.

Audit/Review	Auditor	Scope	Findings and/or Recommendations
		Operations Management System (OMS): June 2011	7.1 Regulatory Compliance and covers both Azerbaijan and Georgia. Relevant actions were defined and are being tracked through the Tr@ction system.
Regular environmental inspections	AGT region environmental advisors	Compliance to Regulatory Compliance and Environment procedures and instructions at the IPA 1, PSA 2, BVs	Weekly and monthly environmental inspections were carried out at all AGIs throughout 2011. 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.

Table 11.2: Summary of Internal Reviews/Audits, Georgia, 2011

Audit/Review	Auditor	Scope	Findings and/or Recommendations
S&OR audit	Auditors from BP auditor's team	Assess the compliance status of BTC (and SCP/WREP/Supsa terminal) against OMS: June 2011	S&OR audit identified only 2 Compliance and Environment type findings, related to a long-term waste management risk assessment needed for the Central Waste Accumulation Area (Category 3) and to implement OMS 7.1 by midstream (Category 2B). Relevant actions were defined and are being tracked through the Tr@ction system.
Subject matter audit – Waste management	Waste subject matter expert from Georgia exports Compliance and Environment team	Assess compliance of waste management against Waste Management Procedure requirements: Jun-Jul 2011	The audit focused on checking conformance with maintaining Waste Transfer Note system. All the operation site's records were thoroughly checked, no major gaps identified.
Regular environmental site inspections	Georgia exports Compliance and Environment team	Regular environmental inspections of PSG 1 and PSG 2 and Area 80 camps and ROW	Regular environmental inspections were carried out at all AGIs and camps throughout 2011. Identified issued were tracked through inspection checklists and, where relevant, through action tracking system tools on an ongoing basis.

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, 2011

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Day-to-day field inspection (E&S assurance) and monitoring of reinstatement activities	BTC Company	Reinstate-ment contractor	Monitoring of reinstatement/ geohazard works on a daily basis by BTC Environmental and CSR teams	The reinstatement contractor was monitored by BTC's E&S staff on a full time basis. All complaints were successfully resolved in Lot A and Lot B villages as planned, with the support of BTC teams. Reinstatement works initiated in Lot C in 2010 were completed in 2011. Land exit protocols and complaint close-out forms were signed by the complainants following reinstatement actions taken.
Management of additional land needs during operations	BTC Company	BIL and BOTAŞ/ DSA	Temporary and permanent land acquisition	BTC CSR team directly managed monitoring of additional land needs during operations such as the additional permanent land needs for geohazard works. As well as rental payments for camp sites at AGIs.
Ongoing CIP and RDI technical monitoring	BTC Company	CIP and RDI IPs	CIP and RDI activities	BTC 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 SDI projects and to monitor community relations issues. Site reports were produced after each site visit and shared with relevant IP. Actions are being followed up on a monthly basis with each IP.
Pre-IEC audits and E&S compliance reviews	BTC Company Environm ent and CSR teams	BIL	Compliance with ESAP and ESIA	An internal E&S audit was conducted for BTC operations in Turkey, which included documentation review and site visits, followed by interviews with BTC, BIL and contractor personnel and villagers.

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
				During the environmental review, 11 Level I non-conformances were identified at PT 3, PT 4, IPT 1 and the CMT, of which 8 were closed in 2011 as Preventive and Corrective Action Requests were initiated by BIL as appropriate.
SDI financial audits	BTC Company	CIP IPs (grantees)	Financial compliance to grant agreements	In addition to quarterly reviews of financial reports submitted by the IPs, the BTC Finance team, together with an external finance consultant, conducted audits on all CIP and RDI projects implemented in 2011. Audit results were completed and shared with the IPs.
Purchasing and Supply Chain Management (PSCM) audit on grant projects	BP AGT region/PSCM audit team	BTC CSR team in Turkey and CIP IPs	PSCM compliance in grant projects	This was a comprehensive audit that covered all current CIP contracts ongoing since 2003 and 2004. The objective of the audit was to verify that the grants/charges, related to the referenced work, was appropriate, adequately documented and in accordance with the contract. The audit report was shared with the BTC CSR team and IPs. An action plan was developed and most of the recommended actions were closed-out by the end of 2011.
HSE compliance review	BTC Company HS&ER and C&E teams	Tekfen (Category A contractor of BTC Company)	Compliance with BTC Company Statement Of Environmental and Social Requirements (BTC-SOR-ESM-GEN-001) and BP contractor global model HSE template	This was the first HSE compliance review of Tekfen that was focused on the new BP contractor global model, HSE compliance and ISO 14001 implementation. Tekfen Ceyhan offices and site activities were reviewed and interviews were conducted with relevant contractor staff. In total, 21 non-compliances were recorded during the review, of which 85% were closed-out by the contractor during 2011. The review will be repeated in 2012.
EIP yearly technical audits for ongoing projects and financial audits for new EIP projects	BTC Company	EIP IPs	Financial compliance with grant agree-ments and identification of technical and administrative risks	Five projects went through technical audits. Three new projects went through financial audits. Improvement or mitigation actions were identified. Actions are in progress.

Table 11.4: Audits Conducted by BIL

Audit/Review	Auditee	Scope	Findings and/or Recommendations
ISO 14001 internal audit of BIL facilities	BIL AGIs	Compliance with ISO 14001	No major findings were observed. Findings evaluated and Preventive and Corrective Action Requests were initiated by BIL as appropriate.
Environmental compliance audit of third-party waste facilities	Sivas Municipality WWTPs	Compliance with BIL EMS	The facility was found to be compliant with project standards.
Environmental compliance audit of third-party waste facilities	Osmaniye Municipality WWTP	Compliance with BIL EMS	The facility was found to be compliant with project standards.

11.2 EXTERNAL REVIEWS

11.2.1 ISO 14001 Surveillance

The BTC/SCP pipelines (along with WREP) maintained certification against the international environmental management system standard ISO 14001 following a surveillance audit conducted in February 2011. The certification body was Moody International. The general outcomes of the audit are that no major gaps were identified with respect to EMS documentation and its implementation at sites. Three Corrective Action Requests were raised, mainly around contract documentation and operational control. Relevant corrective actions were uploaded and tracked through the Tr@ction system.

11.2.2 Independent Environmental Consultants

Between 11 and 24 September 2011, the IEC conducted their thirteenth post-financial visit to AGT, to monitor compliance with BTC E&S commitments. The IEC team conducted the visit as a single team covering all 3 countries.

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

As outlined in the IEC report, 2 construction-related issues remained at the time of the last field visit in July 2010:

- ROW access
- Protection of the *Iris acutiloba*

The Project maintained dialogue with the EPPD of the Azeri Government to discourage use of the ROW for their security patrols. Reinstatement has reached equilibrium with EPPD requirements for ROW access. It was recommended that the Project has exerted enough effort to resolve this situation, therefore, it is no longer considered to be a construction legacy, but rather a long-term operations issue. It was noted that there are possibilities that the EPPD will eventually adopt an alternative means to monitor the pipeline route (e.g., with remote sensing technology), but this will not be under BTC control and the issue will effectively be of little concern with the expected construction of a new pipeline along the BTC ROW as part of SCP expansion

(estimated to start in 2015). The project has not been able to successfully reinstate the *Iris acutiloba* plant along the ROW in the Gobustan Desert, but this issue has been resolved with an offset program acceptable to the IEC.

The single operations issue over the past several field visits has been non-compliant NO_x emissions from PSA 2. It has not been possible to resolve this issue with operational changes or changes to the project emissions standard. Accordingly, BTC has defined an offset program acceptable to the IEC that is in the process of being implemented.

On consideration of IEC consultants, BTC has fully entered into environmental management as part of operations.

The thirteenth post-financial audit of IEC, acting on behalf of the Lenders, was accomplished in Georgia in September 2011. The audit aimed to monitor compliance with BTC project E&S commitments against the ESAP, report any non-compliances and assign an appropriate level of importance (Level I, II or III, with III being the most significant) as well as verify closure of BTC's responses to non-compliances from previous monitoring visits.

No new non-compliances were identified during the audit. Two existing non-compliances, related to non-compliant discharge of retention pond water into the surface water environment and non-compliant NO_x emissions from turbine stacks were closed. Thus the result of having a zero non-compliances is to be considered as an outstanding outcome of the thirteenth mission.

11.2.3 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 all issues have been closed out.

SRAP Panel's report on Turkey has not been submitted yet. However initial survey findings proved that approximately 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. Those ones who raised concerns about reinstatement were also addressed through additional reinstatement works, which has been completed in 2010 and 2011 after RAP close out audit (refer to Section 8.4 for detailed information).

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

Tables of recommendations are provided in Appendix 4.

11.2.4 Azerbaijan Social Review Committee

BP continued its involvement with the Azerbaijan Social Review Commission, an independent external advisory group set up by BP to provide assurance, advice and to challenge to our social performance in Azerbaijan. In May 2011, BTC Azerbaijan hosted an Azerbaijan Social Review Commission session, which discussed a number of performance-related issues. The fifth Azerbaijan Social Review Commission report to BP, containing several recommendations, was posted on BP's public website together with our response – www.bp.com/caspian/asrc.

11.2.5 Polaris

Polaris audit did not take place in Azerbaijan, Turkey or Georgia in 2011.

11.2.6 Turkey External Reviews/Audits

Table 11.5: Audits Conducted by External Parties

Audit/ Review	Auditor	Auditee	Scope	Findings and or recommendations
ISO 14001 re-certification audits of facilities	British Standards Institute (certification body)	BIL	Compliance with ISO 14001	No major findings observed, however, some findings related to legal issues were identified, such as lack of a MARPOL facility at the CMT, WWTP improvement needs and such. Findings were evaluated and Preventive and Corrective Action Requests were initiated as appropriate.
Environmental integrated inspection audit	Ardahan Provincial Directorate of MoEU	PT 1	Compliance with national regulation	No non-compliance was recorded.
Environmental integrated inspection audit	Kars Provincial Directorate of MoEU	IPT 2	Compliance with national regulation	No non-compliance was recorded.
Environmental integrated inspection audit	Erzurum Provincial Directorate of MoEU	PT 2	Compliance with national regulation	No non-compliance was recorded.
WWTPs discharge quality audit	Adana Provincial Directorate of MoEU	CMT	Compliance with national regulation	Compliant discharge was approved.
Ship waste reception facility audit by MoEU	MoEU and Adana Provincial Directorate of MoEU	CMT	Compliance with national regulation	A finding was recorded as there was no ship waste reception facility in place at CMT. An environmental fine was incurred (refer to Section 4.1.3 for details).

APPENDIX 1

Annex J of the Construction ESAP – Outline of Project Environmental and Social Monitoring Annual Report[23]

Each Annual Report will address each of the topics listed below for BTC Company 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 PROJECTSTATE 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 COMPANY 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 COMPANY AND BOTAŞ'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

[23] 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 PROJECTSTATE 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 COMPANY 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 COMPANY 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	$\mu g/m^3$	Annual mean
SO_2	20	$\mu g/m^3$	Annual mean

PSA 2: July to August 2011

ID	Pollutant		Units
	SO_2	NO_2	
PSA 2 S3	15.8	5.4	$\mu g/m^3$
PSA 2 S5	10.3	5.9	$\mu g/m^3$
PSA 2 S6	7.7	5.7	$\mu g/m^3$
PSA 2 S7	9.3	5.3	$\mu g/m^3$
PSA 2 S8	13.8	7.8	$\mu g/m^3$

S – station

Appendix 2.1b – Stack Emissions Monitoring

Pollutant	ESAP Standard			Units
	Emission Stream Sources			
	MOL Turbines	WBH	Generators	
NOx	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

PSA 2/IPA 1:

Equipment	Date tested	Load (kWth, Speed in % and Temp°C)	Fuel	Mean stack gas concentrations				Mass Emissions			
				NOx	CO	SO_2	PM_{10}	NOx	CO	SO_2	PM_{10}
				mg/Nm^3, corrected to 15% O_2				g/h			
PSA 2 Turbine 1	30/01/12	87.3% speed	Gas	100	2724	0	5	4654	126991	0.0	289
PSA 2 Turbine 2	30/01/12	88.2% speed	Gas	98	2449	0	5	4734	118255	0.0	299
PSA 2 Turbine 3	28/11/11	88.8% speed	Gas	112	1794	19	5	5040	805031	841	278
PSA 2 Turbine 4	29/11/11	86.6% speed	Gas	86	2917	11	5	3357	114043	443	242
PSA 2 Generator A	29/11/11	43.2% kWth	Diesel	490	230	0.3	50	2195	1031	1.6	278
PSA 2 Generator B	01/12/11	41.2% kWth	Diesel	467	290	0.6	50	2200	1365	2.7	292
PSA 2 Generator C	03/02/12	49.2% kWth	Diesel	528	209	0.3	50	2195	868	1.5	258
PSA2 WBH	31/01/12	93.7 °C	Diesel	183	4	25	50	201	4	28	44
IPA 1 Generator A	20/11/11	33.5% kWth	Diesel	1791	83	0	50	1653	76	0.0	57
IPA 1 Generator B	20/11/11	41.6% kWth	Diesel	644	179	0	50	591	164	0.0	57

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

Appendix 2.1c – Environmental Noise

	Standard	Units	Period
PSA 2 and IPA 1 and BVs	55	dB (A)	Day time
	45	dB (A)	Night time

PSA 2:

ID	Readings	Units	Date	Duration	Comments
PSA 2 NM 1p	38	dB (A)	Nov-2011	5 min	Day time
PSA 2 NM 2p	40.7	dB (A)	Nov-2011	5 min	Day time

NM – noise monitoring

IPA 1:

ID	Readings	Units	Date	Duration	Comments
NM 1p	36.4	dB (A)	Nov-2011	5 min	Day time
NM 2p	39.2	dB (A)	Nov-2011	5 min	Day time
NM 3p	41	dB (A)	Nov-2011	5 min	Day time

Block Valves:

ID	Readings	Units	Date	Duration	Comments
AB-4 NM 1p	38.3	dB(A)	Nov-2011	5 min	Day time
AB-7 NM 1p	51.8	dB(A)	Nov-2011	5 min	Day time
AB-10 NM 1p	39.1	dB (A)	Nov-2011	5 min	Day time
AB-11 NM 1p	37.8	dB(A)	Nov-2011	5min	Day time
AB-13 NM 1p	39	dB(A)	Nov-2011	5 min	Day time
AB-14 NM 1p	38.5	dB (A)	Nov-2011	5 min	Day time
AB-14 NM 2p	40.5	dB (A)	Nov-2011	5 min	Day time

AB – Azerbaijan Block Valve

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 (N)	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, 2011											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total coliform bacteria	per 100 ml	103	263	86	77	21	70	21	52	116	170	90	95
pH	-	7.7	7.5	8	7.6	8	7.7	7.7	7.6	7.6	7.5	7.7	8.3
Total residual chlorine	mg/l	0.02	0.03	0.05	<0.02	0.04	<0.02	0.02	0.02	0.03	0.05	<0.02	<0.02
COD	mg/l	28	26	53	52	43	53	54	50	41	29	24	22
Total suspended solids	mg/l	3	3	8	3	4	5	6	9	9	3	2	3
Ammonia	mg/l	0.25	0.2	0.56	0.45	0.17	0.14	0.75	0.62	0.35	0.31	0.75	0.07
Total N	mg/l	11	12	2.2	2.1	2.1	1.3	0.6	1.2	2.4	3.6	3.6	5.1
Turbidity	FNU	4.82	3.97	6.85	5.54	4.96	19.3	13.6	11.5	11.3	1.11	0.69	1.17
Conductivity	mS/cm	0.6	0.48	2.31	1.1	2.17	2.79	3.58	2.96	1.69	1.78	1.94	3.77
BOD	mg/l			40			8			15			5
Phenols	mg/l			0.003			0.004			0.004			0.002
Total phosphorus	mg/l			8.4			1.9			7.9			1.7
Sulphides	mg/l			0.008			<0.005			<0.005			<0.005
Oil and grease	mg/l			<5			<5			<5			<5
Ag	mg/l			<0.001			<0.001			<0.001			0.001
As	mg/l			0.006			<0.003			0.011			0.008
Cd	mg/l			<0.001			<0.001			<0.001			<0.001
Cr (total)	mg/l			<0.0013			<0.001			0.0037			<0.001
Cu	mg/l			<0.003			<0.003			<0.003			<0.003
Fe	mg/l			0.087			0.015			0.043			0.009
Pb	mg/l			<0.003			<0.003			<0.003			<0.003
Hg	mg/l			<0.002			<0.02			<0.001			0.0001
Ni	mg/l			0.0094			<0.003			0.009			0.007
Se	mg/l			<0.008			<0.008			<0.008			<0.008
Zn	mg/l			<0.0022			<0.001			<0.004			0.004

Appendix 2.1e – Groundwater and Surface Water Monitoring Programme

Groundwater Monitoring – Karayazi and Around PSA 2

Date of sampling		May 2011									
Parameter	Unit	Kar M1	Kar M2	Kar M3	Kar M5	Kar M6	Kar M7	Kar M8	Kar M10	PSA 2	
										Aran	Yaldili
pH	-	No water	7.4	7.3	7.6	No water	7.5	7.5	7.2	7.8	8.8
Temperature	°C		15.8	18	18		14	14	14	25	24
Conductivity	mS/cm		4.47	3.1	9.4		1.9	3.4	11.7	2	0.53
Total hydrocarbon (THC)	µg/L		<20	<20	<20		<20	<20	<20	<20	<20
Polyaromatic hydrocarbons (PAH)	µg/L		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01
Benzene, Toluene, Ethyl Benzene and Xylene (BTEX)	µg/L		<0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02

Date of Sampling		Nov 2011									
Parameter	Unit	Kar M1	Kar M2	Kar M3	Kar M5	Kar M6	Kar M7	Kar M8	Kar M10	PSA 2	
										Aran	Yaldili
pH	-	No water	6.8	6.7	6.8	No water	No water	6.8	6.7	7.8	8.7
Temperature	°C		15	15	18			15	16	24	22
Conductivity	mS/cm		4.55	3.0	9.3			3.4	1.1	2	0.58
THC	µg/L		<20	<20	<20			<20	<20	<20	<20
PAH	µg/L		<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01
BTEX	µg/L		<0.2	<0.2	<0.2			<0.2	<0.2	<0.2	<0.2

M – monitoring

Surface Water Monitoring PSA 2

Date of Sampling		May 2011		Nov 2011	
Parameter	Unit	Upstream	Downstream	Upstream	Downstream
pH	-				
TPH	µg/L	7.2	7.3	8.1	7.9
PAH (sum of 16)	µg/L	<20	<20	<20	<20
Benzene	µg/L	<0.03	<0.03	<0.03	<0.03
Toluene	µg/L	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/L	<0.1	<0.1	<0.1	<0.1
o-Xylenes	µg/L	<0.02	<0.02	<0.02	<0.02

Surface Water Monitoring IPA 1

Date of Sampling		May 2011		Nov 2011	
Parameter	Unit	Upstream	Downstream	Upstream	Downstream
pH	-	7.9	7.7	7.8	8.3
TPH	µg/L	<20	<20	<20	<20
PAH (sum of 4)	µg/L	<0.01	<0.01	<0.01	0.01
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

Appendix 2.1f – Waste

BTC Waste Volumes: Summary, 2011

Main Waste Streams	Unit	Value
Oily solid waste (oily rags, filters, absorbents, polyethylene)	tonne	5.83
Oily water	tonne	50.42
Oil and diesel (used)	tonne	0.6
Sewage wastes (raw)	m^3	1751.99
Sewage sludge	m^3	Included into sewage water
General	tonne	65.19
Antifreeze	tonne	Included into chemicals
Chemicals	tonne	0.11
Wax	tonne	0.1
Fluorescent tubes	tonne	0.15
Insulation material	tonne	Included into non-recyclable domestic waste
Construction waste	tonne	Included into non-recyclable domestic waste
Aerosol cans	tonne	0.007
Non-recyclable domestic wastes	tonne	72
Paper	tonne	2.039
Plastic	tonne	2.56
Wood	tonne	7.6
Metal	tonne	9.03

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 2011 due to the system running on natural gas

2011 annual monitoring results for NOx, SOx and Benzene (µg/m^3)

ID	NOx	SOx	Benzene
PSG 1-1	4.2	7.0	0.55
PSG 1-2	5.1	12.7	0.4
PSG 1-3	3.8	8.0	0.65
PSG 1-4	6.0	7.0	0.55
PSG 1-5	5.3	6.1	0.5
PSG 2-1	1.7	5.5	0.55
PSG 2-2	2.4	4.3	0.7
PSG 2-3	3.6	6.0	0.5
PSG 2-4	2.6	6.5	0.8
PSG 2-5	3.1	5.3	0.55
Area 80-1	3.1	4.6	0.15
Area 80-2	2.6	5.0	0.25
Area 80-3	1.3	6.1	0.25
Area 80-4	1.8	7.2	0.25
Area 80-5	3.2	5.8	0.25
Trip blank	<0.5	<1.0	<0.1

Appendix 2.2b – Stack Emissions

2011 Annual monitoring results

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	15/11/11	89%	125.05	1691.18	0.00	3.64	75	N/A	35	5
MOL Turbine 2	15/11/11	89%	129.00	1892.34	0.00	3.59	75	N/A	35	5
MOL Turbine 3	12/12/11	89%	120.87	1404.09	0.00	3.70	75	N/A	35	5
MOL Turbine 4	16/11/11	88%	113.82	1898.34	0.00	3.58	75	N/A	35	5
MOL Turbine 5	16/11/11	89%	125.01	1375.56	0.00	3.65	75	N/A	35	5
Generator 1	14/11/11	48%	438.35	253.08	8.60	36.49	2,000	650	1,700	130
Generator 2	14/11/11	45%	620.29	117.45	0.49	36.27	2,000	650	1,700	130
Generator 3	14/11/11	45%	547.34	131.84	0.00	36.78	2,000	650	1,700	130
WBH	17/11/11	30%	144.74	0.00	61.23	30.00	460	N/A	1,000	100

Equipment	Date	Load	Concentration at reference conditions				ESAP Standards			
			NOx	CO	SO_2	PM	NOx	CO	SO_2	PM
			mg/m³				*mg/m³*			
PSG2										
MOL Turbine 1	29/11/11	89%	123.52	1,213.80	0.00	3.71	75	N/A	35	5
MOL Turbine 2	29/11/11	89%	60.88	1,494.75	0.00	3.63	75	N/A	35	5
MOL Turbine 3	30/11/11	89%	113.66	2,135.57	0.00	3.61	75	N/A	35	5
MOL Turbine 4	30/11/11	88%	126.18	1,325.11	0.00	3.60	75	N/A	35	5
MOL Turbine 5	30/11/11	89%	127.82	1,116.40	0.00	3.67	75	N/A	35	5
Generator 1*							2,000	650	1,700	130
Generator 2	28/11/11	45%	1,090.09	65.47	20.17	37.08	2,000	650	1,700	130
Generator 3	28/11/11	45%	560.08	153.60	30.91	36.79	2,000	650	1,700	130
WBH	01/12/11	30%	206.13	41.06	44.42	28.34	460	N/A	1,000	100

* Equipment failed to turn on

Appendix 2.2c – Environmental Noise

Location type	Georgia	Project Specifications
Residential, Institutional, Educational	55 dB(A) – day time 45 dB(A) – night time	55 dB(A) – day time 45 dB(A) – night time
Industrial, Commercial	65 dB(A) – day time 55 dB(A) – night time	70 dB(A) – day time 70 dB(A) – night time

2011 Environmental noise monitoring results

Sampling point	GPS coordinates	Date and time	Measurement	Comments
PSG1 NMP1 (including PSG 1 camp, PSG 1 OSRB)	8513308 4590138	01.11.11 13:12-13:27	Leq – 52.1 Lmax – 78.5 Lmin – 26.1 L90 – 29.1	South east wind 1.5m/s 15ºC sunny Site noise was not audible. Background noise: birds, people, cars
PSG2 NMP1	8450375 4602555	01.11.11 15:11-15:26	Leq – 53.2 Lmax – 58.9 Lmin – 48.1 L90 – 50.2	Monitoring point is located 20m south from site wall. North west wind 1m/s 9ºC sunny Site noise is audible (MOL turbines) Background noise: birds
PSG2 camp NMP1	8452530 4600124	01.11.11 16:05-16:20	Leq – 60.8 Lmax – 92.8 Lmin – 31.1 L90 – 35.1	North west wind 1m/s 11ºC sunny Site noise was not audible. Background noise: birds, people, dogs, heavy traffic.
Borjomi OSR NMP1	8368373 4632313	11.11.11 12:28-12:43	Leq – 53.5 Lmax – 71.5 Lmin – 34.2 L90 – 39.1	No wind 12ºC sunny Site noise slightly audible (site generator). Background noise: people, traffic
Tsalka OSR NMP1	8421154 4607667	09.11.11 12.12-12:27	Leq – 40.3 Lmax – 54.2 Lmin – 31.4 L90 – 35.8	South west wind 1m/s 10ºC sunny Site noise was not audible. Background noise: birds, people, cars
EDDF NMP1	8370815 4621309	11.11.11 14:01-14:16	Leq – 42.2 Lmax – 58.1 Lmin – 35.2 L90 – 38.3	No wind 8ºC sunny Site noise was not audible. Background noise: birds, people, security car

Appendix 2.2d – Effluent

PSG 1 Retention Pond

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Aug	Sep	Nov
Monthly										
pH	6-9	7.64	7.23	8.24		8		8.03	7.75	7.72
COD	125	32	9	35	24	N/A	32	7	16	15
Oil and grease	10	0.8	1.3	<5	<5	<5	<1	<1	<1	<1
TSS	35	11	12	63	5	46	72	<4	10	4
NH4	10	0.03	0.18	1.11	0.48	0.73	2.84	0.45	0.18	0.02
Sulphide	1	0.006	<0.005	0.006	<0.005	<0.005	<0.005	0.005	<0.005	<0.005
Coliform	<400	17	7	79	5	34	350		140	350
Quarterly										
BOD	25	7				12		<1		<1
Heavy metals	10	<10				<10		<10		<10
As	0.1	0.002				<0.003		<0.003		<0.003
Cd	0.1	0.028				<0.001		<0.001		<0.001
Cr (6)	0.1	<0.0007				<0.01		<0.01		<0.01
Cr total	0.5	<0.0002				<0.001		<0.001		<0.001
Cu	0.5	0.004				<0.003		0.005		0.006
Fe	3.5	<0.031				0.004		0.005		0.005
Pb	0.1	<0.0001				<0.003		<0.003		<0.003
Hg	0.01	0.051				<0.002		<0.002		<0.002
Ni	0.5	0.001				<0.003		<0.003		<0.003
Se	0.1	<0.00005				<0.008		<0.008		<0.008
Ag	0.5	<0.01				<0.001		<0.001		<0.001
Zn	1	0.003				0.005		0.016		0.026
Phenols	0.5	0.0013				N/A		0.0011		0.006
Chlorine	0.2	0.03				<0.02		<0.02		0.03
Total N	15					2.7		2.8		4.8
Total P	2					0.92		0.48		1.48

* No discharge from Retention Pond in July, October and December

N/A – sample bottle crushed during transportation

PSG 2 site STP RB

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Dec
Monthly								
pH	6-9	7.96	7.79	7.68	7.59	7.64	7.87	8.04
COD	125	26	14	13	69	26	6	74
Oil & grease	10	1.3	0.9	<5	<5	N/A	<1	
TSS	35	6	5	5	<4	4	<4	<4
NH4	10	0.01	0.02	0.05	9.47	<0.02	<0.02	0.19
Sulphide	1	<0.005	<0.005	<0.005				
Coliform	<400	14	17	17	79	17	13	4
Quarterly								
BOD	25	4			14	4	2	
Heavy metals	10	<10						
As	0.1	0.0004						
Cd	0.1	<0.00005						
Cr (6)	0.1	<0.01						
Cr total	0.5	0.0003						

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Dec
Cu	0.5	0.002						
Fe	3.5	0.015						
Pb	0.1	<0.0007						
Hg	0.01	<0.0002						
Ni	0.5	0.002						
Se	0.1	<0.002						
Ag	0.5	<0.0001						
Zn	1	0.011						
Phenols	0.5	<0.001						
Chlorine	0.2	0.02						
Annual								
Total N	15					6.4		
Total P	2					1.71		

* STP out of order and under maintenance (July, August, September, October, November), sewage water being transported to PSG 2 camp STP for treatment

N/A – sample bottle crushed during transportation

PSG 2 Retention Pond

Parameters	Standards	Mar	Apr	May	Jun	Aug	Sep	Oct	Nov
Monthly									
pH	6-9	7.75		7.75	7.68	8.1	8.51	8.1	8.04
COD	125	10	25	8	5	6	19	16	16
Oil & grease	10	<5	<5	<5	<1	<1	<1	<1	<1
TSS	35	<4	5	6	14	5	6	4	<4
NH4	10	0.09	0.25	0.1	0.2	0.19	0.04	0.15	0.02
Sulphide	1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Coliform	<400	2	5		280	110	2	11	79
Quarterly									
BOD	25	10		2	4	6			2
Heavy metals	10								
As	0.1	<0.003		<0.003		<0.003			<0.003
Cd	0.1	<0.001		<0.001		<0.001			<0.001
Cr (6)	0.1	<0.01		<0.01		<0.01			<0.01
Cr total	0.5	0.0025		0.004		<0.001			<0.001
Cu	0.5	<0.003		<0.003		0.006			0.004
Fe	3.5	0.003		0.004		0.008			0.007
Pb	0.1	<0.003		<0.003		<0.003			<0.003
Hg	0.01	<0.002		<0.002		<0.002			<0.002
Ni	0.5	<0.003		<0.003		<0.003			<0.003
Se	0.1	<0.008		<0.008		<0.008			<0.008
Ag	0.5	<0.001		<0.001		<0.001			<0.001
Zn	1	0.032		0.012		0.032			0.015
Phenols	0.5	<0.001		N/A		0.0012			0.008
Chlorine	0.2	<0.02		<0.02		0.03			0.04
Total N	15			0.8		3.6			<0.5
Total P	2			0.84		0.72			0.1

* No discharge from Retention Pond in January, February, July, December

PSG 1 Camp STP via Reed Bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	7.67	7.44	7.28	7.69	7.67		7.65	7.99	7.28	8	7.72	7.73
BOD	25	6	1	15	4	2	10	6	4	5		2	
COD	125	8	4	<4	5	4	16	5	11	15	9	18	13
TSS	35	<4	<4	<4	<4	4	<4	<4	<4	5	4	<4	<4
TDS	2100	637	606	641	827	426	690	707	370	583	681	429	990
NH4	10	0.02	<0.02	0.03	<0.02	<0.02	0.04	0.04	0.02	0.13	0.17	<0.02	0.02
Oil and grease	10	1.1	0.7	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1
Coliform	<400	2.1	130	7	7	110	1600	70	2	70	23	46	33
Total N	15	18.7				8.4			1.7			6	
Total P	2	1.77				1.21			0.68			1.16	

PSG 2 Camp STP via Reed Bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	7.68	7.43	7.68	7.87	7.65	7.82	7.62	7.9	7	8	7.9	7.8
BOD	25	3	2	10	2	4	2	8	4	6	4	2	5
COD	125	5	<4	<4	5	<4	5	<4	9	13	8	20	10
TSS	35	<4	<4	<4	<4	<4	<4	<4	<4	4	<4	<4	<4
TDS	2100	504	560	368	461	279	344	375	263	516	502	292	428
NH4	10	0.03	<0.02	0.04	<0.02	<0.02	<0.02	0.03	0.21	1	0.36	0.02	0.02
Oil and grease	10	1	1.2	<5	<5	<5	<1	N/A	<1	<1	<1	<1	<1
Coliform	<400	17	220	170	8	170	33	180	110	920	<2	350	920/33
Total N	15	7.1				5.3			4.7			5.4	
Total P	2	1.43				1.07			0.72			1.03	

N/A – sample bottle crushed during transportation

EDDF OWS

Parameters	Standards	Jul	Aug	Sep	Oct	Nov	Dec
Oil in Water	10	<1	<1	<1	<1	<1	<1

Appendix 2.2e – Ground water and Surface water

Reports on seasonal rounds of monitoring:

Round 11 – May-June 2011

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
TMW01-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW03-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW04-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW05-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW06-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW07-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW08-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW14-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW17-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW18-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW20-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW01-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW02-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW03-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW04-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW06-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW07 -R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW14-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW15-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW16-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW18-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW20-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW21-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW22 -R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW23-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
Duplicate 1-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate 2-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rins1-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rins2-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW04-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW05-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW01-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW02-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW03-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW04-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW05-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW06-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW07-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW08-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW08-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW09-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW10-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW01-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW02-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW03-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW04-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW05-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW07-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW09-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW10-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW11-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW12-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW13-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW14-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW15-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
KTSW01-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW02-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW03-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW04-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW05-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW06-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW07-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW08-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW18-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW17-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 3-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 4-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 5-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 6-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 7-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
RINS3-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW02-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW06-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW07-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW09-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW10-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW11-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW11-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW09-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW11-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW10-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW12-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW13-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW14-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW15-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
KTSW16-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW16a-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW17-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 8-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1MW2-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1MW3-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1MW4-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1MW5-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1MW6-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2MW1-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2SW1-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2SW2-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2SW3-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW10-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW11-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW13-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW12-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW13-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW19-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW24-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 10-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 9-R011-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50

Round 12 – September – October

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
BSW8-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW9-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW6-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW4-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW3-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW11-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW10-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW9-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW8-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 8-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW3 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW2 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW2 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW1 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate4 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW7 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW6 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW5 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BMW4 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
BSW10 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 3 -R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW1-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW2-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW1-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW3-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW2-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW4-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
KTMW5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW17-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW7-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW15-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW13-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW17-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW14-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW16-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW16 a-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW10-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW14-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW15-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW9-R12-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW11-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW12-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTSW8-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
KTMW13-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW6-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW10-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW7-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW20-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW11-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW23-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW19-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW12-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW13-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW24-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW22-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50

Parameters/MDLs/ Sampling points	Benzene 1 µg/L	Toluene 1 µg/L	Ethylbenzene 1µg/L	Xylenes 1µg/L	BTEX	C10-C12 10 µg/L	C13-C22 10 µg/L	C23-C30 10 µg/L	C31-C40 10 µg/L	C10-C40 10 µg/L	Naphthalene 1µg/L
TSW13-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW16-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 6-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW14-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW6-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW8-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 7-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW4-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW2-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW15-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW4-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW18-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW17-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW1-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW2-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TSW20-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
TMW7-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate 8-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2MW1-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2SW3-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG2SW1-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1 MW1-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1 MW2-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1 MW3-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1 MW4-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1 MW5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
PSG1 MW5-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50
Duplicate-R012-11	<0.2	<0.2	<0.2	<0.5	<1	<0.2	<10	<10	<10	<10	<50

Non Hazardous Landfill Ground water monitoring

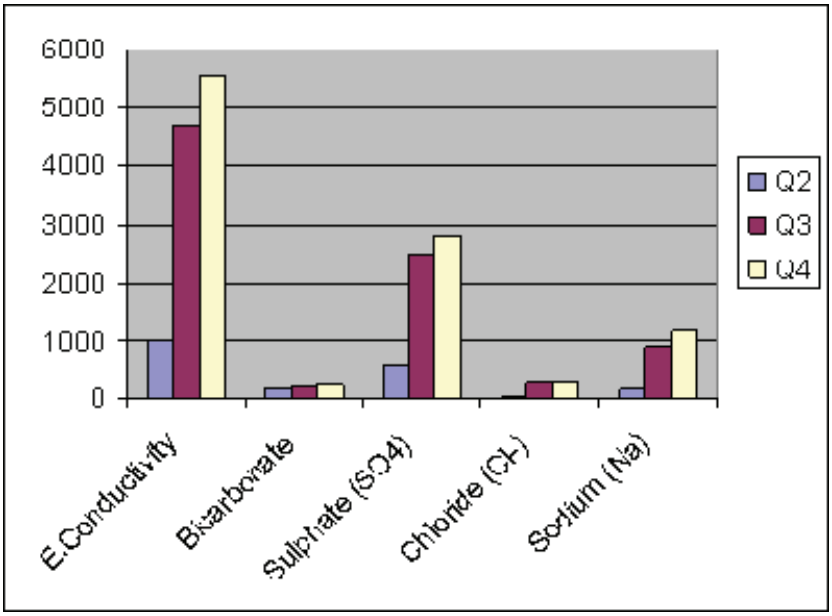
Parameters	Units	Area Background	MW 1 2Q	MW 2 2Q	MW 2 3Q	MW 3 2Q	MW 3 3Q	MW 3 4Q	MW 4 2Q	MW 4 3Q	MW 4 4Q	MW 5 2Q
General												
pH	-	7.3	8.01	7.81	7.7	7.83	7.4	7.47	7.74	7.3	7.12	7.67
E. Conductivity	µS/cm	2093	1107	1260	2720	215	7780	6974	220	3620	4161	2120
Bicarbonate	mg/L	173.2	183	183	166	171	288	283	171	144	163	215
Carbonate	mg/L	<0.1	<10	<10	<10	<10	<10	<2	<10	<10	<2	<10
Sulphate (SO4)	mg/L	7800	458	567	1339	385	4151	3300	470	2033	2346	1044
Chloride (Cl-)	mg/L	2251	26	29	86	23	609	382	26	123	169	130
Sodium (Na)	mg/L	3201	143.3	169.1	379	83.4	1702	1669	101.8	545	693	406
Ammonium (as NH4)	mg/L	<0.02	0.05	0.04	0.04	0.04	0.16	0.08	0.02	0.06	0.04	0.02
Total Cyanide	mg/L	<0.03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Heavy Metals												
Arsenic (As)	µg/L	<5	0.185	0.175	0.41	0.21	0.51	0.47	0.185	0.31	0.16	0.3
Boron (B)	µg/L	3750	712	821	1671	402	3897	4406	443.5	1587	2241	1100
Cadmium (Cd)	µg/L	<1	0.07	<0.03	0.05	<0.03	0.16	0.087	<0.03	0.08	0.09	<0.03
Chromium (Cr)	µg/L	<20	0.34	0.48	0.66	0.285	0.08	0.135	0.3	0.12	0.057	0.25
Copper (Cu)	µg/L	30	3.83	4.03	5.04	0.875	3.3	2.33	0.79	1.47	0.77	1.35
Mercury (Hg)	µg/L	0.024	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Lead (Pb)	µg/L	<10	0.19	0.09	0.86	0..04	0.21	0.11	0.06	0.13	0.048	0.09
Zinc (Zn)	µg/L	48	7.52	2.97	20.6	3.55	10.7	7.55	2.01	2.17	2.01	4.51
Selenium (Se)	µg/L	28	6.07	7.78	18	1.02	11.5	9.51	1.11	5.28	4.65	3.14
Nickel (Ni)	µg/L	20	4	4.36	3.19	0.38	8.31	5.77	0.32	4.2	6.74	1.23
General Organics												
Total organic carbon	mg/L	88.5	7.9	8.4	6	4.3	18	16	3.9	3	24	4.6
COD	mg/L	235.6	<4	5	<4	<4	11	19	5	<4	36	<4
BOD	mg/L	3.96	2	2	2	2	8	6	2	2	13	2
Phenols	µg/L	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TPH												
Fraction C10-C12	µg/L	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Fraction C13-C22	µg/L	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Parameters	Units	Area Background	MW 1 2Q	MW 2 2Q	MW 2 3Q	MW 3 2Q	MW 3 3Q	MW 3 4Q	MW 4 2Q	MW 4 3Q	MW 4 4Q	MW 5 2Q
Fraction C23-C30	µg/L	NA	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Fraction C31-C40	µg/L	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Total C10-C40	µg/L	NA	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Pesticides		<10										
Chlorinated												
p,p'-DDT	µg/L		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
p,p'-DDD	µg/L		<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
p,p'-DDE	µg/L		<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
a-BHC	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
b-BHC	µg/L		<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
g-BHC(Lindan)	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
d-BHC	µg/L		<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Aldrin	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Endosulfan I	µg/L		<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Dieldrin	µg/L		<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Endrin	µg/L		<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Endosulfan II	µg/L		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	µg/L		<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Endosulfan sulfate	µg/L		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Triazine Herbicides		<50										
Atrazine	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Desisopropyl atrazine	µg/L		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Desethyl atrazine	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ametryn	µg/L		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Prometon	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Simazine	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Propazine	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Simetryn	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Prometryn	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Terbutryn	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Parameters	Units	Area Background	MW 1 2Q	MW 2 2Q	MW 2 3Q	MW 3 2Q	MW 3 3Q	MW 3 4Q	MW 4 2Q	MW 4 3Q	MW 4 4Q	MW 5 2Q
Cyanazine	µg/L		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
VOCs		<100										
Benzene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p-Xylene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-Xylene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
m-Xylene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloromethane	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichlorethene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorethane	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,3-Dichloropropene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,3-Dichloropropene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethane, 1,1,2-trichloro-	µg/L		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tetrachloroethylene	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene, chloro-	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzene, 1,2-dichloro-	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene, 1,4-dichloro-	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene, 1,3-dichloro-	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Epichlorohydrin	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl chloride	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SVOCs		<100										
Acenaphthene	µg/L		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07

Parameters	Units	Area Background	MW 1 2Q	MW 2 2Q	MW 2 3Q	MW 3 2Q	MW 3 3Q	MW 3 4Q	MW 4 2Q	MW 4 3Q	MW 4 4Q	MW 5 2Q
Acenaphthylene	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benz[a]anthracene	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[a]pyrene	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[k]fluoranthene	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo[ghi]perylene	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzyl butyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bis(2-ethylhexyl) phthalate	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene-d12	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Di-n-butyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Di-n-octyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenz[a,h]anthracene	µg/L		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Diethyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthrene	µg/L		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluorene	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno[1,2,3-cd]pyrene	µg/L		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	µg/L		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Perylene-d12	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene-d10	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L		<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Pyrene	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Figure A.2.2.1 – Average results for three quarters for elevated parameters



Rustavi area 2011 precipitation figures

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
18mm	31mm	39mm	60mm	60mm	83mm	30mm	32mm	34mm	42mm	25mm	21mm

Appendix 2.2f – GHG emissions

GHG Emissions in 2011 (tonnes)

GHG	BTC actual	BTC forecast	SCP actual	SCP forecast	WREP/Supsa actual	WREP/Supsa forecast
January	22,033		1,329		2,204	
February	20,863		1,585		1,997	
March	22,371		2,011		2,205	
2011-Q1	**65,267**	**87,542**	**4,925**	**24,463**	**6,406**	**6,287**
April	20,716		1,983		2,006	
May	21,369		1,585		2,111	
June	21,243		1,105		2,337	
2011-Q2	**63,328**	**89,344**	**4,673**	**24,463**	**6,453**	**6,287**
July	21,681		1,004		1,212	
August	20,940		844		2,370	
September	17,310		1,166		2,260	
2011-Q3	**59,931**	**89,344**	**3,013**	**24,463**	**5,842**	**6,287**
October	17,356		1,228		1,969	
November	18,997		1,681		2,134	
December	17,393		1,912		1,753	
2011-Q4	**53,746**	**89,344**	**4,821**	**24,463**	**5,856**	**6,287**

Appendix 2.2g – Waste

Total Figures, 2011

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	29.3	56.2	0	0.8	0	0.4
Oily liquids	24.7	17.5	0	0.6	39.5	5.9
Sewage sludge	210	154	9	15	0	0
Wax	0	0	0	0	0	0
Other	2.4	20.8	0	2.1	12.7	2.2
Non-hazardous waste recycled/recovered offsite						
Glass	17.2	5.2	0	0.1	0	0
Plastic (recycled)	75.1	25	4.2	6	0	7.5
Paper (recycled)	150.5	32.7	3.7	6.3	0	11.1
Metal (recycled)	0.56	6.9	0	0	0	0
Wood	4.5	4.1	0	0	0	0
Organic Wastes (food wastes)	8.56	8.3	0	0	0	0
General	212.1	200	2.9	7.3	0.6	430.6

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 (µg/m^3)

Parameter	Project Standards (Turkey)	Averaging Period
VOCs	Benzene: 5	Annual average by 2010. A limit value of 10µg/m^3 (100%) must be met on 13 December 2000, reducing on 1 January 2006 and every 12 months thereafter by 1µg/m^3 to reach 0% (5µg/m^3) by 1 January 2010
Oxides of Nitrogen (NO_x)	40	Annual mean
Sulphur Dioxide (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 (µg/m^3)						
		SO_2	NOx	Benzene	Toluene	Ethyl Benzene	mp-xylene	o- xylene
CMT 1	Jan-Apr-July-Oct 2011	n/a	n/a	0.52	0.82	0.28	0.24	0.07
CMT 2		6.51	15.99	0.61	2.26	0.46	0.78	0.27
CMT 3		8.49	12.05	2.17	5.59	1.1	2.6	1.09
CMT 3D		6.94	12.39	n/a	n/a	n/a	n/a	n/a
CMT 4		n/a	n/a	0.45	1.03	0.83	0.59	0.22
CMT 4D		n/a	n/a	0.66	1.39	0.74	0.79	0.2
CMT 5		5.95	13.84	0.54	1.39	0.62	0.76	0.33
CMT 7		n/a	n/a	0.61	9.33	1.01	3.44	1.28
CMT 8		8.7	12.97	0.43	1.46	0.26	0.64	0.13
CMT 10		n/a	n/a	0.55	4.41	0.53	1.79	0.68

Appendix 2.3b – Stack Emissions

Stack Emission Standards

Emission stream sources	Parameters	Project Specified Standard
5MW reciprocating engines (gas fired) (PT 1, PT 2, PT 3 and PT 4)	**NO_x**	500mg/Nm^3 (5% Volumetric O_2)
	SO_2	60mg/Nm^3 (5% Volumetric O_2)
	CO	650mg/Nm^3 (5% Volumetric O_2)
	PM	130mg/Nm^3 (5% Volumetric O_2)
Water heaters - diesel fired (wax handling boilers at CMT, IPT 1 and IPT 2)	**NOx**	460mg/Nm^3 (3% Volumetric O_2)
	SO_2	1,000mg/Nm^3 (3% Volumetric O_2)
	CO	150mg/Nm^3 (3% Volumetric O_2)
	Soot	2
Water heaters - gas and LPG fired (CMT, PT 1, PT 2, PT 3 and PT 4)	**NO_x**	320mg/Nm^3 (3% Volumetric O_2)
	SO_2	100mg/Nm^3 (3% Volumetric O_2)
	CO	100mg/Nm^3 (3% Volumetric O_2)
	PM	10mg/Nm^3 (3% Volumetric O_2)
Generators/fire pumps - diesel fired (monitored only if the annual run time is < 500hrs)	**NO_x**	460mg/Nm^3 (3% Volumetric O_2)
	SO_2	1,000mg/Nm^3 (3% Volumetric O_2)
	Soot	2
	CO	250mg/Nm^3 (15% Volumetric O_2)
	PM	75mg/Nm^3 (15% Volumetric O_2)

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
PT1									
Date of monitoring					**April 2011**				
Monitoring result	NO_x	0	1.1	0	1.2	0.5	0.5	0	0
	SO_2	0	0	0	0	0	333	0	0
	PM	6.52	25.61	4.65	12.58	7.08	4.43	3.15	3.26
	CO	90	408	120	342	95	0	18	0
PT2									
Date of monitoring					**April 2011**				
Monitoring result	NO_x	4.9	0	0	0	Not existing	1.5	0.6	1.4
	SO_2	0	0	0	0		0	0	0
	PM	5.26	3.73	5.39	5.6		6.85	4.66	4.38
	CO	45	58	54	56		1	0	0
PT3									
Date of monitoring					**April 2011**				
Monitoring result	NO_x	102.7	0	2.3	0	338.9	2.4	3	6.9
	SO_2	0	0	0	0	0	0	0	0
	PM	2.41	4.27	6.45	3.19	9.06	3.37	3.32	3.24
	CO	33	124	119	89	24	2	6	14
PT4									
Date of monitoring					**April 2011**				
Monitoring result	NO_x	102.7	6.8	3.4	0	Not existing	2.2	0	1.1
	SO_2	0	0	0	0		2	0	0
	PM	3.04	3.75	4.56	4.78		2.11	4.3	1.47
	CO	33	83	38	37		0	2	1

Stack Emission Monitoring Results for Intermediate Pigging and Pressure Reduction Station

Facility	Parameter	Emission Source
		Wax Handling Water Heater
IPT1		
Date of monitoring		**April 2011**
Monitoring result	**NO_x**	0
	SO_2	0
	soot	2.7
	CO	1
IPT2		
Date of monitoring		**April 2011**
Monitoring result	**NO_x**	0.3
	SO_2	0
	soot	1.7
	CO	0

Stack Emission Monitoring Results for Ceyhan Marine Terminal

Facility	Parameter	Emission Source			
		General Facilities LPG Water Heater 1	General Facilities LPG Water Heater 2	Housing Compound LPG Water Heater	Process Area LPG Water Heater
CMT					
Date of monitoring		**April 2011**			
Monitoring result	NO_x	75.9	0	6.9	0.2
	SO_2	0	0	0	0
	PM	2.57	2.47	2.11	1.32
	CO	2	2	97	0

Appendix 2.3c – Aqueous Discharges

Aqueous Discharge Standards

Waste stream sources	Parameters	Project Specified Standard
Aqueous discharges to surface and marine waters from OWSs	All limits 95th 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
	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:

1. When it is stated that there is 'no discharge' it means that the water was sampled but not discharged since the final effluent was non compliant with the Project Standards. In this case non compliant waste water was recycled 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.

2. 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.

3. As per EMP, 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.

4. As per the Ministry of Environment and Forest 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.

PT 1 Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
Ops WWTP (new)												
pH	No discharge	7.4	6.9	6.64	7.3	7.3	7.22	7.43	7.2	7.47	No discharge	7.1
BOD (mg/l)		<4	6	<4	7	10.3	<4	10	6	<4		9.8
COD (mg/l)		19.1	23.7	14.2	18.8	36.2	13.9	26.7	19.2	<10		33.6
Oil and grease (mg/l)		<5	<5	<5	<5	<5	<5	<5	6.2	<5		< 5
TSS (mg/l)		<10	<10	<10	<10	<10	<10	<10	<10	<10		< 10
Total residual chlorine (mg/l)		<0.02	<0.02	0.02	0.127	<0.02	<0.02	0.63	<0.02	<0.02		< 0.02
Coliform bacteria		20	0	30	0	100	30	0	150	100		15
Storm Water Pond (SWP)												
pH	No discharge		No flow			No discharge				8.14	No flow	
BOD (mg/l)										<4		
COD (mg/l)										<10		
Oil and grease (mg/l)										<5		
TSS (mg/l)										<10		
Total residual chlorine (mg/l)										<0.02		
Coliform bacteria										10		
OWS												
pH						7.11	6.57	7.56	7.18	7.6	No flow	
Oil and grease (mg/l)			No flow			9.2	<5	<5	8.8	8.4		
TSS (mg/l)						12.6	<10	<10	<10	<10		
Sulphur (mg/l)	Not in programme			<0.1				Not in programme				

PT 2 Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
Ops WWTP												
pH	8.3	8.39	8.15	8.01	8.02		7.98	7.96			8.71	7.5
BOD (mg/l)	<4	<4	<4	<4	<4		<4	<4			<4	22.4
COD (mg/l)	<10	<10	<10	<10	10.8		11	<10			<10	68.7
Oil and grease (mg/l)	<5	<5	<5	<5	<5	No discharge	<5	<5	No discharge		<5	10
TSS (mg/l)	<10	<10	<10	<10	<10		<10	21.6			<10	24
Total residual chlorine (mg/l)	<0.02	<0.02	<0.02	0.1	<0.02		<0.02	<0.02			<0.02	<0.02
Coliform bacteria	30	0	0	0	0		0	20			0	50
Storm Water Pond (SWP)												
pH					8.71	8.75	8.05	8.74	8.47			
BOD (mg/l)					12	13	21	15	23.6			
COD (mg/l)					42.3	49.9	61.5	58.3	86.4			
Oil and grease (mg/l)			No discharge		<5	<5	<5	<5	13.8		No discharge	
TSS (mg/l)					12	15.4	<10	31.2	23.7			
Total residual chlorine (mg/l)					<0.02	<0.02	<0.02	<0.02	<0.02			
Coliform bacteria					60	0	0	0	0			
SWP upstream												
pH					8.27	7.95	7.8	8.1		8.18	8.01	
BOD (mg/l)					<4	<4	<4	<4		27.4	<4	
COD (mg/l)					<10	<10	<10	<10		74.5	<10	
Oil and grease (mg/l)			No flow		<5	<5	<5	<5	No flow	31.6	<5	No flow
TSS (mg/l)					476.2	<10	<10	<10		572.6	<10	
Total residual chlorine (mg/l)					<0.02	<0.02	<0.02	<0.02		<0.02	<0.02	
Coliform bacteria					2,700	1,200	1,100	3,000		3,000	2,000	
SWP downstream												
pH					8.2	8.07	7.73	8.44		8.01	7.86	
BOD (mg/l)					<4	<4	<4	8		12.1	<4	
COD (mg/l)					29.9	<10	<10	19.1		35	<10	
Oil and grease (mg/l)			No flow		<5	<5	<5	<5	No flow	9.6	<5	No flow
TSS (mg/l)					515.4	<10	<10	<10		84.4	<10	
Total residual chlorine (mg/l)					<0.02	<0.02	<0.02	<0.02		<0.02	<0.02	
Coliform bacteria					0	1,300	1,000	0		3,000	2,500	
OWS												
pH	8.31		8.19	7.61	7.48	8.11	7.61	8.45	8.6	8.45	8.5	
Oil and grease (mg/l)	6	No flow	9.6	5.6	6.8	<5	<5	<5	10.2	12	<10	No flow
TSS (mg/l)	<10		<10	<10	<10	<10	<10	13.2	<10	22.4	<5	
Sulphur (mg/l)	<0.1	Not in programme		<0.1			Not in programme					

PT 3 Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
Ops WWTP (new)												
pH	9	8.04	8.09	8	7.96	No discharge	7.95	No discharge	7.7	8.15	8.34	No discharge
BOD (mg/l)	17	8.9	<4	<4	4		10		8	7	<4	
COD (mg/l)	48	29.2	<10	<10	19.9		36.8		32	22.2	<10	
Oil and grease (mg/l)	<5	<5	<5	<5	7.2		5.2		9	7	<5	
TSS (mg/l)	26	28.7	<10	<10	<10		<10		<10	<10	<10	
Total residual chlorine (mg/l)	< 0.02	< 0.02	< 0.02	< 0.02	0.1		<0.02		<0.02	<0.02	0.48	
Coliform bacteria	200	200	700	0	0		400		50	100	30	
Storm Water Pond (SWP)												
pH	8	8.25	8	8.6	No discharge	8.11	No discharge			8.7	No discharge	
BOD (mg/l)	12.4	19.9	10	<4		24				24		
COD (mg/l)	39.7	60.4	36	<10		74.5				76.7		
Oil and grease (mg/l)	<5	<5	<5	<5		13.2				5		
TSS (mg/l)	28	<10	11.3	<10		<10				32.7		
Total residual chlorine (mg/l)	< 0.02	< 0.02	< 0.02	< 0.02		< 0.02				< 0.02		
Coliform bacteria	200	50	200	0		0				0		
OWS												
pH	8.47	No flow	8.01	8.06	8.01	7.91	7.07	7.84	7.99	8.3	8.2	7.34
Oil and grease (mg/l)	<5		7.4	8	8.4	12.8	<5	<5	12.6	8.6	<5	<5
TSS (mg/l)	<10		<10	<10	<10	<10	<10	16.4	<10	17.8	<10	<10
Sulphur (mg/l)	<0.1	Not in programme		<0.1				Not in programme				

PT 4 Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
Ops WWTP												
pH	No discharge	8.22	No discharge			7.85	8.25	No discharge	8.07	7.6	No discharge	
BOD (mg/l)		14				9.9	9		15.2	16		
COD (mg/l)		51.8				33.6	23.3		55.9	46.9		
Oil and grease (mg/l)		<5				5	6.4		8.6	6.2		
TSS (mg/l)		26.7				24.1	10		21.9	29		
Total residual chlorine (mg/l)		<0.02				<0.02	<0.02		0.127	<0.02		
Coliform bacteria		20				0	0		100	100		
Storm Water Pond (SWP)												
pH	No flow		7.7	8.46	No discharge		8.61	No discharge		8.15	8.15	No discharge
BOD (mg/l)			10	26			21.4			14	15.6	
COD (mg/l)			37.5	87.3			39.5			55.7	45.3	
Oil and grease (mg/l)			<5	<5			<5			7.6	<5	
TSS (mg/l)			<10	21			<10			<10	10.4	
Total residual chlorine (mg/l)			<0.02	<0.02			<0.02			<0.02	0.296	
Coliform bacteria			0	30			0			200	10	
OWS												
pH	8.3	8.02	7.98	8.3	8.02	7.98	8.44	8.24	8.73	8.25	8.4	7.45
Oil and grease (mg/l)	<5	<5	<5	<5	5.6	<5	<5	<5	11.6	11	<5	5.8
TSS (mg/l)	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	12	10.1
Sulphur (mg/l)	<0.1	<0.1	Not in programme	<0.1				Not in programme				

IPT 1 Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
Ops WWTP												
pH	7.8	No discharge	7.38	7.2	No discharge	No flow	7.1	No discharge	7.75	No discharge	7.96	7.63
BOD (mg/l)	<4		9	8			<4		<4		<4	<4
COD (mg/l)	<10		31	30.6			<10		<10		<10	<10
Oil and grease (mg/l)	<5		<5	<5			<5		<5		<5	<5
TSS (mg/l)	<10		<10	23.3			<10		<10		<10	<10
Total residual chlorine (mg/l)	<0.02		<0.02	<0.02			<0.02		n/a		n/a	n/a
Coliform bacteria	100		0	300			10		0		30	0
OWS												
pH	8.14	8.06	7.7	8.02	8.17	7.8	7.32	7.44	7.9	7.95	7.85	7.37
Oil and grease (mg/l)	<5	<5	<5	<5	<5	<5	7.6	<5	7.8	<5	<5	<5
TSS (mg/l)	<10	<10	<10	<10	10.4	<10	<10	<10	<10	<10	<10	<10
Sulphur (mg/l)	<0.1	<0.1	Not in programme	<0.1				Not in programme				

IPT 2 Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
OWS												
pH	7.2	7.06	6.55	7.1	7.86	7.3	7.98	7.86	8.1	7.75	7.95	7.35
Oil and grease (mg/l)	6.8	5	5	5	5	5	5	5	8.8	4	5	5
TSS (mg/l)	22	10.6	28.2	<10	<10	<10	<10	10.7	<10	<10	<10	< 10
Sulphur (mg/l)	<0.1	Not in programme		<0.1				Not in programme				

CMT Aqueous Discharges Monitoring Results

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
Ops WWTP												
pH	8.8	No discharge	7.7	7.95	No discharge		7.85	7.35	No discharge		7.96	7.45
BOD (mg/l)	13.5		28	16			12.1	6			<4	8.4
COD (mg/l)	40		98	53.3			41.6	19			<10	25.5
Oil and grease (mg/l)	8.6		<5	<5			<5	<5			<5	<5
TSS (mg/l)	<10		26.8	<10			<10	<10			<10	<10
Total residual chlorine (mg/l)	0.02		<0.02	0.16			<0.02	<0.02			<0.02	<0.02
Coliform bacteria	0		100	200			0	60			400	0
Construction WWTP												
pH	No discharge	7.82	7.7	8.15	No discharge	7.56	7.54	7.79	8.03	7.6	No discharge	7.1
BOD (mg/l)		7.1	9	5		6	10.7	12.1	6	15		9.1
COD (mg/l)		22.2	31	18.9		20.2	30.6	38.2	17.9	38		30.3
Oil and grease (mg/l)		<5	<5	<5		<5	8.2	6.4	<5	<5		<5
TSS (mg/l)		<10	<10	<10		<10	<10	<10	<10	<10		<10
Total residual chlorine (mg/l)		<0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02		<0.02
Coliform bacteria		200	0	50		0	100	50	400	400		5
Storm Water Pond (SWP)												
pH	No discharge								No flow		No discharge	
BOD (mg/l)												
COD (mg/l)												
Oil and grease (mg/l)												
TSS (mg/l)												
Total residual chlorine (mg/l)												
Coliform bacteria												
SWP upstream												
pH	8.27	8.1	7.68	No flow	8.2	8.6	7.64	8.19	No flow			
BOD (mg/l)	8	<4	6		<4	<4	<4	5.5				
COD (mg/l)	21.8	<10	25.1		<10	10.8	<10	17.4				
Oil and grease (mg/l)	<5	<5	<5		<5	<5	<5	<5				
TSS (mg/l)	<10	<10	19.1		36.6	25.3	23	<10				
Total residual chlorine (mg/l)	0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02				
Coliform bacteria	800	300	2,000		800	800	700	2,100				

	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11
SWP downstream												
pH	8.42	8.27	7.69	8.3	8.03	8	8.6	8.65		9.3		
BOD (mg/l)	6.6	4.9	8	11.6	<4	24.3	9	8		18		
COD (mg/l)	23	18.2	28	40.2	14.8	80.8	29	25		56.8		
Oil and grease (mg/l)	5.6	<5	<5	<5	<5	8.8	<5	<5	No flow	<5	No flow	
TSS (mg/l)	<10	<10	18.3	13.8	<10	82.9	46.1	51.7		<10		
Total residual chlorine (mg/l)	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02		
Coliform bacteria	2,000	800	2,000	2,000	2,600	2,000	2,000	800		100		
OWS 1&2 (office and housing compounds)												
pH			7.7	8.8								
Oil and grease (mg/l)	No flow		<5	<5				No flow				
TSS (mg/l)			<10	<10								
Sulphur (mg/l)	Not in programme			<0.1				Not in programme				
OWS 3 (process area)												
pH			7.83	8.31								
Oil and grease (mg/l)	No flow		9	<5				No flow				
TSS (mg/l)			<10	<10								
Sulphur (mg/l)	Not in programme			<0.1				Not in programme				
OWS 4 (tank farm)												
pH			7.75	8.1								
Oil and grease (mg/l)	No flow		8.8	<5				No flow				
TSS (mg/l)			<10	<10								
Sulphur (mg/l)	Not in programme			<0.1				Not in programme				
OWS 5 (metering area)												
pH	7.65	7.55	7.97	8.03								
Oil and grease (mg/l)	<5	<5	6.2	<5				No flow				
TSS (mg/l)	<10	<10	<10	<10								
Sulphur (mg/l)	<0.1	<0.1	Not in prog.	<0.1				Not in programme				
OWS 6 (jetty 1)												
pH	7.65	7.81	7.8	7.20	7.41	7.1	7.15	7.56	7.73	7.5	7.73	7.32
Oil and grease (mg/l)	<5	<5	7.8	<5	5.2	<5	8	6.8	15.6	5.6	8.6	<5
TSS (mg/l)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Sulphur (mg/l)	<0.1	<0.1	Not in prog.	<0.1				Not in programme				
OWS 7 (jetty 2)												
pH	7.79	7.71	7.7	7.34	7.24	7.04	7.04	7.56		7.7	7.58	7.25
Oil and grease (mg/l)	<5	<5	<5	<5	5.2	<5	12.4	6.4	No flow	<5	9	<5
TSS (mg/l)	<10	<10	<10	<10	<10	<10	<10	31.5		52.5	<10	<10
Sulphur (mg/l)	<0.1	<0.1	Not in prog.	<0.1				Not in programme				

Appendix 2.3d – Waste

Total Waste Volumes, 2011

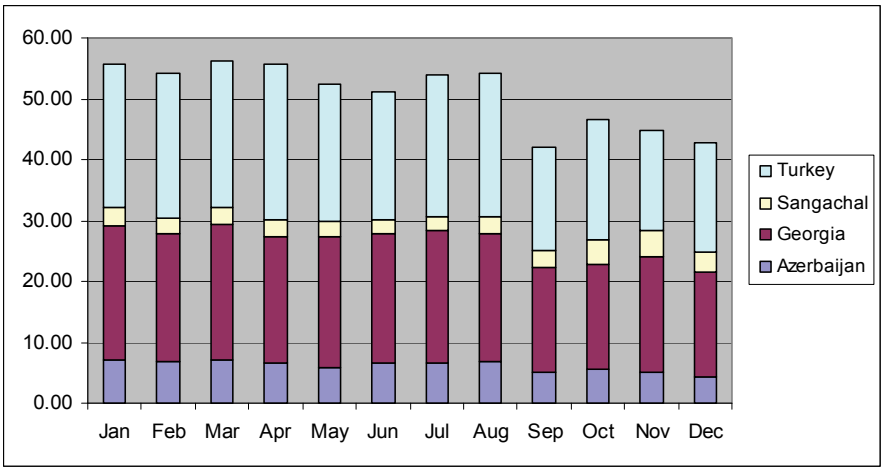
All figures are in kg	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	TOTAL
PT1&IPT2													
Hazardous waste disposed offsite	0	0	0	3,458	0	0	0	0	2,911	0	0	3,549	9,918
Domestic waste disposed offsite	750	725	1,870	984	1,050	0	1,825	1,930	770	1,400	0	1,825	13,129
Waste water disposed in 3rd party WWTP	10,000	10,000	10,000	10,000	20,000	10,000	10,000	10,000	20,000	10,000	10,000	10,000	140,000
Non-hazardous waste recycled	710	1,025	1,330	1,300	1,345	0	1,435	1,120	375	910	0	22,150	31,700
Non-hazardous waste reused	1,007	450	1,189	1,425	1,070	805	680	2,300	650	450	825	780	11,631
PT2													
Hazardous waste disposed offsite	0	0	0	1,581	0	0	0	0	1,752	0	0	2,880	6,213
Domestic waste disposed offsite	2,500	2,120	2,580	1,600	0	2,454	1,639	1,400	974	2,430	0	1,650	19,347
Waste water disposed in 3rd party WWTP	10,000	0	10,000	0	10,000	0	0	10,000	0	0	10,000	10,000	60,000
Non-hazardous waste recycled	2,550	1,478	1,066	760	0	1,270	594	1,328	623	1,660	0	820	12,149
Non-hazardous waste reused	1,086	1,905	1,830	1,886	1,961	1,542	1,798	1,592	1,772	1,661	1,573	1,254	19,860
PT3													
Hazardous waste disposed offsite	0	0	0	4,130	0	0	0	0	6,500	0	0	5,760	16,390
Domestic waste disposed offsite	1,100	1,500	1,500	1,100	0	1,200	1,250	1,600	600	2,200	0	1,800	13,850
Waste water disposed in 3rd party WWTP	10,000	20,000	10,000	10,000	20,000	10,000	0	30,000	0	20,000	0	30,000	160,000
Non-hazardous waste recycled	1,850	1,500	810	1,100	350	350	1,950	1,600	250	1,650	1,050	1,100	13,560
Non-hazardous waste reused	150	150	1,000	150	650	400	215	275	175	375	150	200	3,890
PT4													
Hazardous waste disposed offsite	0	0	0	1,378	0	0	0	0	3,058	0	0	2,379	6,815
Domestic waste disposed offsite	2,000	1,500	1,500	1,300	0	2,000	875	570	1,500	1,000	700	1,100	14,045
Waste water disposed in 3rd party WWTP	0	0	60,000	30,000	15,000	30,000	0	15,000	15,000	60,000	20,000	0	245,000
Non-hazardous waste recycled	0	1,138	0	3,687	0	0	1,806	0	0	1,825	0	0	8,456
Non-hazardous waste reused	770	915	800	570	920	1,535	640	720	630	1,250	650	780	10,180
IPT1													
Hazardous waste disposed offsite	0	0	0	4,565	0	0	0	0	1,400	0	0	5,000	10,965
Domestic waste disposed offsite	2,300	2,100	0	2,000	2,050	800	400	1,100	815	0	0	2,400	13,965
Waste water disposed in 3rd party WWTP	28,000	56,000	84,000	42,000	84,000	56,000	28,000	14,000	28,000	28,000	14,000	14,000	476,000
Non-hazardous waste recycled	540	580	940	740	0	810	0	0	665	0	216	0	4,491
Non-hazardous waste reused	1,630	1,835	1,815	1,665	1,535	1,115	1,080	960	950	725	925	970	15,205

All figures are in kg	Jan 11	Feb 11	March 11	April 11	May 11	June 11	July 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	TOTAL
CMT													
Hazardous waste disposed offsite	0	0	0	2,647	0	0	0	0	3,534	0	0	6,707	12,888
Domestic waste disposed offsite	7,072	5,070	4,702	8,545	10,744	6,450	5,184	11,597	5,979	6,770	6,181	9,912	88,206
Waste water disposed in 3rd party WWTP	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	23,000	133,000
Non-hazardous waste recycled	3,417	4	1,800	0	0	6,974	6,030	250	0	0	0	0	18,475
Non-hazardous waste reused	6,444	4,072	5,644	6,370	4,105	4,226	4,028	4,042	4,000	12,027	6,879	3,723	65,560

TOTAL 2011 (in tonnes)	
Hazardous waste disposed offsite	63.19
Domestic waste disposed offsite	162.54
Waste water disposed in 3rd party WWTP	1,214
Non-hazardous waste recycled	88.83
Non-hazardous waste reused	126.33
Incineration % for solid waste disposed offsite	14
Landfill % for solid waste disposed offsite	37
Recycle % for solid waste disposed offsite	20
Reuse % for solid waste disposed offsite	29

APPENDIX 2.4: GHG EMISSIONS

GHG Gross Emissions in 2011 (in kilo tonnes)



GHG	Azerbaijan	Georgia	Sangachal	Turkey	Total
January	7.12	22.03	2.93	23.57	55.66
February	6.91	20.87	2.63	23.73	54.15
March	6.98	22.35	2.90	24.03	56.27
April	6.61	20.72	2.77	25.57	55.68
May	5.87	21.37	2.62	22.52	52.39
June	6.50	21.24	2.48	20.82	51.05
July	6.55	21.69	2.39	23.26	53.89
August	6.78	20.95	2.89	23.46	54.08
September	5.00	17.29	2.65	16.98	41.92
October	5.54	17.35	4.02	19.67	46.58
November	5.00	19.00	4.40	16.38	44.78
December	4.21	17.39	3.29	17.94	42.83

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

Appendix 3 contains BTC Company'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

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 non compliant with ESAP	III	Prepare an MOC that justifies not relocating the sampling ports on the diesel generator stacks. 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).	2011 stack emission monitoring results showed that concentration of NOx from MOL turbine higher that ESAP standard. IEC consultants suggested to implement an offset program to compensate the exceeded part of NOx emissions. The following offset programs are in progress: Offset project proposes installation of solar thermal heating systems at three villages along the Az Export Pipelines: • Chobanabdalli of Samukh district, kindergarten; • Bashirli of Goranboy district, school; and • Qurbanzade of Geranboy district, school.	March, 2011

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 Manage-ment	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 Manage-ment	Non compliant discharge of retention pond water into surface water environment	I	No comment/recommendation is 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-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.6.1	Sept 2011	Pollution Prevention and Environmental Monitoring	Failure of building the marine slops treatment facilities at CMT has reached a level of attention such that the Project has been fined by the Turkish MoE.	II	The situation is considered serious, because the MoE has the power to shut down the CMT, even recognizing that this would be highly unlikely.	MARPOL Plan submitted to the MoEU was approved in December. Ministry asked the MARPOL facility to be completed in 45 working days. BIL and BTC Company have visited the Ministry in order to understand the position of the Ministry with regards to the effluent standards to be imposed on the facility and the flexibility of the completion time of 45 days. Ministry does not seem to be flexible enough to accommodate a reasonable construction schedule and this is a risk for 2012. The risk is that the Ministry will potentially not extend the completion time allowance enough to match BTC Company's construction schedule and may fine BIL more than once until the facility will be completed. Detailed design and engineering will commence in Q1, 2012 as per the approved Plan.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.2.2	Sept 2011	E&S Management Organization and Resources	Notwithstanding that IEC recognizes that BIL made unilaterally decision not to extend the contract with SESMeke for the OSR services and that BTC took immediate steps to ensure the adequacy and continuity of OSR capability in Turkey, IEC considers this issue as a risk for the pipeline should an incidental oil spill occur in Turkey until same level services to those provided by SESMeke will be re-established again in Turkey.	Rec.	It is therefore recommended that Polaris conduct a complete audit of the existing OSR capacity in Turkey and that necessary corrective actions will immediately be taken.	An audit will be carried out in April 2012. The audit will provide objective assessment of the preparedness status of OSR capacity and recommend actions, if necessary.	OPEN
4.2.2	Sept 2011	E&S Management Organization and Resources	The BIL Environment and PCR teams are fully operational but still limited by a number of key vacancies. In particular, the two environmental inspector positions (at CMT and EMS), the two pipeline HSE engineers (at PT2 and PT4) and PCRE positions at PT3 and PT4 have remained still open.	Rec.	Although IEC understands BIL has encountered difficulties for recruiting adequate and prepared environmental engineers and social experts, it is recommended that BIL take immediate steps to fill those positions.	In 2011, the vacant Environmental Manager position was filled in. 3 HSE Engineers were recruited; thus there is no vacancy left at PTs. However the two environmental inspector positions (at CMT and EMS) are still vacant.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.2.2	Sept 2011	E&S Management Organization and Resources	IEC observed that PCR organization is responding to a new scope of work more oriented to improve community awareness against ROW violations and to regulate third parties crossings, rather than dealing mainly with community construction-related complaints, restoration and compensation issues, nearly all of which are closed.	Rec.	Although the Level 1 non-compliance is rescinded, the IEC recommends that adequate PCR staff resources be maintained and new positions covered in a short time frame. It is still necessary to make sure that an effective grievance mechanism is still in place and the links established with the local communities are properly maintained even though the workload for the PCRE teams is now mainly community awareness programs and activities related to third party crossings.	3 more staff has been recruited.	CLOSED
4.2.2	Sept 2011	E&S Management Organization and Resources		Rec.	Although the Level 1 non-compliance has been rescinded, the issue of CLO staffing still remains. The fact that there are numerous land use violations along the ROW indicates that the community awareness programs need to be stepped up.		CLOSED
4.3.2	Sept 2011	Environmental Aspects and Impacts Register	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.	In December, use of ECO Card System has been facilitated for all BIL staff. The system is actively used by BIL.	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.4.2	Sept 2011	Construction Camps		Rec.	Concerning PTs camp sites rental agreements, IEC recommends that BTC to make the final decision as to whether to define an additional modification to the MOC to consider the possible conversion of PT sites rental agreements into land acquisitions, as communicated in 2010.	Extending the MOC for facilities camp sites was put on hold due to the recent developments between BIL and BTC Company. A package (as known as Amendment 3 to the BIL Operating Agreement) including provision of permanent accommodation at facilities is being evaluated and discussed between BIL and BTC Company.	OPEN
4.5.3	Sept 2011	Non-Hazardous and Hazardous Waste	Despite observations of good operating standards at construction camp CWAA's during audits, IEC notes that only the CWAA at PT1 is currently in progress while no work schedule for constructing permanent CWAAs at the other fixed facilities has been established.	Rec.	IEC recommends that BIL/BTC speed up the process of developing work scopes and related plans for the construction of the new CWAAs in replacement of those currently in use.	BTC Company approved BIL's proposal for implementation of PT1 CWAA through e-MOC system. Technical specifications prepared by BIL; procurement process is ongoing. Although there are degradations, the existing CWAAs are all compliant with the ESAP.	OPEN
4.5.3	Sept 2011	Non-Hazardous and Hazardous Waste		Rec.	IEC recommends that remaining BPEO studies for optimizing hazardous waste disposal and for the identifying sustainable options for the recycling and reuse of wastes be completed by the time of the 2012 audit. BPEO study results and construction of new CWAAs at fixed facilities should be included in the Waste Management Plan review.	The ESAP Waste Management Plan review and update has been initiated by BIL. It is expected to submit the revised plan to Lenders by Q2, 2012. The Plan will include the changes in line with the BPEO study outcomes. Finalization of the hazardous waste section of the BPEO study is ongoing (there has been some delays due to the recent changes in the national regulation on cement factories hazardous waste disposal operations).	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.5.6	Sept 2011	Wastewater Management		Rec.	A quicker response method, like the use of field analysis kits to react to anomalous concentrations of coliforms should be implemented to monitor WWTP effluent. This would prevent the long term discharge of non compliant effluent but, more importantly, it would also allow a much prompter activation of necessary corrective actions.	On-site monitoring kits were purchased for all facilities for pH, turbidity, dissolved oxygen and residual chlorine and relevant trainings provided to BIL staff. There was no outcome of number of waste water feasibility studies undertaken between 2007 and 2010 to purchase coliform analysis kits to sites.	CLOSED
4.5.6	Sept 2011	Wastewater Management		Rec.	It is recommended that repair works of the PWHP at PT3, including replacement of the damaged HDPE geo-membrane underlying the geo-textile coverage be carried out as soon as possible. At the same time, an ad-hoc monitoring of groundwater is also recommended.	A similar issue was identified during the transition period in 2006; thus the leaking points were fixed by BOTAŞ Project Directorate and handed over to BIL in 2007. As this work falls under BIL's routine maintenance scope, BIL is expected to take identified actions and repair the leaking points.	OPEN
4.5.6	Sept 2011	Wastewater Management	The process of enhancing the performances of the WWTPs at PT2 and PT4 facilities as well as the implementation of the upgrade for SWPs, PWHPs and OWSs at all fixed facilities is progressing quite slowly as a consequence of long time taken for preparing an MOC and the associated approval process.	Rec.	It is recommended that BIL and BTC take their own responsibility in order to speed up the implementation of the upgrading to be able to close this long-standing issue.	BTC Company approved BIL’s proposal for the predefined waste water treatment systems enhancement items such as enhancing PT2 and PT4 WWTPs as well as PWHPs and SWPs, bypassing SWPs, through e-MOC system. Technical specifications for all approved MOCs were prepared by BIL; procurement process for each item is ongoing.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.5.6	Sept 2011	Wastewater Management	Now the issues associated to the OWS have been identified and a site-specific action plan has been developed.	Rec.	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.	The MOC for enhancing OWSs at facilities have been received from BIL in Q4, 2011. The internal review and approval process of BTC Company is ongoing.	OPEN
4.6.2	Sept 2011	Pollution Prevention and Environmental Monitoring	Inconsistent air quality data for benzene and other BTEX compounds were monitored in 2010-2011 measurement campaigns at the CMT. Air quality monitoring data review study indicates that ambient BTEX levels are increasing in the project area and anticipates that 2011 benzene levels may exceed the annual limits, a fact which has been in reality observed from 2011 quarterly measurements. BTC explains high concentrations of benzene as a consequence of incorrect data, but there is no evidence available to prove or disprove that these high concentrations are due to erroneous measurements.	Rec.	IEC recommends that the Project reconsiders air quality monitoring finalities at CMT, in particular with references to the toluene, ethylbenzene and xylene parameters. Regular indoor monitoring of BTEX for workers' exposure is also recommended.	2011 Benzene limits have not exceeded the limits (refer to Section 4.2.3). Starting from 2006, BIL was conducting regular ambient air monitoring at CMT workplaces such as general facilities (refer to ESAP EEMP Figure 5.1). In 2009, a review of ambient air monitoring programme was conducted by BTC Company contractor that the results were shared with IEC during 2009 Audit. The review recommended to remove those two monitoring locations from the programme as there was no exceedance; thus BIL's monitoring programme was updated reflecting recommended changes of the review (also refer to Section 4.2.3.1).	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.6.2	Sept 2011	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, only in 2011 did BIL start a groundwater and surface water monitoring at Turkish AGI locations. At the time of 2011 visit IEC was informed that monitoring results were not available.	Rec.	The issue is therefore considered to be still open.	Groundwater monitoring has been conducted in 2011 at CMT and PTs. The monitoring programme is planned to be conducted annually at all sites. However, some of the parameters are monitored quarterly at PT4. After completion of monitoring activities in December 2011, the evaluation of the results and reporting process was started. The process is still ongoing.	CLOSED
4.8.2	Sept 2011	Erosion Control, Reinstatement and Biorestoration	Wheels tracks along the ROW were noted during the September 2011 field visit with no apparent justification.	Rec.	Given that there was no clear understanding of who is using the ROW for driving, IEC recommend BIL patrol teams to carefully monitor and report potential violations of the ROW.	Patrol teams report wheel tracks along the ROW. Since PCR follows this issue, all findings with regard to this subject regularly transferred to PCR. Additionally, annual refreshment trainings that include this issue are given to the patrolling teams before commencement of ROW patrolling activities.	CLOSED
4.8.2	Sept 2011	Erosion Control, Reinstatement and Biorestoration	As of September 2011, IEC confirms the positive trend already noticed in 2010 on the progress made toward implementing a Preventive Corrective	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	2011 physical monitoring report was analyzed and integrated into GIS system. For the following years, it is planned to carry out the physical monitoring activities by ROW patrol teams. All site observations will be uploaded to GIS and followed up through GIS regularly by both Environmental Team and ROW Technical Management Team.	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
			Action Request management system accessible on BIMS and the enforcement of the ECO-CARD action tracking system.		monitoring data is updated on a current and consistent basis.		
4.8.2	Sept 2011	Erosion Control, Reinstatement and Biorestoration	Major erosion and landslides were effectively addressed with the 2010-2011 major repair works contract and specific monitoring of high risk landslide area has been undertaken.	Rec.	In order to prevent further potential geohazard, IEC reiterates the recommendation made in 2010 for BIL and BTC to define a monitoring strategy 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 classification should also be able to allow for the early identification and of landslide risk along the ROW.	ROW risk analysis for potential geohazard was conducted by BTC Company by using BIL GIS. Based on this study high risk areas were identified and repair works at these points are already started and about to be completed.	CLOSED
4.8.4	Sept 2011	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.	BIL initiated operational access road strategy study in 2011. Process is still ongoing.	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
4.9.2	Sept 2011	Ecological Management		Rec.	IEC reiterates our recommendation to intensify restoration and revegetation efforts in those habitats where natural conditions make the regrowth very slow or where third party works (e.g. optic fibre cable laying on the adjacent BOTAŞ pipeline, areas of third party crossings) deteriorated pre-existing good vegetative cover.	The locations where vegetation cover is prominently weak comparing with the off-ROW were identified by patrol teams and environmental team through ecological monitoring in 2011. These locations will be assessed jointly with BIL Environment Team in order to identify the actions to be taken in terms of biorestoration. Necessary actions will be planned and taken accordingly.	OPEN
4.10.2	Sept 2011	Community Liaison		Rec.	BIL needs to carefully re-examine if the PCR organization is appropriately structured to manage a scope of work where grievance management is a minor component of their overall workload (53 unresolved complaints vs. 111 land use violations to manage).		CLOSED
4.10.2	Sept 2011	Community Liaison		Rec.	If it is really not practical to comply with employment KPIs, the KPIs need to be revised to reflect actual conditions, presented with a good explanation. That stated, it is not obvious to the IEC why the employment discrepancy with KPI is so large. Ceyhan is one of the biggest districts in Turkey where it should be possible to employ trained, semi-skilled people from the region, especially when it is		OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compl.	Recommendation for Improvement	Action Taken	Closure Status
					considered that semi-skilled workers were found in the rural environments surrounding the pump stations. We also believe that there are opportunities for local employment though RDI projects implemented in the region that could help achieve the original KPIs.		
4.13.2	Sept 2011	H&S		Rec.	IEC recommends that adequate and regular workplace monitoring systems be implemented for VOCs and BTEX at the CMT.	Starting from 2006, BIL was conducting regular ambient air monitoring at CMT workplaces such as general facilities (refer to ESAP EEMP Figure 5.1). In 2009, a review of ambient air monitoring programme was conducted by BTC Company contractor that the results were shared with IEC during 2009 Audit. The review recommended to remove those two monitoring locations from the programme as there was no exceedance; thus BIL's monitoring programme was updated reflecting recommended changes of the review (also refer to Section 4.2.3.1).	CLOSED

APPENDIX 4: STATUS OF RECOMMENDATIONS RAISED THROUGH SRAP MONITORING

Appendix 4 contains the following for AGT:

- Status of key recommendations raised during previous SRAP visits that were open at the time of the 2008 Annual E&S Report (see Table A4.1); and
- The tables provide a transparent mechanism to demonstrate follow-up and close-out of all actions to address recommendations. The table shows that all SRAP recommendations have been closed and countries reported readiness for the SRAP completion audit. In accordance with the audit scope, each country has selected a contractor to do the quantitative survey. After completion of the quantitative survey, the SRAP Panel undertook a qualitative survey as part of the completion audit in 2009-Q3. The final completion report outlines 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 2011
1	Apr 2008	BP to compensate landowners interested by orphan land transactions against the cost of registering the remaining piece of their land (Azerbaijan only).	Azerbaijan – Ongoing
2	Apr 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	Apr 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	Apr 2008	BTC/BP to commission a mid-term evaluation of CIP 2 not later than Spring 2009.	Azerbaijan – Completed Georgia – Completed.
5	Apr 2008	BTC to update tabulations of project affected land owners 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	Apr 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 be in place by 2008.	Azerbaijan – Completed Georgia – Completed Turkey – Completed
7	Apr 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	Apr 2008	Continued vigilance is required by BTC/BP in Georgia and Azerbaijan to ensure that the important role of the security of the pipeline is carried out in a manner that is appropriate and not antagonistic towards the communities.	Azerbaijan – Ongoing Georgia – Completed Turkey – Completed
9	Apr 2008	BTC 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).	Turkey – Completed

No	Date	Recommendation	Status as of end December 2011
10	Apr 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).	Turkey – Completed
11	Apr 2008	Land owners/users whose names and second crop areas were assessed by BTC and BOTAŞ/DSA should be paid second crop compensation, unless third-party investigation by BNB gives clear, reasoned alternative recommendations (Turkey only).	Turkey – Completed
12	Apr 2008	BTC 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).	Turkey – Completed
13	Apr 2008	BTC to ensure that reinstatement related issues are reflected adequately in the grievance mechanism (Turkey only).	Turkey – Completed
14	Apr 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).	Turkey – Completed
15	Apr 2008	BIL to complete introductory and follow-up meetings in all villages as soon as possible (Turkey only).	Turkey – Completed
16	Apr 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).	Turkey – Completed
17	Apr 2008	BIL to resolve current resource constraints (personnel and vehicle) in a perspective of increasing field presence and visibility (Turkey only).	Turkey – Completed
18	Apr 2008	BIL to refresh villagers' awareness about avenues available to lodge grievances (Turkey only).	Turkey – Completed
19	Apr 2008	BTC with BNB as independent monitors to ensure the quality assurance of the grievance management system (Turkey only).	Turkey – Completed
20	Apr 2008	BIL to place somewhere visible within the villages, the number of people employed in each village (Turkey only).	Turkey – Ongoing
21	Apr 2008	BIL to train unskilled employees to take up semi-skilled jobs (Turkey only).	Turkey – Ongoing
22	Apr 2008	BTC and BIL to explore and identify supply chain opportunities for local firms (Turkey only).	Turkey – Ongoing
23	Apr 2008	BTC and BIL to provide targeted support and capacity building to local firms to take up supply chain opportunities (BTC already doing this to a certain extent but should increase efforts) (Turkey only).	Turkey – Ongoing
24	Jun 2007	SRAP Panel to provide a cross-country framework for livelihood restoration surveys to assure a level of consistency in approach.	Azerbaijan – Completed Georgia – Completed Turkey – Completed
25	Jun 2007	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
26	Jun 2007	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

No	Date	Recommendation	Status as of end December 2011
27	Jun 2007	In all 3 countries, BTC to develop action plans to address/manage situations in which the landowner refuses to sign the land hand-back agreements.	Azerbaijan – Ongoing Georgia – Completed Turkey – Completed
28	Jun 2007	In all 3 countries, BTC 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.	Azerbaijan – Completed Georgia – Completed Turkey – Completed
29	Jun 2007	Regular checks to be made on CIP 1 infrastructure to ensure that they are being properly managed and maintained.	Azerbaijan – Completed Georgia – Completed Turkey – Completed
30	Jun 2007	BTC 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).	Azerbaijan – Ongoing Georgia – Ongoing Turkey – Ongoing In Turkey each project has a special strategy for AGI affected villages
31	Jun 2007	BTC/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 Georgia – Completed Turkey – Completed
32	Sep 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	Sep 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.	Azerbaijan – Completed Georgia – Completed Turkey – Completed Report is awaited from SRAP Panel (Action on SRAP)
34	Sep 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	Sep 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	Sep 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. Azerbaijan – Completed Georgia – Completed
37	Mar 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.	Azerbaijan – Completed Georgia – Completed
38	Feb 2004	BTC to continue to reinforce its anti-corruption stance with all levels of government.	Turkey – Completed Azerbaijan – Completed Georgia – 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 Head s of the Enterprises 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. ST	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	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	BP	Priority

Issue	Project Principles	Performance	Recommendations	By	Priority
		experiencing problems, related to issues such as irrigation and stones in the fields etc. 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.	compensation; and (3) to recommend and monitor BTC remedial measures. 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. c. A budget to be made available to carry out remedial works.		
Access strategy	While driving on the ROW 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.	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.	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. Closed	BP	High
BP Social Team and CLOs	Positive community engagement is essential in not only mitigating negative impacts but also ensuring protection of the pipeline.	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.	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. Closed	BP	Medium
AGI affected households	Livelihood restoration for all project affected people.	Quantitative survey showed that three households out of ten surveyed said that BTC had a small negative impact on their livelihoods.	g. Check livelihood situation of AGI households that have experienced a negative impact.		Medium
Chobanabdali Land Boundary Issue		CLEE is carrying out some work on land certificate changes which were to be issued in March 2010.	h. The output of this work needs to be made available to the SRAP Panel as a part of RAP completion.		Medium

Georgia

Issue	Project Principles	Performance	Recommendations	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.	i. 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.	j. 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.	BTC/BP	High (by end of July 2010)
			k. 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.	l. 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.	m. 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)
		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.	n. 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.	BTC/BP	High (by end of July 2010)

Issue	Project Principles	Performance	Recommendations	By	Priority
INFRASTRUCTURE REINSTATEMENT					
Wear and tear on village infrastructure (especially roads/farm roads) caused by BTC/BP activities	Mitigate damage caused to community infrastructure.	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.	o. 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.	BTC/BP	High (by end of 2010)
PUBLIC CONSULTATION AND DISCLOSURE					
Effective community communications	Communities to be regularly consulted and kept fully informed about BTC activities.	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. 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.	BTC/BP	High (by end of July 2010)
SOCIAL MANAGEMENT SYSTEMS AND RESOURCES					
Social management team resources	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)	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.	q. 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.	BTC/BP	High (by end of July 2010)

Northern Section, Turkey

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
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 *zilyet* 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 Company/BIL	Moderate	**CLOSED:** BTC Company and BOTAŞ & DSA carried out a separate field study in 2006 and 2007 on misidentified zilyet owners, prepared list of villages and affected landowners together. Then closed-out all valid complaints related with misidentification of zilyet issues by making second payments for the same parcels to the right owners. The process has been monitored by the Third Party NGO. This NGO's view on effective close-out of these complaints was stated in their readiness statement which was sent to SRAP before. There's no zilyet land in Yeniköy since cadastral survey was conducted long before BTC acquisition. Therefore this comment is not understood by us. Land exit protocols signed for all parcels (in total 74) in Yeniköy during land exit process. In addition, BIL CLOs and BTC E&S team visited all villages along the BTC route including Yeniköy village to discuss open complaints in 2009. Most of the complaints were related to reinstatement issues all of which were resolved as part of the reinstatement activities carried out between 2009 - 2011 by BTC Company.

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						BTC Company social team conducted an internal audit in April & May 2010 and checked the status of complaints in all locations through the trackers and confirmed these complaints through interviews with complainants. No outstanding land acquisition issue was observed during this audit.
Temporary land for camps (PT1, PT2)	Return land to owners for use to minimize impact on livelihood.	In each location where BTC Company was renting land for camps, there were requests from landowners to know how much longer their land would be required.	b. BIL/BTC Company 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 Company/BIL	High (by end of March 2010)	**CLOSED:** BIL conducted a field study in late 2009 and identified locations where they can hand-back to original owners in all camp stations. 38% of the lands in all camp locations were handed back to original landowners and new agreements signed for those parcels which will be used for the operation. BIL made payments to all landowners living in the villages. BTC Company offered BIL to expropriate these locations permanently. BIL is carrying out a detailed study to identify the locations where they will build permanent buildings in the future. Then the land will be expropriated in line with the RAP standards.
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	c. BIL/BTC Company 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 Company/BIL	High (ongoing)	**CLOSED:** Another survey was conducted to identify additional complaints which were not in the list. A complete list was prepared by BTC Company and the scope was provided to the Contractor company. The company reinstated all areas in the pipeline route. In fact, the

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
		number of unresolved reinstatement complaints.				contractor completed many additional works as good will gestures when they were in the field which were recorded by the project team.
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 Company, 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 Company	High (by end of 2010)	**CLOSED:** Cadastral survey which was carried out in North East Anatolia by the General Secretary of Cadastral office in 2008 and 2009 clarified the ownership status of the land in these villages (this is outside the scope of BTC project). However by the time of the SRAP audit there were rejections to the Cadastral survey results. Some of the landowners rejected the results at court. The court process completed. Meanwhile BIL stopped payments until resolution of court cases. When the process was completed, BIL signed the new rental agreements with the newly identified owners. This issue is resolved.
			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 Company	High (by end of 2010)	**CLOSED:** As stated above, all new landowners identified through cadastral survey received rental payment for 2010.Landowners who incorrectly received rental payments in the past are not unduly penalized.
Loss of grazing land/impact on Söğütlükaya's herd carrying capacity.	Restore/improve livelihoods of project affected households.	Some villagers claim that BTC/the State has alienated a large part of Söğütlükaya's prime grazing land for PT1 & related works. There is limited alternative land available for	f. BTC Company to obtain information on total Sogutlukaya village land resources from the Ministry of Agriculture and Rural Affairs & have a livestock	BTC Company	High (by end of July 2010)	**CLOSED:** Söğütlükaya village owns 316 ha pasture lands in total. 13.4ha of land was permanently expropriated and an additional 11ha of land rented for the campsite. At PT1 site

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
		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.	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.			location, %42 of the parcels is owned by the state and %58 of the parcels is owned by private people. That means not all parcels are commonly owned pasture lands/state lands. Despite this fact, even if we consider all of these private lands as pasture land, in total 8% of the pasture land owned by Söğütlükaya is currently used for BTC operation (including camp site). Livelihood Impact assessment for all AGIs including PT1 was already carried out by University of Ankara, Department of Agricultural Economy in 2003. In Söğütlükaya, loss of income arising from the damages for the common land owned by the Treasury but used by the villagers for grazing purposes was identified as 28.8 billion TL and this was paid to village budget from RAP Fund. In 2005, another impact assessment study was carried out for AGI affected villagers. The AGI survey report was shared with the SRAP Panel. They concluded in their report as "The overall analysis of the research results reveals that no significant impact is expected on owners or users of land expropriated, be it for land take to farmland ratio below ten percent or above. The fact that there was not any significant change in agricultural and household income levels of owners and users from pre-expropriation period to post-expropriation and

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						that the levels of the said income remained above the sufficient farm income indicate that taking any measures for impact alleviation is not necessary." In addition, in the last quantitative survey conducted by SRAP Panel for RAP Close-out audit in 2008, where AGIs affected landowners were given priority and according the statistical results there's no significant difference in the income levels of affected and unaffected households at PT1. Finally, BTC Company through its CIP has been supporting animal husbandry and agricultural activities through providing qualified seeds, conducting animal vaccination, artificial insemination, etc. in every village. However, priority is given to AGI affected settlements. External audits proved that CIP helped to increase villagers' income level, in addition to compensation measures mentioned above.
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.	g. BTC Company to monitor village concerns about water supply following completion of the new pipe installation. If warranted by continued high levels of concern, BTC Company to instigate regular testing of water as supplied at the village to address concerns.	BTC Company	High (by end of July 2010)	**CLOSED:** Building of a new domestic water pipeline was requested by the villagers of Söğütlükaya village. The reason was not the contamination of the water as reported here. It was actually because the physical life of the existing pipeline was completed. BTC delivered a new water pipeline which is outside the fences of PT1. No remaining complaint regarding this issue is left.

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						Necessary tests are conducted to the samples taken by a third party environmental organisation on monthly basis. No issue has been raised by the third party with regard to contamination of water supply in Söğütlükaya.
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	h. BTC Company 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 Company	High (by end of July 2010)	**CLOSED:** BIL have conducted monitoring on 11.08.2010 from the trough, site perimeter channel and the downstream point of the stream. According to the results, the Total Coliform was measured as 23 MPN/100ml at the site perimeter channel inlet point (that can be considered as the upstream of the stream and the trough) whereas measured as 460 MPN/100ml at the trough and the stream (20 times greater). Ruling out any analytical errors, this can be attributed to the presence of another source of contamination affecting the trough and the stream itself which can be: • on the way from the perimeter channel inlet to the stream and the trough (in other words through the perimeter channel itself), or • already existing on the stream bed and inside the trough naturally. However the source of contamination cannot be clearly identified as there is not enough evidence. In addition, BTC Company's environmental contractor (Golder) has conducted

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						monitoring on 03.08.2010 from the trough and the site perimeter channel. No contamination was observed at both monitoring points according to the results. In summary, the evaluation of the BIL's and Golder's analysis results did not provide an evidence of any PT1 related discharge that would justify the community complaint.
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.	i. In consultation with affected landowners, BIL/BTC Company 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. j. BIL/BTC Company to pay particular attention to ensuring that owners are consulted and kept fully informed about progress throughout the design and implementation process.	BIL/BTC Company	High (by end of July 2010)	i) **CLOSED:** BTC Company conducted several meetings at PT2 village, Çöğender and completed the detailed design of PT2 Flood permanent mitigation measures. Concerns and suggestions of the landowners and village muhtar were also considered during the design phase. BIL has now finalized the construction of PT2 flood permanent mitigation measures. j) **CLOSED:** Landowners participated in the site investigation on PT2 flood permanent mitigation measures together with BTC Company, BIL, BOTAŞ/DSA, Gendarmerie commander. In addition, BOTAŞ/DSA informed that the expropriation of the required area for dam&main culvert construction was finalized. BIL CLOs were also involved in the consultation process. BTC Company monitored the potential impacts of the issue and take additional measures if the design will create any unexpected problems in future.

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
Reinstatement of off-ROW spoil disposal sites	Restoration of productive land to pre-project condition.	4 Çöğender 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 Company 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 Company	High (by end of July 2010)	**CLOSED:** BTC Company investigated the issue. Muhtar and other villagers stated that this area was rocky and dry before the BTC project. He stated that it was not productive and even the landowner used to cultivate the land every three years since he could get harvest on yearly basis. However, BTC Company still reinstated the land by bringing productive soil and cleaned up rocks on this land during remedial activities in 2009.
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.	l. BTC Company/BIL, in consultation with the Cogender farmers, to investigate permanent solution to enable farmers to resume normal access of their pasture lands. m. BTC Company to investigate extent of losses (calves, cost of temporary pasture) incurred by village and develop an appropriate compensation response.	BTC Company	High (by end of July 2010)	**CLOSED:** BTC Company built approximately 4 km road late 2009. It is much longer and wider than the initial path way, they used to use to access to their pasture lands. **CLOSED:** Damage to animals were investigated but could not be proved. Therefore it is difficult to justify this claim to consider compensation. About renting an alternative road and making payment about 1500 TL/3 months: The village Muhtar and other elders committee stated that it's the first time they heard this issue. Basically they did not rent an alternative road to access to their fields. The villagers signed a compliant close-out letter.

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						BTC Company has a special CIP strategy for AGI affected villages including Çöğender. BTC Company has supported several projects in the village (including drinking water, village road, multi-purpose village common house, shepherd house, animal husbandry and agricultural trainings, vaccination and artificial insemination of several animals) and will continue to support these villages.

Southern Section, Turkey

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
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.	n. 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 Company/BIL	Moderate	**CLOSED:** The list of villages where the land acquisition process is not completed is being prepared and submitted to BTC Company on regular basis by BOTAŞ/DSA. 98.12% of the acquisition is now completed. The remaining ones are due to ongoing court cases. However, we would like to underline the point that in all court cases (Art 27) BOTAŞ paid the value of the parcel to the bank account prior to access and shareholders will receive their parts when the shares are identified by the court. BTC Company even accepted to pay the legal cost of administrative tasks, transportation costs etc from RAP fund if the multiple

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
						shareholders can come together for transfer of ownership right however the remaining cases are generally related with absentee owners. The issue cannot be resolved without a court decision. All shareholders will receive their shares with interest at the end of the court case.
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.	o. BIL/BTC Company 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 Company/BIL	High (ongoing)	**CLOSED:** Another survey was conducted to identify additional complaints which were not in the list. A complete list was prepared by BTC Company and the scope was provided to the Contractor company. The company reinstated all areas successfully. In fact, the contractor completed many additional works as good will gestures when they were in the field which were recorded by the project team.
Productivity problems due to problems with 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.	p. BTC Company and BIL to develop a clear strategy for productivity loss due to reinstatement problems with the use of an agricultural expert.	BTC Company/BIL	High	**CLOSED:** BTC Company identified areas which needed to be reinstated though external agricultural experts and the reinstatement of those areas were completed between 2009 and 2011.

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
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 Çığcık village where roads damaged during construction were reinstated but problems remain due to subsidence.	q. 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 Company/BIL	High	**CLOSED:** During construction, BOTAŞ Project directorate and its contractors used entry and exit protocols for village roads. All roads used by the project were reinstated however even after 6 years villagers expect BTC Company to continue reinstatement when the roads are damaged naturally. This is an issue in some other parts of the pipeline as well. BTC Company can not be responsible for any damages caused after reinstatement of these roads. With regard to the complaint in Çığcık village: In complaints' tracker, complaints no: 597, 605, 625, 630 which were related to the same issue in Yukarıçıyanlı, Yenigün, Topraktepe and Cığcık villages were defined as NOT LEGITIMATE. Because these roads are village roads and should be repaired by District Special Administration. However there were other complaints No: 621, 622, 623, and 624 in Topraktepe and Cığcık villages. Complaints were assed in Lot C reinstatement Scope during the reinstatement activities in 2011. Most of these complaints were related to land roads defined as not affected by BTC Projects.

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
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.	r. A mechanism should be developed to check the grievance log. This could be a combination of	BTC Company/BIL	Moderate	**CLOSED:** BTC Company and BIL PCREs went through all of the complaints in 2009 and corrected/clarified these complaints prior to reinstatement activities. BTC Company also checks the list of complaints on quarterly basis through grievance log and through site visits. Moreover, monitoring of the complaints is also done through internal audits of BTC Company both three-country audit and BTC Company Turkey internal social audit on yearly basis.
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.	s. BIL CLOs to have clear systematic procedures in place for regular community engagement and information dissemination, paying particular attention to vulnerable groups	BTC Company/BIL	Moderate	**CLOSED:** BTC Company prepared community leaflets and distributed the CLOs contact details to every single village. In addition Village Information boards were established in the villages where contact details are presented. BIL PCREs are regularly visiting the villages as part of their daily work. ROW monitoring and maintenance teams who are working closely with PCREs are at site every day. Villagers can access to BIL if they want to. The number of complaints from various villages proves that the system is working. In 2011, BTC Company and BIL refreshed land use restriction and third party crossing procedures through an awareness campaign in all villages along the route. A film was produced and new

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
						brochures were distributed to landowners in all villages again. In addition to complaint management mechanism, vulnerable groups are dealt within the CIP scope. Priority is given to vulnerable people in all CIP projects such as beekeeping, greenhouse, animal husbandry etc. In case of any complaint raised by vulnerable groups to CIP IPs, these are transferred to BIL.
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.	t. BIL CLOs to develop a system of continued information refreshment and update.	BIL	Moderate	**CLOSED:** BIL PCRE's are giving information and training to all public institutions and villagers about these procedures periodically and when it is needed refreshment trainings are delivered. BIL technical team is now managing the third party crossings issue together with the ROW monitoring and maintenance team. This team is at site all the time monitoring the land use on the ROW. The decrease in the violations indicates that there's more systematic approach to third party crossings issue. In addition, BIL and BTC Company initiated another awareness campaign on land use restrictions and third party crossings in 2011. Training materials were prepared by BTC Company (films and brochures etc).

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
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.	u. 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 Company/BIL	High	**CLOSED:** BIL have conducted a field study in late 2009 and identified locations where they can hand-back to original owners in all camp stations. 38% of the lands in all camp locations were handed back to original landowners and new agreements signed for those parcels which will be used for the operation. BIL made payments to all landowners living in the villages. BTC Company offered BIL to expropriate these locations permanently. BIL is carrying out a detailed study to identify the locations where they will build permanent buildings in the future. Then the land will be expropriated in line with RAP standards.

CASE STUDY 1

RESTORING PLANT LIFE ALONG THE BTC ROW

A new initiative for restoring plant life has begun along the BTC ROW and is being applied to all sensitive areas in the ROW in Azerbaijan.

The initiative involves cultivating *Artemisia lerchiana* (Wormwood) and *Salsola nodulosa* (Dane-wort) plant species, which have the shape of shrubbery when fully grown.

The BTC project team found that the seeds of these species did not grow well in less than ideal conditions, so they developed an initiative to germinate seedlings using a mix of clay soil, forest soil and sand. Given that the seedlings are highly sensitive to acidity, the team also developed a fertilizer mix to support sprout growth and increase root mass. This approach has helped to make the sprouts of both these species stronger and more able to survive when planted along the ROW.

Once the sprouts are planted, the BTC project team will continue to support the development of the Wormwood and Dane-wort plants through regular irrigation, softening of the soil and removal of grass weeds.

Cultivating of Artemisia lerchiana for ROW biorestoration

Natural Artemisia lerchiana on the ROW

Natural Salsola nodulosa on the ROW

Planted Artemisia lerchiana on the ROW

Planting Artemisia lerchiana on the ROW

CASE STUDY 2

WILDLIFE REHABILITATION CENTRE OPENS FOR BTC GEORGIA

Caring for wildlife and protecting sensitive flora and fauna habitats is a key commitment for BTC Georgia. This commitment led to the opening of a wildlife rehabilitation centre, the first in Georgia, at Pump Station (PSG) 1 during 2011.

The unmanned facility can be activated in emergencies to provide treatment and care for injured or potentially vulnerable wildlife species, with the aim of eventually returning them to their natural habitats.

Both the BTC and Western Route Export pipelines in Georgia pass through diverse habitats, which host a variety of bird species, amphibians, reptiles and some marine mammals that inhabit the Black Sea aquatory. These include numerous rare migratory bird species.

Cattle Egret, r. Mtkvari Island

The new wildlife rehabilitation centre will support animals from Gardabani and surrounding areas. The centre is the result of a 2-year effort from a dedicated project team including BTC's Safety and Organisational Risk team, operations management and the BTC Georgia Environment team.

The project team's main task was to rebuild and transform an old recreation building at PSG 1 into a world-class response base for oiled wildlife. A team of 10 people, including contractors, was involved in the design and reconstruction of the centre, to build a facility equipped with pools, washing basins and containers for medications to treat injured wildlife. BTC Georgia also trained volunteers, including local certified veterinarians, in oiled wildlife response.

The training was facilitated by the International Bird Rescue organisation and provided a rare opportunity for Georgian volunteers to become acquainted with the basic protocols and techniques used in international oiled wildlife first response. It also provided the trainees with the essential principles involved in stabilising and rehabilitating affected wildlife.

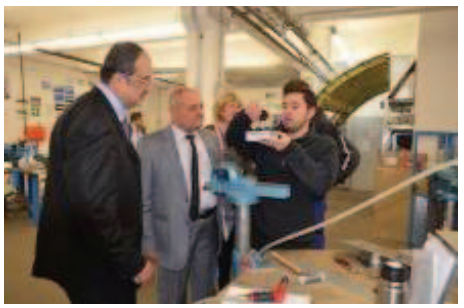
As part of their training, the volunteers participated in an emergency exercise at the PSG 1 wildlife response facility. This allowed participants to familiarise themselves with wildlife response appliances and to learn the core principles underpinning the BTC Georgia emergency response plan.

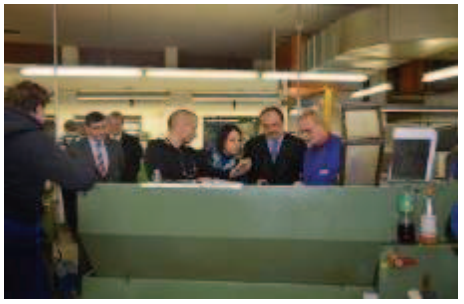
The BTC Georgia Compliance and Environmental team plans to further extend this training to BP local staff and a greater number of volunteers.

In addition to BTC's trained volunteers, the wildlife rehabilitation centre is underpinned by support from experienced international organisations that specialise in oiled wildlife rehabilitation. The centre also involves local NGOs that bring local expertise and knowledge on the types and distribution of faunal species, as well as the ability to quickly mobilise committed and motivated volunteers when needed through their membership networks. These volunteers provide support with the capture, stabilisation and transport of oiled wildlife, administrative and active cleaning/rehabilitation, and general care/feeding of recuperating wildlife.

CASE STUDY 3

WORK BEGINS ON CEYHAN BUSINESS DEVELOPMENT CENTRE





A new Ceyhan Business Development Center (known as CEYGEM) will open in 2012 to provide a vocational training and business consultation facility and, in particular, support Ceyhan companies with developing capabilities for international business.

The new Center, located near the Ceyhan Marine Terminal, is a public-private partnership between BTC Company, the SME Development Organization of Turkey and the CEYGEM Company which is jointly owned by: the Union of Chambers and Commodity Exchanges of Turkey; the Ceyhan Chamber of Commerce; the Chamber of Trade Exchange; the Chamber of Agriculture; and Ceyhan Tradesmen-Craftsmen Union and the Ceyhan Municipality.

The permanent CEYGEM facility builds upon BTC's existing employment and entrepreneurship support programme, which has helped to build the skills of people living around the CMT to improve their quality of life and ability to earn a sustainable income. CEYGEM is taking this approach further, by providing financial and technical support for start-up businesses, and by developing a qualified labour force through vocational training provided at the Center.

Study visit to a Hamburg training institute

While construction of the CEYGEM building proceeds under a project supported by BTC grant funds, the project team has begun developing the structure of vocational training offered at the Center. This has involved Ceyhan Chamber of Commerce officials, who are founding members of CEYGEM, visiting BfW/INAB, and a training institution in Hamburg, Germany, to exchange experience and observe good training practices. The visit culminated with a co-operative agreement between BfW/INAB and the Ceyhan Chamber of Commerce to jointly develop an internationally accredited welder training programme. The programme will involve welder experts being trained at CEYGEM and working at both local industrial enterprises and on pipeline construction from 2012. The training also includes a Hamburg phase where the programme's trainers are trained and licensed in Hamburg in accordance with Deutsches Institut für Normung, the German Institute for Standardization (DIN) standards, with certificates validated by the EU.

Turkey's Consul-General Mr. Devrim Öztürk said the co-operation between CEYGEM and the Hamburg-based BfW/INAB reinforced Turkey's commercial relationship with Germany. "Commercial developments – as is the case in and all around Turkey – bring along an increased demand for qualified personnel. This vocational co-operation will also reinforce the commercial relationship between the two countries. The consulate is ready to give all necessary support to this project." Mr. Öztürk said.

BfW Manager Mrs Heike Langmaack expressed that the co-operation with the Ceyhan Chamber of Commerce will also bring many gains for BfW: "We believe that the vocational co-operation will promote the commercial relationship between Germany and Turkey even further. A mutual exchange of ideas is very important to us." she said.

WORK BEGINS ON CEYHAN BUSINESS DEVELOPMENT CENTRE

İŞGEM HAKKINDA / ABOUT ISGEM

İş Geliştirme Merkezleri (İŞGEM), ülkemizde ve dünyada girişimciliğin desteklenmesi, istihdamın artırılması, bölgesel kalkınmanın sağlanması için kullanılan önemli destekleme araçlarından birisidir.

Yeni girişimlerin ve mevcut KOBİ'lerin desteklenmesinde İŞGEM ve benzeri yapıda oluşturulmuş destekleme araçları giderek yaygınlaşmaktadır.

Ülkemizde İŞGEM'lerin kurulması ve yaygınlaştırılması çalışmaları KOSGEB tarafından koordine edilmektedir.

Business Development Center (ISGEM) is one of the effective tools for maintaining regional development, increasing employment, supporting entrepreneurship in our country and in the world.

The supporting tools developed in a similar structure as ISGEM have become widespread in supporting new initiatives and existing small and medium sized enterprises (SME).

In our country, the establishment and enhancement of ISGEM is coordinated by KOSGEB (Small and Medium Enterprise Development Organization).

CEYGEM CEYHAN İŞ GELİŞTİRME MERKEZİ
Ceyhan Business Development Center

CASE STUDY 4

BTC TURKEY EXPORTS COMPLIANCE AND ENVIRONMENT TEAM WINS AGTR 2011 ENGINEERING AWARD

BTC Turkey's Exports Compliance and Environment team is celebrating their success with achieving the company's AGT Region 2011 Engineering Award for Technology and Plant Optimization.

The team was recognised for their project titled 'Minimizing Waste in Waste', which identified opportunities to improve waste management in areas such as:

- ✓ The safe and efficient transportation of domestic and non-hazardous recyclable wastes; and
- ✓ Addressing dependencies on a single domestic waste disposal site (in Turkey there was only one compliant domestic waste landfill site that is located approximately 1000km from the BTC facilities).

The team's project achieved a 61% reduction in the total kilometres driven to transport and dispose of waste through optimising the transport route and evaluating new in-country transport and disposal options.

This will achieve a 61000km annual saving on waste transport, significantly reduce associated HSE risks and, at the same time, achieve a 56% cost saving on waste disposal. It will also result in a 61% reduction in emissions of GHG and other pollutants from transportation.

More importantly, the project will develop the operational and technical waste disposal capacity of local municipalities and set an example on local capability improvement and optimisation for the entire AGT Region.

The BTC Exports Compliance and Environment Team celebrates sweet success.