BTC Project
Environmental and Social Annual Report (Operations Phase) 2012

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2012

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ABBREVIATIONS

Ag	-	Silver
AGI	-	Above Ground Installation
AGT	-	Azerbaijan-Georgia-Turkey
Al	-	Aluminium
AMCHAM	-	American Chamber of Commerce
As	-	Arsenic
B	-	Boron
bbl	-	Barrel
BIL	-	BOTAŞ International Limited
BNB	-	Rural and Urban Development Foundation (now called BNB)
BOD	-	Biochemical Oxygen Demand
BOTAŞ	-	Boru Hatlari ile Petrol Taşima A.Ş. (Petroleum Pipeline Corporation, Turkey)
BPEO	-	Best Practicable Environmental Option
BTC	-	Baku-Tbilisi-Ceyhan Pipeline Company
BTEX	-	Benzene, Toluene, Ethyl Benzene and Xylene
BV	-	Block Valve
BVT	-	Block Valve Turkey
C&E	-	Compliance and Environment
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 Organisation
Cd	-	Cadmium
CDI	-	Community Development Initiative
CEIC	-	Caspian Environmental Information Centre
CEYDEM	-	Ceyhan Fire and Natural Disaster Training Centre
CEYGEM	-	Ceyhan Business Development Center
CIP	-	Community Investment Programme
Cl	-	Chloride
CMT	-	Ceyhan Marine Terminal
CO	-	Carbon monoxide
COD	-	Chemical Oxygen Demand
Cr	-	Chromium
CSR	-	Corporate Social Responsibility
Cu	-	Copper
CWAA	-	Central Waste Accumulation Area
dB(A)	-	A-weighted decibels
DSA	-	Designated State Authority (Turkey)
E&S	-	Environmental and Social
EEMP	-	Environmental Emissions Management Plan
EDDF	-	Emergency Drain Down Facility

EDTP	-	Enterprise Development and Training Programme
EIA	-	Environmental Impact Assessment
EIP	-	Environmental Investment Programme
EPPD	-	Export Pipelines Protection Department
EMS	-	Environmental Management System
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
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
MARPOL	-	International Convention for the Prevention of Pollution from Ships
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
Na	-	Sodium
NGO	-	Non-Governmental Organisation
NH_4	-	Ammonium
Ni	-	Nickel
NO_2	-	Nitrogen dioxide
NO_x	-	Nitrogen oxides
NRC	-	National Response Company
OMS	-	Operations Management System

OSR	-	Oil Spill Response
OSRB	-	Oil Spill Response Base
OSRP	-	Oil Spill Response Plan
OWS	-	Oily Water Separator
PAH	-	Polyaromatic hydrocarbons
Pb	-	Lead
PCR	-	Public and Community Relations
PCRE	-	Public and Community Relation Experts
pH	-	Potential of Hydrogen
PM	-	Particulate Matter
PSA	-	Pump Station, Azerbaijan
PSG	-	Pump Station, Georgia
PSCM	-	Procurement and Supply Chain Management
PT	-	Pump Station, Turkey
PWHP	-	Primary Withholding Pond
Q1/Q2/Q3/Q4	-	Quarter 1/Quarter 2/Quarter 3/Quarter 4
RAP	-	Resettlement Action Plan
RBC	-	Rotating Biological Contactor
RDI	-	Regional Development Initiative
ROW	-	Right of Way
SCF	-	Secondary Containment Facilities
SCP	-	South Caucasus Pipeline
SD FFD	-	Shah Deniz Full Field Development
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_4	-	Sulphate
SO_2	-	Sulphur dioxide
SO_x	-	Sulphur oxides
SRAP	-	Social and Resettlement Action Plan
STP	-	Sewage Treatment Plant
SWP	-	Storm Water Pond
TDS	-	Total Dissolved Solids
THC	-	Total Hydrocarbons
TPH	-	Total Petroleum Hydrocarbons
TSS	-	Total Suspended Solids
USAID	-	United States Agency for International Development
VOC	-	Volatile Organic Compound
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 Pipeline 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 Environmental and Social (E&S) Annual Report (Operations Phase) 2012.

There was a fine imposed against BOTAŞ International Limited (BIL) in Turkey in 2012 by the Ministry of Environment and Urbanisation (MoEU), the second Government fine to-date. 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 2012.

There were two Class II changes and one Management of Change extension during 2012. This Report provides detailed information about each change. There were no Environmental and Social Impact Assessment (ESIA) addenda submitted.

During 2012, there were four minor uncontained material releases and no significant Health and Safety (H&S) incidents. The total amount of hydrocarbons spilt was approximately 0.07 barrels (bbl).

In May and October 2012, the International Standards Organisation (ISO) 14001 audit was held for Azerbaijan and Georgia Export Pipelines. The general outcomes of the audit were that management at all sites remained committed to continued improvement of the Environmental Management System. As a result, a new 3-year ISO 14001 certificate was issued in January 2013 covering BP operations in Azerbaijan and Georgia. In Turkey, BIL obtained ISO 14001 certification in 2008 from the British Standards Institution. A surveillance audit was carried out by the British Standards Institution in October 2012.

The fourteenth post-financial audit by the Lenders' Independent Environmental Consultant (IEC), acting on behalf of BTC Lenders, took place in July 2012. One Level II non-compliance was raised, which related to a failure to build the ship waste handling facilities at Ceyhan Marine Terminal (CMT).

Emission and discharge monitoring for the operations phase continued and results were generally in compliance. Monitoring of gas turbine exhaust gases showed some exceedances of nitrogen oxide (NO_x) levels in Azerbaijan and Georgia. Offset programmes for both countries were progressed during 2012 to compensate for the NO_x exceedances, and will continue in 2013. Offset programmes fund implementation of renewable energy and energy efficiency projects. An additional offset programme related to compensation for the failure of *Iris acutiloba* plants to survive following their replanting on the pipeline Right of Way (ROW) was approved by the IEC and is due to be implemented in 2013.

There were no material changes to the Oil Spill Response Plan (OSRP) in Azerbaijan, Georgia or Turkey, with the exception that in Turkey the internationally recognised Oil Spill Response (OSR) Contractor is now subcontracted by BTC following BIL's termination of contractual relationships with the previous service provider in 2011.

BTC continues to benefit communities and Non-Governmental Organisations (NGOs) in all 3 countries through their Community Investment Programmes (CIPs) and Environmental Investment Programmes (EIPs). In 2012, over US$3,863,000 was invested in these programmes.

1 INTRODUCTION

The year 2012 was the seventh year of operating the BTC Pipeline Project.

This E&S Annual Report (Operations Phase) 2012 has been prepared and structured in accordance with the requirements of Annex J of the ESAP governing construction of the BTC Pipeline Project and Annex H of the ESAP governing the operations phase of the BTC Pipeline Project. These requirements are reproduced in Appendix 1. It is the ninth E&S Annual Report post-financing and covers the calendar year 2012[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 2012.

2.1.2 Georgia

There were no material modifications made to the BTC Georgia ESIA in 2012.

2.1.3 Turkey

There were no material modifications made to the BTC Turkey EIA in 2012.

2.2 SUMMARY OF MATERIAL PERMITS ISSUED IN 2012

2.2.1 Azerbaijan

There were four BTC Azerbaijan-related environmental permits issued in 2012 as follows:

- Removal of *Tamarix ramosissima* (Tamarix) shrubs at the Pump Station, Azerbaijan (PSA) 2 pipe yard (ref: 15/1424 dated 24 May 2012);
- Installation of two sheds in Gobustan area (ref: 035-12 dated 5 September 2012);
- Removal of plants for safe access to Goychay River crossing and 'Mil Garabagh Water Collector (17-01/1990 dated 19 October 2012); and
- Removal of plants for provision of remedial works at Kurakchay River crossing and canal (ref.: 15/3445 dated 4 December 2012).

2.2.2 Georgia

The statutory environmental permits acquired by BTC Georgia in 2012 were as follows:

- Mineral Extraction Licenses for:
  - Pump Station, Georgia (PSG) 1 camp water well;
  - PSG 2 water station; and
  - Area 80 accommodation.
- Construction Permits for:
  - PSG 1 warehouse and access road; and
  - PSG 2 accommodation and access road.

[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).

- Orders for PSG 2 access road construction-related Forest Fund use and Red Data Book tree removal; and
- Protocols on PSG 1, PSG 1 camp, PSG 2 camp, PSG 2 water station, Emergency Drain Down Facility (EDDF) and Area 80 water wells' sealing.

2.2.3 Turkey

An integrated permitting system for environmental permits and licenses has been introduced by the 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, a Temporary Operations Certificate was obtained for all facilities to demonstrate compliance of BTC Turkey in accordance with the national environmental regulations.

Pump Station, Turkey (PT) 2 and PT 3 Environmental Permits were obtained by BIL in 2012. Intermediate Pigging Station, Turkey (IPT) 1, PT 1 and IPT 2 Environmental Permits were obtained in 2013. The PT 4 Environmental Permit will be obtained in 2013. CMT permit application was submitted in September 2012; however, additional documentation and monitoring reports were requested by the Ministry of Environment and Urbanization, Turkey (MoEU). The CMT Entrepot Permit and PT 4 Non-sanitary Enterprise Permit were also received in 2012.

The final phase of the environmental permitting process (issuance of the Environmental Permit for the remaining facilities) is in progress.

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 Environmental Permits is given below. Studies or surveys noted as completed in the E&S Annual Report (Operations Phase) 2011 are not shown.

2.3.1 Azerbaijan

The only additional BTC Azerbaijan ESIA study and/or survey, as specified in the Operations ESAP, related 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); 2011 (p 3).	
Groundwater monitoring was carried out according to ESAP requirements in May 2012 and November 2012. A summary of results is given in Section 4.2.1.5.	
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 outcome of the relocation programme continued during 2012. An offset programme has been developed to compensate for plants that did not survive. A summary of the results of this programme is provided below:

[3] Dated 29 April 2009; referenced 27214.

Study/Survey:	**Expected Timing:**
Iris acutiloba monitoring programme	Monitoring: Ongoing
Ref: 2004-Q1 (p5-2); 2004-Q2 (p3-2); 2004-Q3 (p3-1); 2004-Q4 (p3-2); 2005-Q1 (p3-1); 2005-Q2 (p3-2); 2005-Q3 (p3-1); 2005-Q4 (p3-1), 2006-H1 (p3-1), 2007 (p5); 2008 (p4); 2009 (p3); 2010 (p3); 2011 (p3).	

Prior to construction of the BTC Pipeline Project, 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 2012. Results of April/May 2012 monitoring showed that 2,031 *Iris acutiloba* plants were found along the ROW, which equates to 8.5% of the total amount of translocated plants (24,000 items) from Mardakan in 2006. Percentages recorded in previous years were 7.2% in 2008, 4.2% in 2009, 2.8% in 2010 and 0.6% in 2011.

Trend analysis shows that the survival rate of the plants has been gradually decreasing since the reduction in 2008 up until 2011. However, the recovery rate of rare species was greater in 2012, in comparison with previous years. *Iris acutiloba* plants transplanted from the Garadag Cement Plant to the ROW maintained the soil around their roots indicating a success rate of 55%, which is considered an excellent result.

However, 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 *Iris acutiloba* plants that have not survived have been reviewed and discussed with the IEC auditors resulting in initiation of an offset programme comprising of planting trees around PSA 2 and the Intermediate Pigging Station, Azerbaijan (IPA) 1 stations to compensate for these individual species.

Completion Status: Ongoing

2.3.2 Georgia

The following additional ESIA studies and surveys, as specified in the Operations ESAP, were conducted in Georgia during 2012.

Study/Survey:	**Expected Timing: 2012-2015**
Kodiana special projects and other legacy projects	Monitoring: Ongoing
Ref: 2006-H1 (p3-2); 2007 (p-6); 2008 (p-5); 2009 (p-4); 2010 (p-4); 2011 (p-4).	

Fibre Optic Cable installation between the EDDF and Secondary Containment Facilities (SCF) was completed in 2012-Q3. The project was initiated due to the failure of satellite communication, which was initially planned.

Construction of the PSG 2 accommodation addition is in progress. Completion is planned for 2014-Q4 with reinstatement to follow in 2015-Q2.

Construction of the new PSG 2 access road, which avoids crossing the new railway project, commenced in 2012-Q4. Tree felling and topsoil stripping activities were finished with the entire project to be completed by 2013-Q3.

The design phase for the PSG 1 warehouse and related access road was completed in 2012-Q4. Commencement of initial construction works is planned for 2012-Q1.

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 2012.

Study/Survey: Landscape plans and monitoring for 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) ; 2011 (p5)	

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

Completion Status: Monitoring Ongoing

Study/Survey: 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); 2011 p(5)	

The annual marine turtle survey was conducted in late May-September 2012. As in previous surveys, the survey was carried out at Sugozu, Akkum, Botaş and Hollanda beaches near the CMT jetty.

Nesting: In 2012, a total of 76 *Chelonia Mydas* (Green Turtle) nests and 1 *Caretta Caretta* (Loggerhead Turtle) nests were observed in the study area.

A summary of the number of nests observed during 2012 compared with previous years is as follows:

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Chelonia Mydas (Green Turtle)	42	44	213	29	198	57	160	163	104	145	76
Caretta Caretta (Loggerhead Turtle)	18	3	3	7	0	1	1	4	1	3	1

As shown above, there are inter-annual fluctuations in the nest numbers of *Chelonia Mydas*. The 2012 nests are lower than 2004, 2006, and 2008 to 2011 periods but are higher than other years between 2002 and 2012. This confirms the fluctuating nature of nesting. The nesting activity of *Caretta Caretta* is rather consistent and the low nest numbers are attributed to the location of the area.

Hatchlings: In the 2012 season, about 5,000 hatchlings reached the sea. Calculations are based on direct observations, track counts and uncovering the nests for control.

The hatchling success calculated from the track counting, and nest success calculated from uncovering for control was high during 2012, showing the highest results within the last 5 years of monitoring. No significant death of the hatchlings due to the scorching effect of the sun, or any significant disorientation was determined along the studied beaches.

A summary of the hatchling success observed during 2012 compared to previous years is as follows:

Beaches	**2007 (%)**	**2008 (%)**	**2009 (%)**	**2010 (%)**	**2011 (%)**	**2012(%)**
Sugozu	80.9	87.2	76.5	86.6	92.1	95.4
Akkum	84.5	86.6	77.1	87.9	82.8	93.8
Botaş	44.4	60.7	83.9	91.2	72.7	92.1
Hollanda	44.4	77.0	80.5	96.0	68.5	94.2
Overall	82.3	82.9	77.8	89.1	84.7	94.8

Completion Status: Ongoing

2.4 OTHER STUDIES

2.4.1 Azerbaijan

There were 4 other studies/surveys carried out in Azerbaijan in 2012 as follows:

Study/Survey:	**Expected Timing:**
Vegetation cover: August 2012	Operations

For 2012, biorestoration monitoring includes 6 years of percentage cover values, and 4 years of species-diversity data, collected from 56 transects located along the length of the ROW. The results of the 6 years of the biorestoration monitoring programme can be summarised as follows:

In 2012, there were 2 changes to the monitoring process:

- Monitoring was discontinued at AZ 56 (a borrow pit) and AZ 23 as the site had been excavated at AZ 56 and cultivated at AZ 23 (by a third-party not associated with the Azerbaijan-Georgia-Turkey [AGT] region).
- Transects AZ 49 and AZ 50 (discontinued in 2011) were replaced with transects AZ 49a and AZ 50a, in addition, AZ 23 was replaced with AZ 23a. The new transects were located in the same vegetation type as the originals, and their data is taken as a continuation of the original transects.

Thirty-three of 51 transects (64%) achieved vegetation cover at least equal to adjacent, undisturbed vegetation (within the +/-10% margin). This is an increasing trend compared to last year's data, when 61% of transects achieved natural vegetation cover. The majority of transects (98%) show an increasing trend in vegetation cover over the 6-year sampling period. This is an improvement compared to 2011, when only 89% of transects showed an increasing trend in vegetation cover.

In summary:

- 98% of transects have achieved the target of an increasing trend in vegetation cover on the ROW;
- 63% of transects have achieved the combined targets of an increasing trend and matching off-ROW vegetation cover;
- 35% of transects are increasing in cover but have not reached the off-ROW vegetation cover; and
- One transect (AZ 08) is not increasing in vegetation cover and is less than 70% of the off-ROW cover.

Despite the increasing trend in vegetation cover, the monitoring results also show some 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. This is consistent with plant succession and was predicted in the Biorestoration Management Plan.

Recovery of species-diversity on the ROW is occurring, although the rate of change is generally slow. The lowest rates of recovery are still seen in the habitats where growing conditions are harshest, particularly in the Sangachal desert and in habitats with highly saline soils.

As noted in previous monitoring reports, there is not necessarily a correlation between recovery of vegetation cover and recovery of species-diversity. A good example of this is transects in the *Artemisetum lerchiana purum* desert, located towards the western end of the route. The vegetation cover in these transects is very close to the natural off-ROW vegetation cover, but the increase in commonality percentage is one of the lowest. Environmental conditions here are more favourable for vegetation growth, with rainfall comparatively high in contrast to the eastern end of the route, and the soils having a significant proportion of stony material, which may make them less prone to compaction and more favourable for seen entrapment, establishment and hence germination. This may explain the good recovery of vegetation cover, perhaps related to successful establishment of seeds sown during the initial biorestoration. However, it is likely that it will take much longer for the species composition on the ROW to reflect the undisturbed vegetation adjacent to it.

The habitat where recovery is poorest is the *Tamarixetum* scrub, particularly at AZ 33 (KP 193). This is caused by a combination of factors, of which the saline, compacted soils likely play the most significant role in preventing vegetation establishment. *Salsoletum nodulosae clayey* desert also comes out of the analysis as having poor rates of recovery and a low proportion of cover compared with off-ROW vegetation.

Although *Suaedetum microphylla solonchak* desert and *Halocnemetum strobilaceum solonchak* desert are ranked low in the table of recovery rates, they have actually achieved near-natural levels of vegetation cover. In this case, only the species commonality is low. The transects are located in arid sections of the route, in the Sangachal desert section and in the Kura-Araz lowland with saline soils. Soil compaction and surface salinity are likely to be limiting factors on recovery of species diversity in these habitats.

Biorestoration and erosion control monitoring will be continued during 2013.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
BTC/South Caucasus Pipeline (SCP) biorestoration (prolongation of perennial species)	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 and 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 is 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. in ecologically sensitive areas 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 nodulosa* (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 revised saw seeding technique, which was described in the last year's report case study, commenced in 2012. A trial project has been implemented whereby collected seeds are being sown directly into a nursery bed, established in accordance with native habitat properties, and then translocated to the area identified for biorestoration within the ROW.

In May 2012, a suitable location for planting *Artemisia lerchiana* and *Salsola nodulosa* (Saltwort) was identified on the ROW. During the period between 30 May and 8 June 2012, seedlings were planted in the pre-identified locations every $1m^2$ including: 360 plants of *Salsola nodulosa* planted around KP 4.7 to KP 5; 100 plants of *Artemisia lerchiana* planted

around KP 6.9 and northwards; and 400 seedlings of *Artemisia lerchiana* and 140 seedlings of *Salsola nodulosa* planted around KP 12.6 to 12.7. In total, 1,000 seedlings of *Artemisia lerchiana* and *Salsola nodulosa* were planted (500 seedlings of each type).

Seedlings prepared for plantation were checked prior to planting with no signs of sickness observed and the seedlings were deemed fully suitable for plantation. Considering that the plantation area is windy and water deficient, pits were dug around 20 to 25cm deep. Upon completion of all plantation work, plants were repeatedly watered. The 10-day plantation process was completed on 8 June 2012. The next watering process was fulfilled on 14 June 2012, and conditions of plants were monitored. During monitoring, a number of seedlings were observed to have succumbed to dry conditions including 28 out of 360 seedlings of *Salsola nodulosa* between KP 4.7 to KP 5 and 16 out of 140 seedlings between KP 12.6 to KP 12.7. The cause of the dried plants is believed to be a strong northern wind. This is because of the weak stem of the *Salsola nodulosa* seedlings that could not tolerate the strong winds. Nevertheless, considering that *Salsola nodulosa* is capable of vegetating during summer seasons, recovery of dried plants is likely. No dried *Artemisia lerchiana* plants were observed.

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 aimed at returning all forest belts, river crossings, hilly lands, flat lands, natural wetlands, deserts and semi-desert habitats along the pipeline corridor to pre-construction conditions. To demonstrate restoration progress at the landscape scale, 90 vantage points were selected along the Azerbaijan section of the pipeline. The vantage points were selected in order to monitor restoration of vegetation in and around permanent pipeline facilities and related construction works (e.g. rivers and stream crossings, slopes and gullies liable to erosion, areas with a high visibility to communities, borrow pits, permanent Above Ground Installations (AGIs), including AGIs and Block Valves (BVs)/Check Valves and road crossings within environmentally sensitive areas), for the purposes of assessing changes to the Landscape aesthetics.

The Azerbaijan section of the pipeline ROW was originally divided into three parts for simplification in the assessment of monitoring results: east, middle and west parts. According to monitoring results in 2011, the east part did not meet the reinstatement target (>50% vegetation cover), therefore it was decided to continue monitoring annually at those areas where the reinstatement target has not been achieved (i.e. <50% vegetation cover in disturbed areas).

In May-June 2012, landscape monitoring was therefore carried out at 21 vantage points within the east part. Results indicated that restoration from KP 0 to KP 93 remains less than or equal to 50%. This section will continue to be monitored.

Completion Status: Ongoing

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

BTC has implemented a substantial reinstatement programme that aims to return the pipeline landscape to pre-construction conditions where possible. There is also a formal requirement in the 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 Export Pipelines Protection Department (EPPD). The EPPD provides security for the Western Route Export Pipeline (WREP), BTC and SCP pipelines in Azerbaijan.

As a result, the 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 essentially 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, the EPPD would use alternative roads for routine patrols, thus increasing BTC's ability to reinstate these locations.

The 2012 monitoring results showed that the running track continues to be used by vehicles along much of the ROW and that surface water erosion had restricted the recovery of vegetation at many locations. These two factors are inter-linked, in that vegetation cover is key to ameliorating surface water erosion, but driving on the ROW is a major factor in restricting vegetation recovery.

As a result, further meetings were held with the EPPD In total, 28 out of 29 running tracks remain to be restored

During 2012, a list of 13 agreed alternative roads was developed and submitted to EPPD Management. Alternative roads were identified starting from KP 3 to KP 378.

BTC will continue to co-operate with the EPPD and other State organisations on use of alternative access roads in 2013.

Completion Status: Ongoing

2.4.2 Georgia

There were 8 other studies/surveys carried out in Georgia in 2012 as follows:

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

BTC has committed to a 5-year programme for biodiversity monitoring at off-FCI-ROW locations (based on the initial agreement with Ministry of Environment, Georgia (MoE). This programme aims to analyse data for the period 2004 to 2009 for trends. As reported in the E&S Annual Report for 2011, BTC has proposed a revised/reduced scope for the next 5 years of monitoring for off-FCI-ROW areas and this was submitted to the Government of Georgia for review, comments and agreement. The programme is considered to have been accepted by the MoE based on Appen.3, cl.3.9 of the Host Government Agreement (HGA) given that one year has passed since submission. The revised off-FCI-ROW biodiversity monitoring programme aims to ensure comparison of the data sets collected in two equal monitoring phases. The revised programme was launched in spring 2012 whereby BTC continued monitoring using the revised scope of the programme consisting of faunal and floral (including habitats) components purposed to identify any potential impact caused by pipeline construction and operation activities. The 8-year-long faunal species monitoring programme has shown a significant drop in numbers of focal faunal species populations mainly attributed to the increase of anthropogenic pressure at all monitoring sites reflected in uncontrolled grazing of cattle and illegal hunting. Special attention in light of pipeline operational impacts are considered for *Tetrao mlokosiewiczi*, the vulnerability of which was strongly supported by destruction of its native habitat – (Rhododendron scrub) at the Kodiana pass area. The scope of the faunal monitoring has covered selected species of amphibians, birds and mammals (e.g. forest bats and *Mesocricetus brandti* [Brandt's Hamster] populations are monitored once in two years). The target animal species for the 2012 monitoring surveys were *Pelobates syriacus* (Spadefoot Toad), *Crex crex* Corncrakes, *Mesocricetus brandti*, *Tetrao mlokosiewiczi* (Black Grouse) and *Lutra lutra* (common Otter).

Monitoring will continue in the spring 2013 period.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Vegetation cover recovery and potential erosion risk assessment along the BTC and SCP ROW, 2012	Operations

Vegetation cover regrowth trends and erosion risk potential have been monitored annually since 2005 using both ground-based and satellite data.

Satellite data were not available for 2012 so monitoring results are based on field data only. Results for 2012 indicate that the project biorestoration target was achieved at almost all habitats with 65% of the ROW transects recording vegetation cover equal to or greater than adjacent undisturbed areas. All transects have shown an increasing trend of vegetation cover over the past 5 years of monitoring. However, there are considerable fluctuations in vegetation cover by years. Further monitoring and intervention is required to ensure timely identification of fluctuations and effective erosion prevention. Early detection of any negative tendencies is required to ensure implementation of erosion control measures on a site-specific basis and effective protection of pipeline system integrity.

Completion Status: Ongoing, with the next round of vegetation cover and erosion potential assessment monitoring is scheduled to commence in April 2013.

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

The main objective of the rare species monitoring programme is 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 for 8 out of 11 nominated species. Similar to the results obtained in previous years, no individuals of *Gentiana angulosa* (2 populations) and *Orchis coriophora* were recorded on the reintroduction sites. Considerable reduction in abundance has been recorded for *Dactylorhiza urvilleana* (populations at KP 96) and *Dactylorhiza euxina*.

Analysis revealed a statistically significant change in total number of individuals in permanent plots and study areas. Considerable reduction in abundance has been recorded for both populations of *Dactylorhiza urvilleana* and *Dactylorhiza euxina*.

Surveys to assess survivability rates will continue in 2013.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Propagation of Fritillary and Gentian by seeds and reintroduction to original habitat	3-year project (2010-2012)

The monitoring surveys of rare species, conducted in 2009, identified the absence of *Gentiana angulosa* (Gentian) and *Fritillaria lutea* (Fritillary) populations at Tskhratskaro (KP 176) and Kodiana (KP 193) passes. Both populations were reintroduced to their original habitats upon completion of the ROW reinstatement. Several thousand of the *Gentiana angulosa* individuals were planted in these areas, but have failed to establish. As a result a new approach has been developed involving propagation prior to reintroduction.

In March 2012, first *Fritillaria lutea* seedlings emerged (78 in total) with the growing season lasting for 2 months (until mid-May). During this period, the bulblets of *Fritillaria lutea* reached 1.5 to 2mm in diameter. In the summer of 2012, additional *Gentiana angulosa* seeds were collected and sown in containers.

It is planned to reintroduce *Fritillaria lutea* seedlings/juvenile plants in their native habitats in late spring 2013. Although no *Gentiana angulosa* seedlings had been established in containers by spring 2012, it is likely that *Gentiana angulosa* seeds may require another growing season to produce seedlings.

Completion Status: Ongoing

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

Mechanical control measures of *Ambrosia artemisifolia* (Common Ragweed) were developed for short-term interventions by specifically investigating the effect of the timing of the intervention on the performance of both *Ambrosia artemisifolia* and its accompanying vegetation. In 2012, brush cutting at the time of flower initiation (mid August 2012) was performed at two different sites in the Tetritskaro and Akhaltsikhe districts. The districts differ in both climatic conditions (with the former milder and the latter more extreme conditions) and land use history (with the former reinstated site and the latter former arable site). Six weeks after the treatment application, results from two sites proved that cutting of the vegetation significantly reduced cover, height and phenology of *Ambrosia artemisifolia* as it was, with the exception of phenology at site two, which increased as compared to the controls; thus by 87/83%, 72/68% and 69/+27%, respectively, for the two sites. These findings confirmed earlier results showing that under favourable conditions, such as in fertile soils and adequate climatic conditions, a single cutting cannot prevent *Ambrosia artemisifolia* from flowering and seed set. A comparison with the 2010/2011 data indicates a continued succession process at both sites towards a more competitive grass cover, which is expected to increasingly suppress *Ambrosia artemisifolia*.

In an earlier study, intersections between roads and BTC and SCP pipeline routes were are identified as the points along the pipeline where alien plants are most likely to establish. . For future studies, it is proposed to establish a list of such intersections covering a broad range of regions and habitat types, and visit each of the selected sites during July 2013 and determine whether any alien plants have established and assess their status in terms of invasive threat. A mechanical cutting program will be implemented where alien species are found. An information leaflet describing the main exotic plant invaders found in these habitats and how they can be controlled will be prepared to guide field crews.

Walkover surveys of the BTC and SCP ROW conducted in 2012 revealed the presence of populations of 8 alien species on the ROW. Out of the 8 species, *Ambrosia artemisiifolia* and *Robinia pseudoacacia* are invasive taxa. According to field observations, the latter is represented by fairly small populations in two areas along the BTC and SCP ROW and it is unlikely that the populations of this species will further spread over the ROW, Since the majority of alien species are naturalised annuals, a high proportion of annual aliens in certain areas of the ROW is not be regarded as a threat to local biodiversity as at later stages they will be gradually replaced with native perennials.

Regular monitoring will be undertaken in order to allow timely intervention if necessary.

Completion Status: Ongoing

Study/Survey:	**Expected Timing:**
Landscaping/biorestoration projects at PSG-1, PSG-2, SCF and EDDF sites and along 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 project 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 included regular maintenance applied to the plantation in appropriate seasons. Monthly inspections informed decision-making and consequent applications of the specified activities, such as soil cultivation, mowing (weed control), watering, pest and disease control and maturing (case and season sensitive).

In September 2012, the plantation survival/mortality rate was assessed by a third-party consultancy and various damaging factors/causes were identified. Failed and missing saplings identified during the assessment have been replaced with new stock (2,000 saplings in total). Firmness of plant supporting stakes was checked and failed stakes were replaced.

In contrast to previous years, sites demonstrating low survival rates were assessed for soil fertility using mechanical and chemical analyses taken from different sites of Bakuriani. Laboratory analyses assumed an exclusion of contamination of soil as an impact on plant mortality. Analysis revealed lack of phosphorus and potassium in soil samples. Recommendations provided included supplementing those minerals by adding an optimal quantity of nitrogen-phosphorous-potassium complex fertilizers.

In 2013, biorestoration efforts will be summarised at all 9 selected sites and focused maintenance targets applied mainly to the areas that have shown low survival rates (less than 75%) considering existing environmental conditions.

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

The field assessment of survival of trees and shrubs planted at PSG-1, PSG-2, SCF and EDDF sites and along the Kodiana access road was conducted in September 2012. Relatively high mortality rates (more than 56%) of planted trees and shrubs were recorded at PSG-1, PSG-2, and Oshora 2. Other sites showed that the survivability of plants was rather high. Recommendations were made to carry out additional plantings 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 BTC and SCP ROW	Operations

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

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

Completion Status: Ongoing

2.4.3 Turkey

There were 6 other studies carried out during 2012 in Turkey, as follows:

Study/Survey:	**Expected Timing:**
Biorestoration monitoring (species diversity and vegetation cover)	Operations
Ref: 2010 Annual (p11)	

Ecological monitoring consists of two components: monitoring of vegetation cover and monitoring of species diversity. The survey is undertaken annually for vegetation cover monitoring and biennially for combined monitoring (species diversity and vegetation cover). Species diversity monitoring was not carried out in 2012, as the defined frequency does not require doing so.

The 2012 vegetation cover monitoring was conducted between June and July along the BTC Turkey pipeline section. In general, there is a steady increase in vegetation cover. On the other hand, the vegetation cover was determined to be weak or below expectations at 20 out of 119 monitoring sites. The reason for weak cover within 12 of these was determined to be overgrazing, erosion and agricultural usage.

BIL will continue to monitor and define corrective actions if the problem persists.

Completion Status: Ongoing

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

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

The marine ecology survey was not carried out in 2012, as the defined frequency does not require doing so.

The marine sediment survey was conducted in July 2012. Highlights of the survey are outlined below:

- The majority of the survey area is covered with muddy intertidal sediments. The sediments are commonly subdivided into sandflats, mixedflats and mudflats based on sand or mud content. In addition, the benthic community structure is primarily influenced by the sediment grain size. The bottom surface is mainly composed of a muddy formation such as silty sand and clay with very small grain size. This kind of habitat has low productivity and cannot support a healthy benthic life;
- Mollusca and Polychaetes were the most diverse groups in samples, followed by Crustacea. Other groups such as Chlorophyta, Porifera, Nemertini, Nematoda, Phoronidae, Echinodermata and Hemichordata were represented with 11 species, accounting for 8% of total species;
- No pollution indicator or opportunistic species belonging to this group was observed to have a negative pressure on the marine environment;
- The benthic material collected at 12 stations included 20 alien species. The worst invasive species in the Mediterranean, *Caulerpa taxifolia*, which was reported around the CMT jetty, covered the sea bottom at three stations close to the shore and jetty. The other alien species with high abundances in the area were *Finella pupoides* and *Cerithidium diplax*;
- Concentrations of mercury (Hg), cadmium (Cd), lead (Pb), and zinc (Zn) in all of the sediment samples are below the established international and national guideline values;
- Chromium (Cr), Pb, and Zn values increased but tin (Sn) and Hg decreased at most of the stations compared to 2011 results. Cr and iron (Fe) concentrations in all stations, and Sn concentrations in some stations of sediment samples, are above international guideline values. These high Fe, Sn and Cr concentrations might be attributed to the existence of industrial facilities (such as iron-steel, fertilizer factories) at the east of the Iskenderun Gulf. The sources of Sn pollution may be attributed to agricultural activities in the Çukurova plain and in Iskenderun;
- Aluminium (Al), copper (Cu), Cd, Pb, Fe and Hg contents of surface sediments are lower than the shale average (natural background level for sediment). Zn, Sn and Cr concentrations are high in all or most of the stations. However, Sn has significantly decreased in the last year. Sn concentrations have shown a decreasing trend since 2004. All metal distributions showed that the area is polluted and some of the metals are very high in concentration, which indicates long-term accumulations. The origin of the high values is anthropogenic inputs;
- Despite the fact that the measured concentrations are above accepted limits for some metals (Sn, Cr, Fe), there is a decrease in trace metal values in the area. Generally, concentration values of metals obviously decreased compared to 2004 results;
- Organic matter content of sediments was lower than 2010 results. Organic matter content was higher at locations away from the shoreline; and
- Total Petroleum Hydrocarbons (TPH), C5-C10 and C10-C28 components, concentrations measured in sediment samples collected around the BTC Jetty area are lower than the guideline values reported for Class A sites (100mg/kg) and Class B sites. It can be concluded that there is no significant present contamination in terms of TPH values in the area. When a comparison is made with other reference areas in the Mediterranean, it is obvious that the measured TPH concentrations in the survey area (<50µg/g) are lower than literature values recorded in the Rhone River, France (25 to 170µg/g) and the Egyptian Coast (50µg/g).

Completion Status: Ongoing

Study/Survey:
Coastal processes survey

Ref: 2007 Annual (p13); 2008 Annual (p23); 2009 Annual (p23); 2010 Annual (p12); 2011 Annual (16)

The coastal processes survey was not carried out in 2012, as per the agreed frequency.

Completion Status: Ongoing

Study/Survey:
ROW physical monitoring

Expected Timing:
Operations

Ref: 2009 Annual (p23); 2010 Annual (p12); 2011 (p16)

The annual physical monitoring activities along the BTC ROW lead by the Environment Department were merged with the patrol activities of the Pipeline Technical Management team, which is continuous in nature and covers the whole pipeline. Two areas were biorestorated in September 2012 based on findings of the patrol activities.

Completion Status: Ongoing

Study/Survey:
Ballast water management study

Expected Timing:
Operations

Ref: 2007 Annual (p10-11); 2008 Annual (p22); 2009 Annual (p23); 2010 Annual (p24); 2011 Annual (p17)

The contract with TÜBİTAK MAM (Marmara Research Center) was renewed and the Ballast Water Risk Assessment was reinitiated for the fourth time for ships that visited CMT after 4 June 2006 (first day of operations). The Risk Assessment will be finalised within 2013-Q2.

During the Risk Assessment, TÜBİTAK MAM will also review previous annual marine ecology and marine sediment survey results conducted by BIL and incorporate the findings into the Ballast Water Risk Assessment.

Completion Status: Ongoing

Study/Survey:
Waste management Best Practicable Environmental Option (BPEO) study

Expected Timing:
Operations

Ref: 2009 Annual (p24); 2010 Annual (p25); 2011 Annual (p17)

The study was planned as three phases: BPEO for: domestic; hazardous; and recyclable and reusable waste streams. The domestic waste actions of BPEO for the management of solid wastes arising from BTC operations in Turkey are being undertaken by BIL and BTC. One of the outcomes of this study was using the Antakya Municipal Landfill Site, which BIL has already started to use under a Protocol. Another outcome was using the Erzurum Municipal Landfill Site following the 2-year Eastern Anatolia Waste Management Project. The Protocol between BTC and Erzurum Municipality was signed and the Eastern Anatolia Waste Management Project was initiated.

The study on hazardous waste was done by BTC consultant, İSTAÇ Company. The study aimed to explore the disposability of hazardous wastes generated along the BTC pipeline as additional fuel in cement factories (Kayseri and Mersin factories that are close to the pipeline) and as an alternative to landfill or incineration at İZAYDAŞ.

Use of wastes in cement factories as additional fuel and disposal of wastes through an incineration method are currently being conducted pursuant to provisions of the *Regulation on the Incineration of Wastes (2010)* that is fully harmonised with the *2000/76/EC Waste Incineration Directive*. Kayseri and Mersin cement factories and İZAYDAŞ were found to be compliant with the emission standards specified in the national regulation and European Union (EU) Directives.

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

Completion Status: Ongoing

3 CHANGES

As reported in previous E&S Annual Reports, the BTC Pipeline 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 ESAPs. 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 no Class I, II or III changes in Azerbaijan during 2012.

3.2 GEORGIA

There were no Class I, II or III changes in Georgia during 2012.

3.3 TURKEY

There were two Class II changes and one MOC extension in Turkey during 2012.

Asset	Class	Approved Internally	Description of Change
BTC Turkey	**II**	January 2012	**Use of borrow pits with limited environmental licenses and permits, for use in emergency situations, such as following a landslip, or to mitigate high risks with significant potential impact (e.g. heavily eroded section near a project facility).** Some of the geo-hazard projects were identified as high priority for mitigating potential integrity risks. These projects require materials such as stone and gravel of a certain specification. If, for any reason, the procurement of materials is delayed, such a delay may result in failure to mitigate the high environmental risk on time. It is stated in Appendix C2, Section 11.5 of ESIA that "Contractor will ensure that all borrow material will only be sourced from (both existing and new) licensed and authorised sites or sources". Finding and using alternative borrow sites with the full set of environmental licenses requires additional time for settling license issues and finding quarries with suitable quality materials, which results in borrowing materials from distant locations, engaging in significant additional transportation time to transport from a permitted borrow site. The purpose of this permanent deviation is to authorise the use of borrow sites that do not have the full set of environmental licenses and permits, in cases where there is a need to respond to an emergency situation, or to mitigate high risks with significant potential impact requiring time bound prompt actions.
BTC Turkey	**II**	November 2012	**Pipeline re-routing away from mudslide at KP 383.** In order to minimise risks to the BTC Pipeline arising from the presence of an active elongate mudslide at KP 383, the section of affected BTC Pipeline shall be re-routed away

Asset	Class	Approved Internally	Description of Change
			from the mudslide prior to March 2013. The KP 383 Replacement Project will replace a section of the pipeline in the area of concern. BTC initiated pre-construction surveys, an environmental assessment and a social assessment for the re-route in order to assess potential E&S impacts and propose relevant mitigations so that the re-routing activities are managed in line with the ESIA. BTC believes that the re-route will bring no additional E&S risks if re-route activities follow the principles of the ESIA and comply with BTC's Statement of E&S Requirements for Projects. The proposed change is a minor re-route (changes to the facilities) of about 750m, which deviates vertically about 250m from the original ROW and hence remains within the 500m wide Preferred Route of the BTC pipeline (location changes within the corridor width/area described and studies in the ESIA.
BTC Turkey	**II**	June 2012	**Continue to use the temporary AGI camp facilities until the end of 2017 when permanent accommodation facilities are constructed.** The EIA and supporting Camp Assessment Reports assumed that the camps at the Turkish section of the BTC pipeline would operate for the duration of the construction period. A MOC was issued in 2007 to continue to use the temporary AGI camp facilities (PT 1, PT 2, PT 3, PT 4, IPT 1 and CMT) to accommodate staff to support the operation of the BTC facilities. An extension of the MOC was approved until the end of 2011. The AGI camp facilities are still used by BIL, BTC and contractor staff. BIL operates the Turkish section of the BTC pipeline on behalf of BTC. Given the number of BIL staff, BIL determined that the permanent facilities did not have sufficient accommodation thereby requiring the L continued use of the camp facilities. Office space is also being utilised at the camp facilities. A small number of BTC staff also reside in these temporary facilities. It was BTC's original position that the permanent facilities, including accommodation, had to be provided by BOTAŞ – BIL's parent company. This has not transpired and BTC plans to construct permanent accommodation facilities in accordance with internationally recognised standards. This will comply with Amendment 3 of the Agreement for the Operations of the Facilities in the Republic of Turkey (BIL Operating Agreement) signed between BTC and BIL on 25 October 2011 (Amendment 3). BTC believes that once such accommodation is constructed there will no longer be a need for temporary camps at the Turkish section of the BTC pipeline.

3.4 CROSS-COUNTRY CHANGES

There were no cross-country changes approved in 2012.

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), OSRP or the Environmental and Social Management System (ESMS).

3.5.1 Azerbaijan

No material amendments to the BTC Azerbaijan ESIA, ESAP or RAP were made in 2012.

3.5.2 Georgia

No material amendments to the BTC Georgia ESIA, ESAP or RAP were made in 2012.

3.5.3 Turkey

No material amendments to the BTC Turkey EIA, ESAP or RAP were made in 2012.

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 2012 are detailed in Appendix 2 of this Report.

4.1.1 Azerbaijan

There were no non-compliances in Azerbaijan from the IEC in 2012. The action taken in response to the 2010 audit non-compliance, involving development and implementation of offset programmes, was accepted by the IEC.

A progress summary of these programmes is provided below:

- Two schools and one kindergarten were identified for the installation of solar water systems. Solar panels have been installed at identified village schools and a kindergarten. These projects are expected to be completed in 2013.
- Planting of Red Data Book trees is expected to start at IPA 1 and PSA 2 in 2013. It is planned to plant 3,154 trees
- Reinstatement has been consistent with construction-phase commitments, except in the Gobustan desert area (KP 1 to KP 32) and KP 309 to KP 311. EPPD driving on the ROW, especially in the Gobustan desert area, has made achieving the desired condition of reinstatement difficult. In general, there has been little improvement in these areas since the first year after completion of construction (refer Section 2.4.1).

No government fines or penalties were incurred for environmental or social non-compliances, and no material environmental claims were made against BTC Azerbaijan during 2012.

4.1.2 Georgia

There were no new emission or discharge related non-compliances raised during the 2012 IEC annual audit. The NO_x offset alternative energy programme continues and is due for completion in 2013.

4.1.3 Turkey

The Level I non-compliance in Turkey raised in 2011 was escalated to a Level II non-compliance by the IEC due to a failure to build the waste handling facilities at CMT in 2012. Details are provided in Appendix 2C.

BIL was issued with a second fine of Turkish Lira (TRY)188,488 by the MoEU on 13 November 2012 due to the apparent absence of any progress with respect to the construction of the International Convention for the Prevention of Pollution from Ships (MARPOL)-compliant waste handling facility. Such Facility is required under the local legislation as well as the International Convention for the Prevention of Pollution from Ships (MARPOL). This is the second time a fine is imposed; first fine was imposed on 12 April 2011 and was in the amount of (85,475 Turkish Lira).

BTC Co reimbursed BIL on without prejudice basis when the first fine was paid and agreed to do so this time as well.

BTC Co historic position is that construction should have been made by the Turnkey Contractor or by the Designated Operator. However, BTC Co agreed on without prejudice basis to construct the Facilities.

The contract for the construction of the MARPOL-compliant facility was awarded on 29 November 2012 and detailed design works have been initiated.

A communications plan for MARPOL was developed by the Communications and External Affairs team and meetings with relevant Government authorities are ongoing. BTC is engaged in high level meetings with the MoEU and already informed about overall estimation of the construction timing of minimum 16 months. BTC raised impossibility of achieving 45 days deadline for constructing the Facility, as required by the MoEU in accordance with the local legislation.

4.2 MONITORING RESULTS

Actions on operational environmental monitoring arising from the BTC Emissions Management Plan continued during 2012. These planned activities were implemented in accordance with the internal plans to ensure compliance with BTC Pipeline 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 2012, ambient air quality monitoring was carried out at PSA 2. Sampling devices were deployed during July to August 2012 at 5 locations around PSA 2 and the PSA 2 camp. Analyses were carried out for nitrogen dioxide (NO_2).

All results were within the BTC Azerbaijan ESIA specified limits for the annual mean.

A summary of monitoring results is provided in Appendix 3.1a.

4.2.1.2 Stack Emissions

Stack emissions monitoring for the 2012 monitoring round was completed in February 2013 for all major combustion plants at BTC pipeline stations and included monitoring of the PSA 2 main power generators, 4 Main Oil Line (MOL) turbines, a Water Bath Heater (WBH), and the IPA 1 main power generators. All of the stacks were sampled for NO_x, carbon monoxide (CO), sulphur dioxide (SO_2), and Particulate Matter 10 (PM_{10}).

The monitoring results of all BTC Azerbaijan diesel generators and the WBH indicated that the NO_x, CO, SO_2 and PM_{10} concentrations were well below the limits specified for these plants in the BTC Azerbaijan ESIA and Emissions Management Plan.

Monitoring results of the BTC Azerbaijan PSA 2 MOL turbines indicated that NO_x concentrations from the 3 turbines were higher than the 75mg/m^3 limit specified in the Emissions Management Plan for this plant, but lower than the 125mg/m^3 limit specified in the BTC Azerbaijan ESIA.

An offset programme, accepted by the IEC in order to compensate the exceeded NO_x emissions, has been implemented and is expected to be completed in 2013.

A summary of monitoring results is provided in Appendix 3.1b.

4.2.1.3 Noise

In December 2012, 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 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.

A summary of monitoring results is provided in Appendix 3.1c.

4.2.1.4 Effluent

BTC Azerbaijan's effluent discharges in 2012 comprised treated sewage from PSA 2, the PSA 2 camp and IPA 1.

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

The treatment system at PSA 2 camp was not able to treat all waste water due to capacity limitations. An additional Rotating Biological Contactor (RBC) unit was installed to work in parallel with the existing RBC located at PSA 2. The hand-over process between the Project team and Operations team is ongoing.

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.

All results from the PSA 2 reed bed complied with the ESAP standards with the exception of coliform bacteria. High levels of coliform bacteria have been detected in samples taken from the final polishing reed beds immediately after first rain. Since samples of water entering the reed beds do not contain high levels of faecal matter the Sewage Treatment Plant (STP) is considered to be functioning as designed.

A summary of monitoring results is provided in Appendix 3.1d.

4.2.1.5 Ground and Surface Waters

In 2012, surface and groundwater monitoring was carried out in May and November. Groundwater samples were taken from 5 monitoring wells at the Karayazi aquifer. Two

wells were found vandalised (Kar M6 and Kar M7). These wells were re-drilled in January 2013.

Surface water samples were taken from upstream and downstream locations at IPA 1 and PSA 2.

All results were consistent with pre-Project baseline conditions.

A summary of monitoring results is provided in Appendix 3.1e.

4.2.1.6 Waste Management

During 2012, waste management practices were maintained and improvements undertaken to minimise waste generation through awareness sessions, toolbox talks and the like.

All wastes were handled and disposed of in accordance with BTC AGT regional waste management requirements. The AGT Region Waste Manual has been developed and implemented to enhance waste management practices at all facilities.

A summary of waste generated is provided in Appendix 3.1f.

4.2.2 Georgia

4.2.2.1 Ambient Air Quality

The annual round of ambient air quality monitoring was conducted in April 2012 at PSG 1 and PSG 2. Monitoring was repeated during the period of stack emissions monitoring in November 2012. Measurements were taken at 5 locations around each of the above-mentioned stations for NO_2, SO_2, and benzene. All results demonstrated compliance with the relevant standards.

A summary of monitoring results for ambient air quality is provided in Appendix 3.2a.

4.2.2.2 Stack Emissions

The annual round of stack emissions monitoring was conducted in November and December 2012 for most equipment, with the exception of PSG 1 MOL Turbine 5 and WBH due to the equipment being out for maintenance. Crude Topping Units were decommissioned and therefore removed from the monitoring programme.

All of the stacks were sampled for NO_x, CO, sulphur oxides (SO_x) with calculations for particulate matter (PM_{10}) performed. In addition, carbon dioxide monitoring was conducted for operations purposes.

Monitoring results for PSG MOL turbines demonstrated general compliance with ESAP standards, with the exception of PSG 1 Generator 3 for CO (ESAP standards) and PSG 2 MOL Turbine 3 for NO_x (MoE mass emissions standards).

A full set of results is provided in Appendix 3.2b.

4.2.2.3 Noise

In 2012, 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 standards.

A summary of monitoring results for environmental noise is provided in Appendix 3.2c.

4.2.2.4 Effluent

Effluent discharges in 2012 consisted of treated hydrocarbon contaminated water from PSG 1 and PSG 2 retention ponds; and treated sewage from PSG 1 camp, PSG 2 camp, PSG 2 site and Borjomi OSRB. In addition, the EDDF Oily Water Separator (OWS) was tested for oil in water content. All of these discharges are subject to regular monitoring.

Existing RBC type STPs were removed from PSG 2 camp and installed at PSG 1 camp, though additional maintenance works are required and therefore the RBC was not commissioned. The new RBC type STP had been installed at the EDDF, which is subject to commissioning in 2013-Q1. The Tsalka OSRB RBC type STP was not monitored due to the absence of discharge.

The results indicated general compliance with the Project-specified standards, with the exception of PSG 2 site STP, which showed an exceedance of coliform bacteria in one reading, and the PSG 2 retention pond where an exceedance of Chemical Oxygen Demand (COD) was noted in another reading. The coliform exceedances were investigated and found to be caused by STP ultra violet lamp 'wiper' motor damage at the PSG 2 STP. Corrective actions were identified and recorded in the Tr@ction system. The COD exceedance case was not investigated as the monitoring results were received 2 months late and as such, an investigation could not be conducted.

All STPs were handed-over to the maintenance department, along with the relevant documentation and preventative maintenance programmes set-up in the Maximo system.

A summary of monitoring results is provided in Appendix 3.2d.

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 2012 along the BTC pipeline and around PSGs. 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 3.2e.

4.2.2.5.1 Non-Hazardous Landfill Groundwater

Two quarterly rounds (2012-Q1 and 2012-Q2) of underground water monitoring were conducted at the BTC non-hazardous landfill. During both rounds, only monitoring well 3 and 4 where sampled as monitoring wells 1, 2 and 5 were dry. During 2012-Q3 and 2012-Q4, no monitoring was completed, as all monitoring wells were dry.

The results of the analysis showed general compliance with the background geo-chemistry, with some fluctuations within several parameters, such as electrical conductivity, sulphate (SO_4), chloride (Cl), sodium (Na) and boron (B).

A summary of groundwater monitoring results for non-hazardous landfills is provided in Appendix 3.2e.

4.2.2.6 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 2012. The figures for actual fuel used are being received for MOL turbines; equipment specifications and fuel used from assumed running hours is being utilised for generators and WBHs emissions calculations.

A reforecasting exercise was also completed in 2012 using new forecast data and the previous years' emissions data.

A summary of GHG air emissions calculation results is provided in Appendix 3.2f.

4.2.2.7 Waste

The main waste generation areas are at PSG 1 and PSG 2. The Central Waste Accumulation Area (CWAA) 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 2012, BTC Georgia continued using local companies for BTC waste recycling, such as: Caucasus PET Company for plastic waste; Vargi Limited for paper/cardboard; and NSM and Company for metal waste recycling.

To minimise stored waste volume, a heave shredder was installed in 2012 for used tires, non-hazardous air filters and plastic waste shredding.

At the CWAA, construction of the storage building for waste chemicals was completed.

EU-standard non-hazardous waste landfill in Georgia began operation in 2009. According to the design, overall capacity of the landfill is 27,500 m^3. The estimated lifetime is about 40 years and it is being developed progressively with 4 cells constructed and operated step-by-step during the landfill lifetime. In March 2012, the second part of the first cell was constructed, checked and commenced operations.

BTC site camps continue using food waste macerators and a dewatering system.

A summary of waste generated in 2012 is provided in Appendix 3.2g.

4.2.3 Turkey

4.2.3.1 Ambient Air Quality

Ambient air quality monitoring is undertaken only at the CMT. The results are presented in Appendix 3.3a. 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. Volatile Organic Compounds (VOCs) such as Benzene, Toluene, Ethyl Benzene and Xylene (BTEX), SO_2 and NO_x are measured at 8 locations and around the CMT once every 3 months.

In 2012, 4 surveys were undertaken between March and December.

All annual average measurement results of parameters complied with the Project-specific standards and limit values set forth by the Turkish Regulation. The highest BTEX values were observed at CMT-2 Golovasi village, CMT-3 Karatepe Quarter, CMT-4 Sahil Sitesi and CMT-8, which are intensively under the effect of the BOTAŞ facilities next-door. Some occasional increases were also observed at other monitoring locations, but these were not significant.

The annual average values of parameters measured in 2012 are very close to the values of 2011.

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 (EEMP).

Stack emissions monitoring results for 2012 are shown in Appendix 3.3b. The results demonstrate compliance at all facilities except for the IPT 1 wax handling water heater soot results. The maintenance of the equipment was done by the BIL maintenance department, following the non-compliant monitoring result.

4.2.3.3 Noise

The Project standard for noise specifies a maximum of 45dB(A) [A-weighted decibels] for night time ambient noise levels at sensitive receptors or a 3dB(A) increase above background levels. Noise modelling was undertaken as part of the ESIA process (Volume II, Section 7.9.4) and indicated that 40dB(A) 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. 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 onsite noise is rising. Neither of these situations arose during 2012, consequently, no ambient monitoring was conducted.

4.2.3.4 Aqueous Discharges

Aqueous discharges originating from BTC Turkey facilities, as well as downstream surface water bodies that receive the aqueous discharges are monitored on a monthly basis. Upstream water bodies are similarly monitored to establish 'control' conditions. Aqueous discharge monitoring results for 2012 are shown in Appendix A.2.3c.

During 2012, a number of aqueous discharge streams did not meet Project standards. In such cases, the effluent was recycled or trucked to Project-approved Municipal Waste Water Treatment Plants (WWTPs) for further treatment.

In addition, a number of enhancements were conducted during 2012. Details can be found in Appendix 3.3c.

4.2.3.5 Groundwater

The main objectives of the monitoring programme are as follows:

- Monitoring operational impacts of groundwater abstraction from wells; and
- Monitoring the possible contamination of groundwater by BTC facilities.

The monitoring programme was carried out at the CMT, PT 1, PT 2, PT 3 and PT 4 in May, August and November of 2011. Since the monitoring report was not available at the time of the 2011 Annual Report to the Lenders, the results are summarised in this Report. The water quality monitoring and groundwater level measuring processes were not conducted at these sites, as there was no well in IPT 1 and IPT 2.

Water Quality

The target parameters at PT 1, PT 2, PT 3, PT 4 and CMT were Potential of Hydrogen (pH), turbidity, EC/salinity/Total Dissolved Solids (TDS), dissolved oxygen, total coliforms, ammonia, nitrate, nitrite, TOC and TPH'. In addition, the arsenic (As) analysis was conducted at the station wells, PT 2 and PT 3. The parameters quarterly analyzed in samples taken from the well at PT 4 were dissolved oxygen, EC/salinity/TDS, pH, turbidity and TOC.

According to the analysis results:

- The 'pH' parameter is in the upper and lower range limit for all stations;
- TDS, nitrate and nitrite parameters are below limits;

- The 'dissolved oxygen' parameter values of between 6 and 8 complies with the Class II limit values set forth in the relevant Turkish Regulation[4] for all stations;
- The turbidity parameter is above the limits for all stations except PT 2. The analyses results are close to World Health Organization standards limit (0.1NTU) and no abnormal situation was observed;
- No bacterial growth was determined at any stations except PT 4, (PT 4 was checked in May 2012 during the water quality monitoring studies. The results will be reported in 2013 annual report);
- The ammonia' parameter is below the limits for all stations as opposed to limits given in the relevant Turkish Regulation;
- The "As" parameter at PT 2 and PT 3 is below the limits given the relevant Turkish Regulation;
- The TOC's analysis results fall within Class II (Medium Quality Groundwater) at PT 2 and PT 4 according to the values referred in the relevant Turkish Regulation except PT 4. TOC values of 1.1mg/L in August and 1.3mg/L in September, which are in compliance with Class I (High quality groundwater) according to the relevant Turkish Regulation; and
- TPH parameters are near detection limit at all PTs and no abnormal situation was observed concerning the TPH value of CMT (0.11mg/L).

Groundwater Levels

Within the scope of the 2011 groundwater level monitoring, measurements were performed at PT 2, PT 4, and CMT Yanıkdeğirmen wells in order to determine the effects during the operation phase in May, if any. The conditions at PT 1 and PT 3 were not suitable to measure the level (obstruction of probe within the well at a certain depth). Therefore, level measurement could not be accomplished at PT 1 and PT 3.

General findings of the groundwater level monitoring studies are as follows:

- Groundwater level is lower than the level recorded during construction phase monitoring at PT 2 Well 1;
- Groundwater level is higher than the level recorded during construction phase monitoring at PT 4 Well 1; and
- Groundwater level is lower than the level recorded during construction phase monitoring at CMT-Yanıkdeğirmen.

The operation phase groundwater monitoring studies started in 2011 and hence there are not sufficient data available for comparison of groundwater levels. Therefore, the comparison was made against previous groundwater sustainability reports. In order to provide more information about groundwater level changes and to make evaluations that are more reliable about groundwater level monitoring, more data are needed.

As the 2012 groundwater monitoring report is not yet finalised the results will be presented in 2013 E&S Annual Report.

4.2.3.6 Waste Management

In 2012, about 468t of solid waste was disposed off-site. Of this, 24% was hazardous waste that was sent to Izaydas for incineration, 31% was domestic waste sent to the Antakya Municipal Landfill Site for landfill and the rest, comprisingnon-hazardous waste, was reused or recycled. Appendix 3.3d provides details of waste volumes generated.

Hazardous waste, waste oil and Seveso declarations to the MoEU have been completed by BIL for all facilities for 2012.

[4] *Water Pollution Control Regulation 1988*.

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

4.3 STATEMENT OF COMPLIANCE

BTC and its agents have complied with the ESAP, applicable environmental laws and applicable Lender E&S policies and guidelines in all material respects during 2012.

All non-compliances identified in 2012 are summarised in the Executive Summary and are shown in Appendix 3. Non-compliances relating to other audits are provided in Section 11 (and detailed in Appendices 2 and 4). For all non-compliances identified, corrective actions have been developed and implemented.

4.4 CHANGES IN APPLICABLE ENVIRONMENTAL LAW[5]

4.4.1 European Legislation

New and amended EU directives, regulations, and decisions announced in 2012 have been reviewed. There were no environment-related legislative changes in European legislation that were potentially relevant to BTC in 2012.

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 2012 that were potentially relevant to BTC Azerbaijan.

4.5.2 Georgian Law

The following environment-related legislative changes occurred in 2012 and are potentially relevant to BTC Georgia.

Regulation Title	Regulation Topic	New/ Revision	Potential Impact on BTC Georgia Operations
Law No.1775 on Licenses and Permits	Licensing	Revision No. 6545 22-Jun-12	If a legal entity is involved in any activity that is subject to licensing or permitting under this Law, then the activities may not be commenced without a permit/license.
Law No.2937 on License and Permit Fees	Licensing	Revision No. 6545 22-Jun-12	Legal entities have to pay the respective license/permit fee if they engage in the licensing/permitting activity throughout the project, unless HGA or other international treaty exempts such participants from such payment.

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

Regulation Title	Regulation Topic	New/ Revision	Potential Impact on BTC Georgia Operations
Law No.2116 on Ambient Air Protection	Ambient Air	Revision No. 6160, 8-May-12	The requirements of the Law shall apply if the projects carried out directly by BTC or through its contractors, involve harmful anthropogenic impacts to the ambient air.
Resolution No.32 of Georgian National Energy and Water Supply Regulatory Commission on Rules of Supply and Consumption of Drinking Water	Drinking water supply and consumption	Revision No. 4 22-Mar-12	This Order shall apply if the projects carried out by BTC or its contractors, involve consumption of drinking water through supply system.
Resolution No.132 of Government of Georgia on Approval of Regulations on Rules and Conditions of Issuance of Forest Usage License	Licensing	Revision No.336 22-Aug-12	If BTC, throughout implementation of their projects, will be involved in the maintenance or reinstatement of forests, measures determined by this Regulation will have to be carried out.
Order No. 96 of Minister of Environmental Protection and Natural Resources on Approval of the Regulations on Lawful Movement of Timber and Facilities of Initial Processing of Round Timber	Movement and Processing of Timber	Revision No. 234 26-Jul-12	The Order shall apply if the projects carried out directly by BTC or through its contractors, involve production, possession, use, transportation of woods.
Government Resolution No. 184 on Approving List of Materials of Limited Circulation and Rule of Issuance of Permit for their Production, Transportation, Import, Export, Re-export or Transit.	Licensing	Revision No. 178 14-May-12	Applicable in cases where BTC or its contractors are engaged in production, transportation, import, export, re-export or transit of materials of limited circulation.
Resolution No.136 of Government of Georgia on Approval of Rules and Conditions for Issuance of Mineral Resources' Extraction License	Licensing	Revision N 130, 5-Apr-12	If the projects carried out by BTC or its contractors, involve extraction of minerals, the license will be issued in accordance with this Resolution.
Law No. 946 on Fees for Using Natural Resources	Natural Resources Fees	Revision No. 5749 2-Mar-12	Projects carried out by BTC may involve the use of natural resources under the state ownership.

4.5.3 Turkish Law

A list of national environmental regulations that were published or re-issued in 2012 is shown below, along with a statement regarding BTC's likely response.

Official Gazette No	Effective Date	Regulation On:	New/ Revision	Impact on BTC Turkey Operations?
28453	31.10.2012	Regulation on Ports *(Regulation on Ceyhan (BOTAŞ) Port was abolished)*	New	The operator of coastal facilities is responsible for taking preventive action to keep the jetty and shore clean during and after handling activities.
28483	30.11.2012	Regulation on Surface Water Quality Management	New	No obligation for facilities in the scope of this Regulation. It aims that the MoEU will classify surface waters of the country, develop monitoring and preventive programmes, create protection zones.
28257	07.04.2012	Regulation on Protection of Groundwaters against pollution and deterioration	New	No obligation for facilities in the scope of this Regulation. State Water Works will classify groundwater network at national level and develop monitoring and preventive programmes.
28274	25.04.2012	Regulation on Greenhouse Gases Emission	Revision	Monitoring will start in 2015.
28300	22.05.2012	Regulation on Control of Waste Electrical & Electronic Items	New	Waste electrical and electronic items are to be separately stored from other wastes. All BIL site managers were informed of the legal requirements. Waste electrical and electronic items will be disposed at licensed facilities.

5 OIL SPILL RESPONSE

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

The OSRP for Azerbaijan underwent a minor update in May 2012 as summarised in Section 5.3.

In August 2012, BTC and BIL signed a Protocol that sets out terms and conditions of co-ordinating the services to be provided by the OSR Contractor. Since 2012, BTC has had a direct contract with NRC (the National Response Company, previously called Seacor) who started to operate under BIL's supervision further to the execution of the Protocol. In accordance with the Protocol, the OSR equipment was handed over from BIL to NRC in September 2012 to be stored and maintained in NRC's OSR bases. BIL unilaterally terminated its contractual relationships with the internationally recognised oil spill response contractor in summer 2011; subsequently BTC Co contracted such contractor directly and engaged with NRC Turkey directly in 2012.

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 2012

Asset	Liquid			Gas
	<1bbl	>1bbl		
	Uncontained	Contained	Uncontained	
BTC Azerbaijan	1	0	0	0
BTC Georgia	0	0	0	0
BTC Turkey	3	0	0	0

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

5.2.1 Azerbaijan

There was 1 uncontained material release <1bbl during 2012.

Estimated 0.006bbl hydraulic oil (PSA2 Pipe Yard – March 2012)

Minor oil spots were observed on the ground under a non-operational cherry picker. The contaminated area was cleaned up and a drip tray placed under the cherry picker.

5.2.2 Georgia

There were no reportable material releases during 2012.

5.2.3 Turkey

5.2.3.1 Contained

There were no contained spills >1bbl recorded during 2012 reporting period.

5.2.3.2 Uncontained

There were 3 uncontained spills during 2012 reporting period.

Estimated 0.01bbl lube oil (IPT 1 – June 2012)

A foam truck was seeping lube oil. The dripping part was fixed. Regular inspection of the truck has continued. The spill on the station road was cleaned up.

Estimated 0.02bbl crude oil (Block Valve Turkey [BVT] 11 – October 2012)

During routine inspection of BVT11, oil sheen on gravel caused by a crude oil spill from a bypass isolation valve was observed. Isolation was applied from the lubrication point and the tap was screwed. Contaminated gravel was cleaned up and sent to the station hazardous waste collection point.

Estimated 0.03bbl diesel (KP 383 – November 2012)

At KP 383 works, the fuel hose of the compressor was removed during transportation back on the hi-up and diesel spilled to the ground. The compressor was taken to the station workshop for repair and the hose was re-installed. Contaminated gravel was collected and sent to the station hazardous waste collection point.

5.2.3.3 Illegal Taps

No illegal taps occurred in 2012.

5.2.3.4 Remediation

A bioremediation programme was implemented by BIL at the CMT for approximately 150m^3 of contaminated soil originating from previous illegal taps. The programme was completed and the bioremediated soil was confirmed as non-hazardous waste (soil). Therefore, correspondence was completed and it will be sent to Antakya Municipal Landfill Site for disposal in 2013-Q2.

During repair work at BVT 24, approximately 6m^3 of oil contaminated soil (which originated from a BVT 24 spill in 2009) was excavated from the site and then stored in a dedicated place onsite. Soil sampling was conducted in order to understand the contamination level of the soil. Based on laboratory results, TPH, Cr and Nickel (Ni) were above the limits and the contaminated soil was sent to the CMT for bioremediation in October 2011. The bioremediation process for BVT 24 oil contaminated soil has been ongoing. Bio-remediation product was added twice to the contaminated soil (October 2011 and November 2012). The soil layer was watered and aerated periodically depending on weather conditions. Another soil sampling is scheduled to be carried out in 2013-Q2 to understand the residual contamination level. Depending on the analysis results, disposal options will be considered.

5.3 SUMMARY OF MATERIAL MODIFICATIONS TO THE OIL SPILL RESPONSE PLANS

The OSRP for Azerbaijan was updated in May 2012 to include revised position titles.

The OSRP for Georgia underwent no changes in 2012.

The OSRP for Turkey underwent no material changes, except for the change that the internationally recognised OSR Contractor is now subcontracted by BTC following BIL's termination of contractual relationships with the service provider in 2011.

It should be noted that a major update of the OSRPs is expected at the end of 2013 based on a gap assessment against 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 (SDIs) and Community Development Initiatives (CDIs). Refer to Section 6.2.

6.1.2 Georgia

6.1.2.1 NOx 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 on 31 December 2013. Its scope includes provision of funds within the SDI to implement renewable energy and energy efficiency projects for Georgian communities.

BTC Georgia has already successfully completed 2 of 3 offset projects related to NO_x emissions including solar water heating systems in Public Boarding School No 203 for deaf and diminished hearing children of Tbilisi, and Tbilisi SOS Children's Village. The systems are fully installed and both working well. Both of these projects were visited during the fourteenth post-financial visit of the IEC to Georgia from 8 to 21 July 2012.

During the review of the detailed design of the third offset project, the Borjomi Micro Hydro Power Plant as an alternative to electricity from the National Grid, it was concluded that this project would not be feasible due to operational and maintenance issues. The two completed solar water heating system projects have demonstrated success in implementation, and the Energy Efficiency Centre Georgia has extensive experience in installation and maintenance of these solar systems. As an alternative to the Borjomi Micro Hydro Power Plant project, BTC commenced implementation of another solar project at Tbilisi Baby House. This facility seeks to improve sanitary norms for baby care (158 infants) and their living conditions. The project would consist of installing a solar thermal system for hot water supply and the implementation of energy saving measures such as weatherisation of attics, replacement of old wooden windows and doors with double glazed equivalents in polyvinyl chloride frames, and replacement of 100W incandescent light bulbs with 20 to 22W energy saving bulbs.

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.

6.1.3 Turkey

Ten construction phase projects (EIP 1) and 5 operation phase projects (EIP 2) are complete. There are 5 ongoing projects. New projects are also under development. A summary of EIP activities is provided in Table 6.1.

Table 6.1: EIP Turkey: Summary of Activities

	Project	Phase	Started	Completed	BTC Funds Spent US$
1	Sea Turtle Expedition	Construction (EIP 1)	01/08/2003	31/12/2005	175,000
2	Research on Monk Seals	Construction (EIP 1)	01/08/2003	31/12/2004	100,000
3	Improving the Conservation and Status of Caucasian Black Grouse in Turkey	Construction (EIP 1)	01/08/2003	31/12/2005	230,000

	Project	Phase	Started	Completed	BTC Funds Spent US$
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
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 Ecosystem-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	Operations (EIP 2)	01/12/2006	31/05/2011	420,000
12	Biogas/Fertilizer Demonstration in Kahraman Maras	Operations (EIP 2)	01/12/2006	31/12/2009	62,000
13	Conservation Priority Analysis for Central and South BTC Pipeline Regions	Operations (EIP 2)	01/12/2006	31/12/2011	1,351,721
14	Grand Kackar Project	Operations (EIP 2)	01/12/2006	31/12/2010	50,000
15	Small Investments Fund (Phase 2)	Operations (EIP 2)	01/05/2007	31/05/2009	420,000
16	Yumurtalik Lagoons Wetland Management Plan (Phase 2)	Operations (EIP 2)	01/12/2008	Ongoing	905,000
17	Conservation of Commercially Important Endangered Endemic Plants in Ardahan and Kahramanmaras	Operations (EIP 2)	01/12/2007	31/12/2011	275,000
18	Terresterial Wildlife Rehabilitation Centre	Operations (EIP 2)	01/04/2010	Ongoing	325,000
19	Marine Wildlife Rehabilitation Centre	Operations (EIP 2)	01/01/2011	Ongoing	310,000

	Project	Phase	Started	Completed	BTC Funds Spent US$
20	Eastern Anatolia Waste Management	Operations (EIP 2)	01/01/2011	Ongoing	200,000
21	Integrating Biological Diversity to Forestry Management	Operations (EIP 2)	01/01/2012	Ongoing	103,397
	TOTAL				**7,812,118**

The EIP continued to promote biodiversity as well as extending 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).

6.1.3.1 Project Status as of December 2012:

A summary of key EIP developments in 2012 are as follows:

- **Integrating Biological Diversity to Forestry Management**: The Conservation Investment Priority Analysis for the Central and South BTC Pipeline Regions project has been restructured under the Integrating Biological Diversity to Forestry Management project. The project aims to support the Government on biodiversity and non-timber forest products in Turkey via a biodiversity integration study in priority forest areas along the BTC pipeline. Technical support has been provided to the Forest Department for forest management planning and implementation in 2012.
- **Yumurtalik Lagoons Wetland Management Plan (Phase 2):** The project aims to maintain momentum towards conservation of a wetland ecosystem and reducing some of the land use complexities that the local stakeholders are facing. Monitoring of water quality continued in 2012. Site works were performed in 2012 as a baseline for the preparation of Omer and Yapi Lakes Restoration Feasibility Report. Training on wetlands and natural protection were conducted for students. Several meetings with governmental and non-governmental institutions were carried out for network development on wetlands management.
- **Terrestrial Wildlife Rehabilitation Centre:** This project aims to establish and operate a terrestrial wildlife rehabilitation centre with the aim of caring for sick, injured and orphaned wildlife as well as increase Turkey's capacity with respect to wildlife rehabilitation. The centre rehabilitated 13 wild animals including big mammals like wolves and foxes since the opening date. Operational procedures for the centre were prepared.
- **Marine Wildlife Rehabilitation Centre:** This project aims to enhance and operate a marine wildlife rehabilitation centre with the aim of caring for sick, injured and orphaned wildlife as well as increase Turkey's capacity with respect to wildlife rehabilitation. Care and Treatment Protocols have been written for the care of sea turtles. A national workshop was held for NGO's and the government on how to carry, handle and transport sea turtles aiming at increasing sea turtles transport coverage around Turkey and increasing number of people trained on handling and providing basic life support to injured sea turtles.
- **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 Protocol between BTC, Erzurum Municipality and the EIP Grantee was signed in June 2012. A waste

characterisation study was initiated as a first step in the preparation of waste management plans in line with EU directives.

6.1.4 Environmental Investment Programme Expenditures 2012

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 2012.

Table 6.2: Cumulative EIP Budget and Expenditures (US$) 2003-2012

	Azerbaijan	Georgia	Turkey[6]	TOTAL
EIP budget	3,467,000	3,000,000	8,070,000	14,037,000
Total spent-to-date (at end 2012)	1,697,298	2,877,548[7]	7,812,118	11,626,846

Table 6.3: Summary of EIP (Operations Phase) Expenditures (US$) 2012

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	0	300,000	500,000	800,000
Actual	0	300,000[8]	443,400	743,400

6.1.5 Environmental Investment Programme Budget 2013

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 2013 planned budget.

Table 6.4: EIP Budget (US$) 2013

	Georgia	Turkey	TOTAL
Budget 2013	750,000[9]	380,000	1,130,000

6.2 SUMMARY OF COMMUNITY DEVELOPMENT INITIATIVES[10]

A 5-year strategy paper was developed for Azerbaijan, Georgia and Turkey for the years 2012 to 2016 and has been approved by BTC management and by the Implementing Partners (IPs).

All projects designed and implemented in these 3 countries are in line with the approved strategy.

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.

[6] Includes technical support to grantees on top of the grants awarded.
[7] Includes US$500,000 under the Agreement on Bakhmaro Resort Zone Forest Recovery and Reforestation Programme and Eco-wards Programme.
[8] Additional US$145,000 to the initially planned US$300,000 was added in 2009 for Ktsia-Tabatskuri Reserve Management implementation project.
[9] Includes US$450,000 from Project Environmental Investment Programme budget. US$750,000 transfer is postponed due to the reorganisations taking place in the relevant ministries.
[10] In Azerbaijan, the term CIP has changed to CDI.

Table 6.5: BTC and SCP CDI and Other Investments – Visualising the Benefits (to year end 2012)

Investment Type	Azerbaijan	Georgia	Turkey
Number of communities benefiting	99	77	330 in total (in 2012, projects mainly focused on 220 villages).
Amount invested (US$)	894 million[11]	5,941,220[12]	30.790 million.[13]
IP/number of local/national NGOs	4 local NGOs	2 IP and 5 NGOs 2 subcontractors assisting	7 IPs (all national) implementing projects in partnership with 135 local/national NGOs[14] and local authorities along the BTC route under SDI programme.
% Women in community action groups for 2012	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	N/A	2	11
Number of education facilities improved	N/A	5	134 schools upgraded (in addition, 622 women/girls have applied to open school programmes). 164 schools have been painted under co-operation between BTC, Filli Boya and Çukurova University, Search and Rescue Association. Filli Boya provided all of the paints to the schools and BTC contributed for the materials such as paintbrush etc.
Number of water supply systems improved	-	43 potable, 31 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	-	17km	Village roads were improved as part of reinstatement activities during the construction and reinstatement phase. However, BTC's pipeline repair contractors have upgraded some of the village roads or access roads to the fields.
% Infrastructure project achieving >25% community contribution	-	100% Contribution was average 40%[15]	Approximately 500 quick impact projects have been completed between 2003 and 2012. 95% of all infrastructure projects have cash or in-kind beneficiary's contribution.
Number of medical staff trained	-	0	401

[11] Amount invested: until 31 December 2006 – accruals plus amount disbursed, from 1 January 2007 – only amount disbursed. This amount includes spend on BTC and SCP projects within SDI, but for 2011 only the amount of CDI projects added.
[12] Only BTC and SCP share.
13 Total amount invested for effective governance, enterprise development and community development projects, which are all implemented along the pipeline route since 2003.
[14] 133 Community Based Organisations (associations, co-operatives, farmers union), 1 NGO working in nationwide and 1 branch of chamber of commerce.
[15] Due to the new Community Based Organisations involvement contribution was lower in some of the communities.

Investment Type	Azerbaijan	Georgia	Turkey
Number of people receiving direct medical support	-	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).
Number of micro-loans issued	-	4,503	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	-	100%	Approximately 87% of the micro-loans were repaid and the process is ongoing for the remaining 13%, which will be transferred to the Andırın Cherry Producers Union.
Average value of micro-loan (US$)	-	2,000	Not applicable in 2012.
% Women receiving micro-loans	-	70 %	Not applicable in 2012.
Number of demonstration farms/agricultural trainers	23 agricultural trainers 24 greenhouses were constructed	238 demonstration farms. 60 demonstration farming groups; 11 trainers	2,603 demonstration farms were established in the project villages (333 agricultural trainers were trained).
Number of farmers trained	360 farmers	5,890	Over 131,199 (also 842 beekeepers).
Number of livestock vaccinated	-	828	1,066,804 livestock vaccinated, CIP is giving support to Cattle Breeders' Unions; 60,722 cows have been artificially inseminated to-date (including livestock vaccinated more than once).
Weight (tonnes) of high quality seed provided	-	23.2t	Over 1,375t (also over 63,000 units of fruits saplings provided).
Number of co-operatives established	9 youth funds established (Eurasia Partnership Foundation project) 4 milk collection points were established	25 co-operatives (15 producer and 11 service groups are created)	70 village-based organisations established (co-operatives, associations and informal Community Based Organisations [CBOs]). 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.
Number of people received vocational trainings	-	-	Vocational trainings to 641 unemployed. Career consulting to 1562 people. Workforce capacity building trainings to 834 people. In total 600 people were employed.
Number of Small and Medium Enterprises (SMEs) benefited from enterprise development supports	-	-	123
Number of new enterprises established	-	-	39

6.2.1 Azerbaijan

6.2.1.1 Sustainable Development Initiatives in Azerbaijan

In 2012, BTC and SCP spent about US$2,200,000 on the implementation of SDIs in Azerbaijan.

Youth Business Leadership project

A 2-year Youth Business Leadership project financed by BTC and its co-venturers, the United States Agency for International Development (USAID) and supported by American Chamber of Commerce (AMCHAM), is designed to support professional development of the next generation of business leaders in Azerbaijan.

The primary purpose of the 2-year project is to empower young students to become entrepreneurs and future business leaders by providing them with opportunities to gain employment experience through internships at various private companies to develop their business management knowledge beyond the classroom. The project will provide internships to 120 third and fourth year university students from Baku and Ganja.

Highlights for 2012 include:

- BTC on behalf of its co-venturers, USAID and AMCHAM signed the Memorandum of Understanding in support of the project;
- Presentations were conducted in Azerbaijan State University, Azerbaijan State Economic University and Qafqaz University with the aim of familiarising students with the project itself and opportunities for students; and
- Selection of 25 students, who passed the tests and interviews, as successful candidates for training sessions and internships to be held in 2013.

Caspian Environmental Information Centre

The Caspian Environmental Information Centre (CEIC) is being implemented within the framework of the Caspian Environmental Programme developed for and by Caspian Littoral States. The main objective of the Caspian Environmental Programme 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 CEIC project is to establish an online environmental database that will be used as a centralised regional hub and provide up-to-date information on the environmental situation of the Caspian Sea basin; and promote environmental data collection, sharing, monitoring, analysis, harmonisation and public communication. The CEIC will also be used as a tool to promote sustainable development and environmental activities in the region.

Currently the CEIC is available at www.kaspinfo.com and is in the final stage of technical acceptance by BTC's environmental specialists.

Local Governance, Youth Development and Environment Programme

The Local Governance, Youth Development and Environment Programme 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 Programme 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 Programme encompasses 9 municipalities in 9 villages along the BTC pipeline 'Community' and targets community youth.

Highlights for 2012 include:

- 9 Youth Chambers were created, each consisting of 5 young people living in each respective community;
- Chambers within each of the 9 municipalities were trained to enhance their leadership and project management potential in addressing local-level environmental challenges in their communities;
- 45 young people benefited from 'municipal structure' and 'project writing' training;
- 42 community members participated in environmental awareness-raising sessions;
- 47 young people participated in 'environmental awareness' training; and
- Youth chambers received small sub-grants to implement micro-projects in their communities.

In total, 57 municipal staff members from 9 municipalities enriched their knowledge in strategic planning, performance measurement and public participation in local governance through training sessions conducted in each target community. The training covers the following topics: municipal performance measurement system, measurement indicators and strategic planning; project proposal development; public participation in local governance; transparency, accountability and information accessibility.

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 Programme:

- 121 companies successfully completing the Programme since 2007;
- 210 business development plans (action plans) and 205 gap analyses produced to support participating companies in delivering improvement activities;
- Local companies investing approximately US$11.08 million in new capital equipment;
- EDTP clients hiring 1,350 new employees; and
- Assisted local companies to secure contracts with local and international companies valued at more than US$333 million, from which more than US$182 million are with BTC.

Highlights for 2012 include:

- 350 local companies engaged in EDTP activities;
- 23 development plans implemented; and
- 829 new employees hired through EDTP clients.

Advisory Services on Macroeconomic Management and Institutional Reform

The Advisory Services on Macroeconomic Management and Institutional Reform technical assistance project was successfully completed in January 2012. The IP, the 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 was US$1,250,000.

A seminar was organised with the participation of Ministry of Economic Development staff, CASE experts and specialists from BTC. Presentations took place on topics such as the economy of Azerbaijan in 2012, determinants of inflation in Azerbaijan, and global energy and economic trends and their possible impact on the Azerbaijani economy.

Business Enabling Environment project with the International Finance Corporation (IFC)

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

Highlights for 2012 include:

- Permits Portal (www.icazeler.gov.az) was completed and institutionalised, as well as strengthening the centralised e-Registry of Inspections (www.yoxlama.gov.az). These elements increase access to regulatory information and improve transparency, which are key to reducing transaction costs and improving the business environment;
- As required by regulations on the Permits Portal, for the first time the Government of Azerbaijan placed more than 100 draft laws and regulations on the site for public discussion, which related to entrepreneurship;
- The SME Portal (www.biznesinfo.az) was launched in February 2012. The site provides free analytical materials, self-learning tools, and business-focused news to the targeted audience, the local businesses. Over the reporting period, the number of unique visitors consistently exceeded 40,000 per month. Estimated downloads of various templates and self-help materials developed by the project exceeded 10,000; and
- In June and July 2012, the project joined with the Confederation of Azerbaijan Entrepreneurs and the Ministry of Economic Development, and Minimax LLC to conduct regional seminars in six cities (Ganja, Guba, Lenkoran, Mingachevir, Sheki, and Sumgayit) across the country. These seminars aimed to raise private sector awareness of the resources developed and supported by the project including the Permits Portal, the e-Registry of Inspections, and the SME Portal. The seminars enjoyed strong interest from 200 participants, mostly from the SME sector.

School of Project Management

The School of Project Management was established in Khazar University with the aim to develop the project management skills of individuals working in both the private and public sectors in Azerbaijan. The project offers access to a globally recognised, comprehensive project management programme devised by the industry leader ESI International.

Key achievements since inception of the project include:

- Since 2010, 183 representatives of some 77 private and public sector organisations enrolled at the School of Project Management. Of these, 51 qualified for the George Washington University Masters Certificate and 126 for Associate Certificates;
- In June 2012, the first graduation event took place during which the first graduates received their Masters Certificate in Project Management from the George Washington University. The graduates represented the various business sectors including oil and gas, government, engineering and construction, marine and

geology, education, banking and finance, telecommunications and others. The project signed a contract with the Ministry of Education to provide training to Government employees across the Ministries as part of a joint Azerbaijan Government and World Bank Public Investment in Capacity Building project. To date, 30 participants have been enrolled at the School of Project Management with 20 applicants expected to start in 2013; and

- The entire training curriculum and Project Management Terms of Reference with over 800 PMI® Project Management Body of Knowledge (PMBoK®) terms were translated into Azerbaijani, enabling companies and organisations to provide the same, world-class training to employees who do not speak English.

SDI initiatives are summarised in Table 6.6 below:

Table 6.6: Summary of SDI Initiatives

Project	Partners	BTC and SCP Grant[16] (US$)	Partner Contribution (US$)	Total Project Funds (US$)
EDTP	Azerms Limited Liability Company	1,261,000	N/A	5,044,000
Advisory Services on Macroeconomic Management and Institutional Reform	CASE	312,500	N/A	1,250,000
Business Enabling Environment project with IFC	IFC	115,000	4,300,000	4,760,000
Caspian Environmental Information Centre	Stiftelsen Grid Arendal	37,500	40,000	190,000
Local Governance, Youth Development and Environment Programme	Eurasia Partnership Foundation	48,950	268,074	463,873
Youth Business Leadership project	USAID, AMCHAM, Junior Achievement Azerbaijan	25,000	100,000	200,000
School of Project Management	Khazar University, ESI International	400,050	N/A	1,600,210
TOTAL		**2,200,000**	**4,708,074**	**13,508,083**

6.2.1.2 Community Development Initiatives in Azerbaijan

In 2012, BTC Azerbaijan continued to support sustainable CDIs along the BTC and SCP pipelines. The community programme was implemented in 99 communities across Azerbaijan in 2012.

Various initiatives were undertaken during the year impacting BTC and SCP pipelines neighbouring communities across Azerbaijan. The focus, as before, was on income generation and the creation of wider economic opportunity. Together with co-venturers, about US$780,598 was allocated to CDI programmes in 2012 and used to support various projects as outlined in the following sections.

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

Community-based support for dairy producers

The objective of this project is to expand dairy production by small farmers and to promote regional milk collection centres to link with commercial dairy processors in Azerbaijan. The project's main funders are the USAID along with BTC and its co-venturers in Azerbaijan. Implemented by NGO "Umid" Support to Social Development Public Union in July 2010 the programme was completed in December 2012. The project budget was US$332,389, of which US$225,554 was spent in 2012.

The project activities include:

- The establishment and commencement of milk collection points in 4 communities (Saritepe community of Shamkir region, Garabujag community and Karrar settlement of Kurdamir region, Gushchular community of Goranboy region) in order to improve the dairy producers' access to the market. A laboratory was also established in Yevlakh milk collection point;
- Organisation of 7 meetings between the support centres (forage producers, artificial insemination entities, loan agencies) and dairy producers in order to raise quality and quantity of produced milk. The number of participants at these meetings totalled 152 people (including 8 women). Information leaflets about the support centres were distributed in every target community; and
- 28 training sessions were provided on market knowledge, looking after and feeding cattle, milking cows and storage of milk to dairy producers of the target communities in order to build their knowledge and skills. 450 people (including 51 women) attended the training.

The additional scope of the current agreement covers the purchase and installation of solar heating systems in schools and kindergartens constructed and rehabilitated by BTC and co-venturers along BTC and SCP communities of Samukh, Goranboy and Kurdamir regions.

Income generation and capacity building programme

This is a two-year project being implemented by Ganja Agribusiness Association in collaboration with the Azerbaijan State Agricultural University located in Ganja. It is designed to provide sustainable income generation and capacity-building opportunities for community members involved in the agricultural sector. Among its goals is the construction of 132 greenhouses, a community bakery and 96 beekeeping hives, plus training to manage these facilities and businesses. The total budget of the project was US$787,629 out of which US$497,610 spent in 2012

The project activities include:

- Construction of 25 greenhouses;
- Distribution of 68 bee-families to farmers; and
- Rollout of 26 training sessions for 124 farmers on: seedling growing; vegetable cultivation; plant protection; green vegetable growing; and beekeeping production.

Building youth entrepreneurial skills

The aim of this project was to support young entrepreneurs in their efforts to enhance capacities, increase revenues, and contribute to youth social welfare via sustainable and market driven solutions such as apprenticeships. The project was implemented by "Umid" Support to Social Development Public Union through the financial support of BTC and its co-venturers. The project was launched in 2010 and was completed in 2012.

The project activities include:

- An apprenticeship programme involving 219 young people. Of these, 68 successfully graduated from the courses in 2012; and
- Finding full-time jobs for 117 out of 219 youths. 38 youths started up their businesses after receiving Jump Start Economic Project grants.

Centre of entrepreneurship for empowering youth

Implemented by the Azerbaijan Community Development Research, Training and Resource Centre through BTC and its co-venturers financial support, the Business and Management Unit within the Ganja Vocational Training Centre was created. The project fostered youth entrepreneurship in target communities of the Goranboy, Yevlakh, Shamkir, Agstafa, Samukh and Tovuz districts along the BTC and SCP pipelines. The project started in December 2010 and was completed in July 2012. It had a budget of US$98,845, of which US$7,434 was spent in 2012.

Under the project, about 600 students participated in 4 months of courses on accounting, cosmetology, welding, computer technology, computer repair, sewing and knitting to enhance practical skills for future employment or starting their own small businesses.

Supporting pre-school education

The aim of the project is to improve the quality of pre-school education, increase the access of children aged 5 to 6 years old to kindergartens and create self-employment and income-generating opportunities for women in the targeted communities. Implemented by the Centre for Innovation in Education, the project started in October 2012 and has a budget of US$226,224, of which US$50,000 was spent in 2012.

Under the project, the model of the pre-school education programme piloted initially in Deller Jeyir will be applied in Deller Jirdakhan and Duyerli communities of Shamkir district.

Teachers working for local public kindergartens and primary schools will be trained on child-centred pre-school methodology, community-based school readiness and children's physical, psychological and mental development peculiarities under the Step-by-Step programme.

6.2.2 Georgia

CDI 3 commenced in May 2010 with CARE International Co-operative for Assistance and Relief Everywhere, Inc. (herein referred to as CARE) in Caucasus as the lead partner. CDI 3 continued until the end of March 2012 with a total budget of just over US$1,865,081.

The goal of CDI 3 was to enhance and strengthen positive and harmonious relationships with communities along the pipeline routes through sustainable social and economic development. Two main areas, agriculture and civil society capacity building, have been identified as the most suitable areas for further intervention, taking into consideration country specifics and the results already achieved through the CDI 1 and CDI 2.

During the first months of the project, CARE investigated alternative options for a local NGO to assume responsibility for significant components of the project during the second year of project implementation. In particular, the agricultural advisory services, small business development and community development activities. CARE elected two local NGOs to implement field activities under CARE supervision. The Regional Development Association was selected in the West section communities, and the Centre for Training and Consultancy was selected to implement activities in the East section communities.

After 8-months of CDI 3, CARE commenced hand-over to selected NGOs, although CARE retained oversight and guidance throughout the 2-year lifespan of the programme.

The Final External Evaluation of CDI 3 considered a nationalisation strategy process as the correct step for further operation. It also considered local NGOs, the Centre for Training and Consultancy and the Regional Development Association, capable of managing implementation of the next phase of the project and recommended a request for a proposal from them via tender for CDI 4 implementation.

The main outputs of CDI 3 were as follows:

- 30 economic infrastructure rehabilitation projects undertaken;
- Through the rehabilitation of irrigation channels/systems it became possible to irrigate 3,198ha of plots in 9 communities;
- 68% of respondents reported increases in harvests by at least 20%, which was directly connected to rehabilitation activities;
- Increase of yields resulted in an increase of household incomes with an average increase of 22% in CDI East communities and 20% in CDI West;
- 68 representatives from 34 CBOs were trained in organisational development issues;
- 28 CBOs (74 participants) were trained in basic business management skills;
- 11 social enterprises were created. 9 of these have begun to operate successfully;
- A subsidised loan was disbursed to 257 target farmers;
- A seed producer's association was created;
- 30 group and 50 individual demonstration plots have been set-up;
- Communications on modern agricultural techniques were developed and applied;
- 635 farmers received marketing training. 78 entrepreneurs received grants to start-up small business activities; and
- Surveyed grantees stated that the share of business activity in their family income is 25%, which represents a 28% increase in household revenues on average.

To maintain the existing level of relationship and impact on the communities affected by the business, as well as to ensure business continuity and to manage the reputation in the country, implementation of CDI 4 was initiated in May 2012.

CDI 4 aims to deepen the positive relationship between BTC and communities along the BTC and SCP pipeline routes by promoting sustainable forms of social co-operation, improving agricultural production, and developing regional agro-businesses.

Progress within 2012 is as follows:

- 7 rural infrastructure rehabilitation projects completed. 5 more projects are ongoing;
- 88 agricultural demonstration plots created. Among them, 30 plots are run by 92 farmers from within farmers agricultural groups;
- 34 businesses, with 50 grant recipients, established; and
- 108 agricultural subsidised loans disbursed.

6.2.3 Turkey

2012 saw the completion of 9-year long rural development projects and the initiation of comprehensive regional projects within the 2012 to 2016 SDI Strategy. Eight community development projects implemented in the settlements along the pipeline were all completed in the first half of 2012. Building on the lessons learnt and progress in these projects, the CDI was designed and initiated at the end of 2012 to develop the

capacity of local organisations and individual entrepreneurs along the pipeline. Projects aiming at contributing regional developments on employment, enterprise, and capacity to manage cumulative industry risks continued under the Effective Governance and Enterprise Development programme. Progress updates for each project are presented below.

6.2.3.1 Community Development Initiative

As of 2012-Q2, 8 community development projects were completed by successful execution of the exit plans. The exit plan for each project was designed in line with the exit strategy that started in 2009.

The logic of the exit strategy was based on transition of missions from national IPs to local stakeholders to ensure the sustainability of any progress achieved in the past 9 years. To this end, each CDI team developed a detailed exit plan and these were all discussed with the BTC Corporate Social Responsibility (CSR) team as well as in workshops where all IPs commented on each other's plan. These plans were integrated into project documentation and were officially agreed with IPs. This unique exit process was implemented effectively, including the following steps and activities:

- The plan was agreed 3 years in advance of the end of project activities;
- Villagers and local organisations were informed of the process and were active in assuming roles from IPs;
- Small grants programmes and intensive capacity building played a key role in developing capacity of local organisations;
- The focus was on organisations with the potential to continue project initiatives; and
- In each project area, results were evaluated through field surveys. Approximately 300 village surveys were conducted by CDI teams with the help of academics. Results were assessed in statistical programmes.

By the end of each project, close-out meetings were held in each project province with the participation of local authorities, universities, NGOs and other stakeholders as well as communities. Results were shared with participants during these meetings. Short introduction films for each project were presented during the close-out meetings and distributed to all participants. Events were covered mostly by local media.

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

During the last two quarters of the Ardahan project, the target was to support 5 local organisations in taking over the project mission and key activities that contribute to the development and income of the target groups.

Highlights from 2012 include:

- The Ardahan Provincial Directorate for Food, Agriculture and Animal Husbandry took over combating foot and disease activities and enlarged its service area to villages along the pipeline. As a result, they disinfected 4,245 barns and trained 4,485 people;
- The Ardahan Beekeepers Association started to strengthen its institutional structure to provide better quality service to its members. It now has 537 members and provides continuous technical support and training to 446 of them;
- There are 2 existing village-based organisations working in 6 project villages on dairy production: Damal and Haskoy Agricultural Development Co-operatives with 289 combined members (Damal 184, Hasköy 105). Both were supported in development as well as following their work plans in 2012. As a result, the Damal Agricultural Development Co-operative has decreased its dependency on outside support and maintains its milk collecting machine with its own resources; and

- The closing ceremony for the project was held on 6 June 2012 with the participation of villagers, representatives of public institutions and local organisations.

Kars sustainable rural development project implemented by the Sustainable Rural and Urban Development Association

The Kars project was designed and implemented with the aim of improving the main income generating activities in the region and supporting the establishment and strengthening of local organisations. In the last phase of the exit plan, over 9 local organisations were supported to take over the mission and responsibility for ensuring sustainable progress. The outcome of this exit is the strong partnership established with Kars Cattle Breeders Association on animal husbandry activities in the region.

Highlights from 2012 include:

- Activities on animal husbandry were taken over by 2 local organisations. Kars Provincial Directorate for Food, Agriculture and Animal Husbandry has sustained activities on combating foot and mouth disease and animal acarids. Kars Cattle Breeders Association strengthened its institutional capacity, administration and recording system. In partnership with other local NGOs, the Kars Cattle Breeders Association applied for national funds to raise awareness and capacity building on endemic animal diseases in the region. Three projects were awarded and successfully completed;
- 6 local NGOs in Kars villages developed 10 project ideas and successfully implemented 6 of them as a result of training received on project lifecycle management, project writing and financial management under the CDI project;
- A hatchery, managed by women, was supported in 2012 and a partnership was developed with Kafkas University for their scientific support to the project. Two local NGOs (Susuz-Cilavuz Development Association and Caucasian Sustainable Rural Development Association) and some of the individual entrepreneurs will continue this project; and
- The closing ceremony for the project was held on 5 June 2012 with the participation of villagers, representatives of public institutions and local organisations.

Erzurum sustainable rural development project implemented by Atatürk University

The Erzurum project, with the aim of improving agricultural production and animal husbandry through supporting small enterprises and local organisations, was completed by the end of June 2012. In the last implementing period, the institutional capacity of 9 local organisations was strengthened to enable them to take responsibility of sustaining the activities.

Highlights from 2012 include:

- All of the supported local NGOs developed their annual work plans and executed them successfully;
- Four local organizations applied for Small Support Funds with their applications approved by the evaluation committee. All projects were successfully implemented as planned;
- The Erzurum Cattle Breeders Union was financially and technically supported to enhance the sustainability of their animal husbandry activities in the region. They provide services in 5 different district offices. Their plan is to open 7 new district offices in 2013. The Erzurum Cattle Breeders Union showed remarkable success with 31,000 artificial inseminations completed; 53,000 ear-tags applied to calves; an increased membership from 1,715 to 2,100; and becoming a recognised organisation in the sector.

- The 40 producers from the Vegetable Producers Association harvested 300t of vegetables in 6 villages. Following this accomplishment, they extended their market to neighbouring cities.

Exit was successfully managed by the IP. Strong local organisations that are both financially and institutionally capable will continue development activities initiated by the project.

Erzincan-Gümüşhane sustainable rural development project implemented by PAR Consultancy

The Erzincan-Gümüşhane, which aims to improve social and economic development through strengthening co-operatives, commenced in 2004 and was completed in 2012-Q1. During the last quarter of activities, project owned equipment/machinery was delivered to successful co-operatives. Assistance and support was also provided to the co-operatives that were in a liquidation process. As a result, there are 6 active local NGOs left after the project; 5 of which are running agricultural businesses, and the other, managed by women, is a manufacturer in textile sector.

An additional activity involving 3 courses on the operation of heavy machinery was organised in January 2012, due to demand, and saw the participation of 65 people in total. Many of the young people who received this vocational training found jobs in mining companies in Erzincan.

Sivas sustainable rural development project implemented by the Sustainable Rural and Urban Development Association

The Sivas project, initiated in 2004, was completed in 2012-Q1. The exit plan of the project aimed at promoting organic farming and strengthening the capacity of local organisations. The project supported 2 key local organisations during the final stage: Ulaş Development Association and Sippoyaki Womens Workshop. The Ulaş Development Association holds the leading role in organic farming activities in the region. They support producers who are new in organic cultivation and assist them in the certification process. As of 2012, 4,800m^2 of organic vegetables and 3,500m^2 of organic strawberries were produced with the products sold in local markets. In 58 villages, 650 producers started organic wheat production in a 12,000ha area. On the other hand, the Ulaş Development Association established a common machinery park for use by all producers in the region.

The women's workshop has been producing various ornaments and jewellery using a Japanese art technique, with the support of the project since 2009. In 2012, they applied for and received Government funding to grow their business. The project also supported them in their visibility with an informative brochure printed and distributed.

The closing ceremony for the project was held on 13 June 2012 with the participation of villagers, representatives of public institutions and local organisations.

Kayseri sustainable rural development project implemented by PAR Consultancy

The Kayseri project was completed in 2012-Q1 in line with its exit plan. In 2012, final evaluation surveys were conducted in 33 villages and the final project report was completed.

Highlights from 2012 include:

- The Karakuyu Co-operative continues its main services. They have been collecting milk from 5 villages and selling it to the Pınarbaşı Milk Producer's Union. The Co-operative also produces animal feed for its members and other producers in the area. All equipment provided by BTC funds are being used properly and efficiently; and

- Midget and semi-midget apple and cherry orchards have become widespread in the region through producers own resources. Producers easily sell their fruits at local markets.

Kahramanmaraş sustainable rural development project implemented by PAR Consultancy

The Kahramanmaraş project contributed to sustainable economic and social development in 29 settlements in Kahramanmaraş between 2004 and 2012. In its exit period, the project focused on supporting one active producers' union (Andırın Cherry Producers Union), which has a large producer network and a high potential for growth. Within the project, technical and financial support was provided to the Andırın Cherry Producers Union for the establishment of a cold storage facility. The facility was completed with co-financing from the regional development agency and membership fees that covered 90% of the total cost.

The cold storage facility started operating in July 2012 and has been used by 153 producers in the region for fresh fruit product processing. Producers processed 4,000t of cherries for both import and domestic markets during the summer. Throughout the 2012 production season, 100 young people had worked at the facility. The Andırın Cherry Producers Union, the owner of the facility, procured necessary additional equipment with the net income of US$50,000. Adana-Osmaniye sustainable rural development project implemented by PAR Consultancy.

At the final phase of the project, full support was provided to local stakeholders that hold the role in sustaining development efforts initiated by the project since 2004 in the Çukurova Region. Sound partnerships were established with the District Directorates of National Education and an active marine product co-operative.

Highlights from 2012 include:

- The Gölovasi Marine Products Co-operative established a comprehensive facility that provides deep-freezing, quick-freezing and cold storage services, which will enable them to compete in the national market;
- District Directorates were supported in restoring and improving two primary schools; and
- The closure meeting was conducted on 25 June 2012 with the participation of all key stakeholders including: the Deputy Governor of Adana; the District Governor of Yumurtalık, who was also representing Ceyhan District Governorship; mayors of Ceyhan and Yumurtalık municipalities; the head of Ceyhan Chamber of Agriculture; the head of Ceyhan Chamber of Commerce; the director of Ceyhan District Directorship of Agriculture; and more than 300 villagers including lead representative farmers, fishermen and villagers. The event appeared on national and local media.

6.2.3.2 Effective Governance and Enterprise Development

Ceyhan Fire and Natural Disaster Training Centre (CEYDEM) project implemented by Çukurova University in cooperation with Search and Rescue Association

The CEYDEM project aims at meeting capacity building needs to manage fire and natural disaster risks in terms of human resources and physical infrastructure in the heavily industrialised İskenderun Bay area, with a special focus on developing the capacity of fire departments of municipalities along the pipeline. Within this project, a fully equipped training centre for the fire departments has been constructed with simulators for hydrocarbon fires.

Highlights for 2012 include:

- Construction of the facility was completed;
- A Partnership Protocol was signed for the operation of the Centre with a world-wide NGO, Çukurova University, Search and Rescue Association, working on search and rescue in natural disasters; and
- As of December 2012, the Building for Fire Fighting Capacity along the Pipeline in Turkey programme was initiated with the aim of developing fire and natural disaster risk management capacity especially where hydrocarbon fires and earthquake risks are high along the BTC pipeline route. Local authority fire fighting departments will be trained and certified within the project to help them be aligned with international standards. A possible partnership development process is also ongoing with the General Directorate of Local Authorities, which will enable the full engagement of all governorships and municipalities as well as their fire departments along the pipeline route.

Industrial Symbiosis project in Iskenderun Bay – Phase II implemented by Technology Development Foundation of Turkey

The project aims at initiating Industrial Symbiosis (IS) implementation in Iskenderun Bay as a mechanism to increase the collaboration and solidarity between companies for achieving both environmental and economic improvement in the region. It is an important initiative in the region for mitigating cumulative business risks and impacts around the CMT. The project is being implemented by the Turkish Technology Development Foundation in co-operation with Industrial Synergies Limited, the National Industrial Programme in UK and the Environmental Engineering Department of Middle East Technical University.

The advisory Committee has been enlarged with the membership of the Ministry of Development. So far, the Committee has 24 members from 21 institutions including ministries, regional development agencies, chambers of commerce and industry, international institutions, universities and private sector representatives.

The IS network and database system was developed with companies and possible IS relations captured. As a result of the IS development workshops, with the participation of 70 representatives from 50 companies in total, 400 IS opportunities were identified. The IS team initiated detailed feasibility studies on 10 pilot potential synergies, which will create significant environmental and economic gains in the region. Some of these areas will be researched in detail including but not limited to the following:

- Bioremediation of contaminated soil;
- Road safety;
- Use of arc and ladle furnace slags in highway construction; and
- Common environmental, health and safety training for industries such as emergency response management in the Bay, carbon footprint and environmental permits, etc.

The IS team attended the international working conference on applied IS organised by Industrial Synergies Limited where they received: updates on IS applications around the world; EU policies and support (international financial resources); information about other national programmes; and contact with related people and institutions.

The project established a sound relationship with relevant government bodies especially the Ministry of Development. The Ministry held a 2-day workshop to integrate IS projects into strategic plans in 26 Regional Development Agencies in the country.

The project website (www.endustriyelsimbiyoz.org) is on-line and provides continuous and updated information on IS.

Ceyhan Business Development Centre (CEYGEM) project implemented by EDUSER Consultancy

The CEYGEM project is the third phase of the employment and enterprise development project, which was initiated in 2008. During the first 2 phases, a needs assessment for unemployed and for SMEs was identified, training for Micro, Small and Medium Enterprises (MSMEs) were delivered and career consultancy and vocational training was provided for unemployed people.

The CEYGEM project has gone beyond being only a vocational training project and created a unique public-private partnership. The project included organising on-the-job training such as first aid and working in heavy and dangerous conditions, which are the primary needs of businesses in the region. The first Employment and Career Development Day was organised in co-operation with the Provincial Directorate of Employment and the Çukurova University. Unemployed people and small enterprises had the opportunity to meet and converse with 40 companies from the region.

Highlights from 2012 include:

- As of December 2012, 60% of the construction work of the CEYGEM project was completed. While construction continues, vocational training also continues in parallel;
- CEYGEM received its private training institution status;
- Eight vocational training sessions for the unemployed were organised with the participation of 115 people. 37 of them got a job after completing the training;
- 40 training sessions were organised on working in heavy and dangerous conditions. 820 workers from 38 companies attended these sessions. For visibility of the project, a first aid handbook was printed and distributed during the sessions; and
- A management consultancy model for enterprises was developed and the first service provided to a company with 1,000 employees.

Credit Guarantee Fund project implemented by Credit Guarantee Fund Co.

This business development initiative was designed to support local MSMEs and entrepreneurs along the pipeline route by providing loan guarantees to enable them to access bank financing. BTC signed a co-funding agreement with the Credit Guarantee Fund of Turkey in 2008. The Agricultural Bank (Ziraat Bank) and a business Bank (İş Bankası), 2 of the largest country-wide banks, were then engaged in the project. In 2012, the Turkish Economy Bank became one of the partners to provide further loans.

As of December 2012:

- US$3.5 million of guarantees requested by 95 MSMEs were approved by the Credit Guarantee Fund, and over 60 SMEs from the BTC pipeline route received approximately US$3 million in bank credit;
- All beneficiary MSMEs are from the 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 pipeline route; and
- 75% of the beneficiaries are from agro-business, 9% are from manufacturing, and 16% are from the service sector.

Budget of ongoing Effective Governance and Enterprise Development projects is summarised in Table 6.7.

Table 6.7: Budget of Ongoing Effective Governance and Enterprise Development 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)	580,000	141,810	**721,810**
CEYDEM project	Çukurova University Search and Rescue Association BIL	461,600	592,500	**1,054,100**
CEYGEM project – Phase III	ISKUR (National Employment Agency of Turkey) National SME Development Agency (KOSGEB) CEYGEM Limited[17]	813,840[18]	Approximately 2,000,000 from KOSGEB (SME Development Organisation) and CEYGEM Limited.	**2,813,840**
Supporting the MSMEs to obtain bank credits on BTC pipeline route	Credit Guarantee Fund Turkiye Cumhuriyyeti Ziraat Bank İs Bank	2,000,000	2,000,000	**4,000,000** (x5 leverage from Banks = 20,000,000)
Building Fire Fighting Capacity along the BTC pipeline in Turkey (CEYDEM - Phase II)	Çukurova University, Search and Rescue Association	800,000	496,000	**1,296,000**
TOTAL		**4,655,440**	**5,230,310**	**9,888,750**

[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 Co-operatives and Ceyhan Municipality

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

6.2.4 Community Development Initiative Expenditure 2012

CDI expenditure for the total Operations phase and for the year 2012 is summarised in Tables 6.8 and 6.9.

Table 6.8: Operations Phase CDI 3 Budget and Expenditure (US$), 2006-2012 (BTC and SCP only)

	Azerbaijan	Georgia	Turkey	TOTAL
CDI (BTC and SCP)	9,626,097	5,941,220	16,395,000	31,962,317
Total spend to the end 2012	9,382,598	5,941,220	16,034,406	31,358,224

Table 6.9: Summary of BTC and SCP CDI Expenditure (US$) 2012

	Azerbaijan	Georgia	Turkey	TOTAL
Planned	606,000	900,000	1,800,000	3,306,000
Actual 2012	780,598	539,238	1,800,000	3,119,836

6.2.5 Community Development Initiative Budget 2013

The CDI budget for 2013 is presented in Table 6.10.

Table 6.10: BTC and SCP CDI Budget (US$) 2013

	Azerbaijan	Georgia	Turkey	TOTAL
Budget 2013	660,000[19]	833,862	1,800,000	3,293,862

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 generally not raised. The status of all internal non-compliances raised is provided in the following sections.

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.

A detailed summary of internal ESMS monitoring commitments completed during the year is provided in Section 4.2 and monitoring results in Appendix 3.

[19] This is the cash based amount.

7.2 EXTERNAL MONITORING

7.2.1 Host Government Monitoring

7.2.1.1 Azerbaijan

In 2011, the Ministry of Ecology and Natural Resources, Azerbaijan (MENR) was notified to participate in ground/surface water monitoring and visit the repaired river crossing. Upon completion of the visit, the MENR sent a formal letter requesting further involvement of MENR experts in regular erosion control work at river crossings and Karayazi groundwater well monitoring. It has been agreed to follow this request by inviting MENR participation in these works.

In 2012, the MENR was invited to participate in groundwater monitoring in the Karayazi region and to oversee the status of remediation activities at river crossings along the Azerbaijan export pipelines route. In April and November 2012, joint monitoring with the MENR was conducted at various river crossings along the Azerbaijan export pipelines route and groundwater monitoring in the Karayazi region. In April 2012, 4 river crossings, namely Shamkir, Tovuz, Hasansu and Gurudere rivers; and in November 2012, Ganjachai, Goshgarchai, Zayamchai and Asrikchay rivers were reviewed. The MENR has also visited Mil-Carabagh collector canal crossing to review the specificities of remedial activities on canal banks and in particular: topsoil storage location, numbers of each shrub species, and dimensions of the corridor to be cleared of vegetation. It was confirmed that arrangements were held in conformity with the plan at all river crossings and in a normal state.

One issue raised by BTC related to *Tamarix ramosissima* (Tamarix)[20] plants located within the fenceline of the pipe storage area and river crossings, which impeded lifting activities by snagging the taglines and thereby causing unsafe working conditions, a potential fire hazard. In additional species such as spiders and snakes often hide in/under the shrubs, especially during the summer period. The issue was discussed with the MENR and relevant instructions were given to comply with the safe removal of trees.

7.2.1.2 Georgia

BTC co-ordinated bi-weekly meetings with the Georgian Oil and Gas Corporation. Recurrent meetings were held with high-level officials of the various ministries such as the Ministry of Energy and Natural Resources, Environment, Economy and Sustainable Development, Infrastructure, Internal Affairs, GeoStandard, and different State departments and regulatory bodies. Permanent contacts and relationships with the Government has served for strictly following HGA requirements and obligations by all parties involved and timely addressing if any deviation.

7.2.1.3 Turkey

No HGA monitoring occurred in BTC Turkey within 2012.

The Provincial Administration of Sivas conducted a site review to PT 4 prior to provision of the Non-hygienic Installations Permit in 2012.

[20] The *Tamarix ramosissima* (Tamarix) species occurring in Azerbaijan are not considered threatened or endangered by the IUCN, and are not listed in the Azerbaijan Red Data Book. Additionally these plants have very deep roots (up to 5 m deep) that will make it almost impossible to uproot the plants and translocate to another location without causing severe damage to the plants - making it unlikely they will survive in a new location.

7.2.2 NGO Monitoring

7.2.2.1 Azerbaijan

The Azerbaijan Social Review Commission, an independent external advisory group, was set-up in 2007 to help BTC recognise and address challenges and long-term social performance activities that BTC undertakes on behalf of its joint venture partners. The Azerbaijan Social Review Commission issued its last fifth annual report in 2011, which concluded its first 5-year round of work. All Azerbaijan Social Review Commission reports and BTC's responses can be accessed at www.bp.com/caspian.

Discussions are ongoing to confirm how the Azerbaijan Social Review Commission will operate in the future.

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. BTC continues to engage with the national NGOs through its SDIs. Additional informal activities and engagement continued in order to keep NGOs and the public informed of BTC Georgia's operations in the form of face-to-face engagement efforts when requested and through various other forums. BTC Georgia also 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

CDI close-out surveys were conducted for each project implemented along the pipeline route. The content of surveys was developed by an academic who also works for a rural development NGO with the support of the SDI team and an SDI consultant. Extensive surveys were conducted in project villages to assess projects results. CDI teams conducted surveys in over 300 villages. Results are being evaluated and the final report will be issued by the academic in 2013, however it is still possible to say that surveys show that the machinery and related production capacity of co-operatives have increased. Income generation initiatives and good agricultural techniques introduced by the projects continue.

In addition to monitoring the effectiveness of CDI projects, BTC Turkey signed a contract with the University of Ankara to conduct annual reviews on BTC's social performance against social requirements stipulated in the ESAP. The first social performance review under this agreement will take place in 2013.

BTC has also initiated a bidding process for the Employee Rights Audit, whereby several institutions including NGOs, universities and international/national companies are invited to participate in the bidding process. The Employee Rights Audit will cover BIL and BTC contractors and their subcontractors. The Audit will be initiated in 2013. Similar audits were conducted by an international company between 2006 and 2008.

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 and rollout sessions. Throughout the year, the following training was conducted:

- Health, Safety and Environment (HSE) compliance expectations awareness pack;
- CTM user;

- Waste management;
- Air emissions management;
- Environmental aspects and impacts;
- Material release reporting/non-conformance reporting procedure roll-out;
- Flora/fauna protection; and
- ISO 14001 awareness.

In 2012, 269 people participated in training and awareness sessions.

7.3.2 Georgia

Training for BTC Operations in 2012 focused on site-specific environmental aspects and impacts management, pollution prevention, ecological awareness and non-conformance reporting.

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

7.3.3 Turkey

In Turkey, BIL continued to provide E&S training to Operations teams, Maintenance teams, subcontractors and the like.

Environmental Training

Environmental training topics had a wide scope and were tailored to departmental needs according to team member roles. Topics included:

- Environmental awareness/refreshment;
- ISO 14001 Environmental Management System (EMS) awareness;
- ECO card system;
- Waste management (segregation, collection and storage); and
- WWTP operation and maintenance.

Basic environmental awareness training was given to all new staff by BIL. Environmental refresher training was also provided to those individuals whose refreshers were due.

In 2012, the BIL Environment team received training through BTC resources on the oil spill contingency and response model and air emissions.

Social Training

BIL Public and Community Relations Experts (PCREs) provided training to all new employees and contractors of BIL as part of the orientation programme. During 2012, 18 BIL employees, 214 subcontractors and 69 interns were trained on the following topics:

- Community relations (organisation and responsibilities);
- Complaints and compensation;
- Employment;
- Procurement;
- Safety (traffic and pipeline safety);
- Land use/restrictions;
- Code of conduct;
- Audits (internal and external);

- Responding to media;
- CIPs;
- Refresher of Public and Community Relations (PCR) training; and
- Communication skills.

In addition to training provided to employees, basic PCR induction training was provided to high school students at the CMT.

The total number of personnel trained as at the end 2012 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)	541	906
Complaints and compensation	541	906
Employment	541	906
Procurement	541	906
Safety (traffic and pipeline safety)	541	906
Land use/restrictions	541	906
Code of conduct	1	663
Audits (internal and external)	1	663
Responding to media	541	663
CIPs	541	663
Refresher of PCR training	63	52
Communication skills	10	-

In 2012, the BIL PCR team (13 staff) received training on the following topics:

- Land use/restrictions (awareness campaign training);
- Effective communication, voluntary principles on human rights;
- Personal effectiveness and team building;
- Training of trainers for a school children awareness campaign by a teacher;
- Defensive, anti-skid and off-road techniques;
- Coping with life in winter conditions;
- Avalanche awareness; and
- Survivor equipment Global Positioning System and aerogram.

The main Category A contractor of BTC also provided E&S training to workers. HSE awareness training sessions were attended by 570[21] workers with 595 workers attending HSE plus E&S awareness training sessions.

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

- First aid;
- Driving;
- Legal college;
- BP people portal;

[21] The number of total workers that attended the training sessions. The same workers might have attended the same training sessions more than once at different worksites.

- Voluntary principles on security and human rights;
- Effective team working;
- Risk workshop;
- Incident investigation and human factor analysis;
- Root cause analysis;
- Safety culture leadership; and
- Continuous improvement coaching.

8 PROJECT COMMUNICATION

8.1 CONSULTATION APPROACH

Consultation and communication with various BTC project stakeholders, from communities to Government organisations, was ongoing during 2012 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 BTC Pipeline 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 2012 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 both Operations teams and project-affected communities. Representatives of local authorities and municipalities were part of the community engagement process.

In 2012, the Community Liaison Officers (CLOs) conducted a Safety and Environmental Awareness Presentation Programme in 21 schools including 1,182 schoolchildren and teachers in affected communities. The purpose of these sessions was to increase awareness about pipeline safety and operations.

In light of major project activities, community consultation meetings were conducted with the purpose of receiving feedback from affected landowners and land users along the BTC and SCP pipelines.

The CLOs also met with local state agencies (water, electricity, road, gas, etc.) functioning along the route, at the beginning of the year, to exchange information on planned pipeline operations activities and visits.

8.2.1.1 Complaints

In 2012, no complaints were received from the BTC and SCP pipelines affected communities. One complaint that remained outstanding from 2011 was closed in 2012.

Table 8.1 gives a breakdown of complaints by category.

Table 8.1: Summary of Complaints Received by BTC and SCP, 2012 (Azerbaijan)

Complaint Category	Complaints Received	Complaints Closed (at end of 2012)
Land use	0	0
Compensation	0	1
Access roads	0	0
Recruitment	0	0
TOTAL	**0**	**1**

8.2.2 NGOs and Technical Organisations

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

8.2.3 Government

Communications with Government during 2012 are discussed in Section 7.2.1.1.

8.3 GEORGIA

8.3.1 Project-Affected Communities

The BTC Georgia Social team continues to work with villages and communities near the pipeline on a regular basis. The Social team maintains regular contact with village communities and engages with village trustees and informal leaders, local residents, complainants, landowners, regional Governors and Gamgebelis. CLOs raise awareness of BTC Georgia and its activities, discuss safety issues, and address concerns relating to land use with respective communities. To reinforce messages about pipeline safety, a community calendar for 2013 was developed. The community calendar also contains information about oil and gas. These are short messages covering how oil and gas is generated and its uses.

A summary of the main activities conducted in 2012 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 PSG 2 accommodation addition and PSG 2 access road projects were closely monitored in the field throughout the year to ensure social commitments were being met and adhered to; and
- In order to ensure compliance of BTC Georgia and its contractors with the Employment and Training Management Plan of ESAP, the Social team conducted an audit of employment practices of the security contractor.

8.3.1.1 Complaints

BTC Georgia continued effective management of the Third-Party Complaints Procedure. Communities are aware of how they can raise grievances and CLOs have helped them to lodge complaints when necessary. During 2012, 16 complaints were received, 14 of which have been closed and 2 complaints still under review. Table 8.2 gives a breakdown of complaints by category.

Table 8.2: Complaints Log Statistics, 2012

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	7	6	86	1
Orphan land	0	0	100	0
Other land issues	7	6	86	1
Access restricted/abolished	0	0	100	0
Inventory/compensation disagreed	0	0	100	0
Parcel ownership or size	0	0	100	0
CBO compensation	0	0	100	0
Community infrastructure	0	0	100	0
Household infrastructure	1	1	100	0
Bee-related	0	0	100	0
Irrigation	0	0	100	0
Cracked house	0	0	100	0
Employment	0	0	100	0
Other social issues	1	1	100	0
Miscellaneous	0	0	100	0
TOTAL	**16**	**14**	**88**	**2**

8.3.2 National NGOs and Technical Organisations

In 2012, BTC continued to engage with national NGOs through a range of different initiatives. These initiatives are:

- SDIs;
- CDIs; and
- Different cultural heritage initiatives.

BTC also actively participates in different conferences and forums organised by the United Nations Global Compact Georgia Network as well as the AmCham CSR Committee. 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 the Georgian Oil and Gas Corporation, the State Main Export Pipeline/WREP representative in BTC activities in the country, and various state stakeholders. Positive outcomes were achieved through an effective relationship with State bodies on a number of important issues including the BTC Crude Oil Pump Station access road project, major gas state pipeline projects in the BTC ROW, various regulatory, permitting and legal issues, SCP Expansion Project and WREP sectional replacement project-related issues.

8.3.4 Media

During 2012, various media activities took place in Georgia. These included:

- BTC and project partners announced a National Olympic Committee and National Paralympic Committee partnership and athlete ambassadors at a joint press conference held on 2 March 2012;
- The Olympic/Paralympic partnership launch event for external stakeholders, which included media, was held on 10 April 2012. BTC Georgia's General Manager hosted Georgian athlete ambassadors together with the Presidents of Olympic and Paralympic committees;
- BP Georgia's General Manager delivered a speech at the eleventh Georgian International Oil, Gas, Energy and Infrastructure conference and showcase held on 28 to 29 March 2012 in Tbilisi. The speech highlighted Shah Deniz Full Field Development (SD FFD) plans and was received with great interest;
- BP Georgia's General Manager delivered a speech at the closing ceremony of the 3-year Energy Efficiency Program for Georgian Communities – Energy Bus project. The closing ceremony was dedicated to the Sustainable Energy Day in Georgia initiated last year by the project IP, the Energy Efficiency Centre. BTC and project partners awarded winners of the energy efficiency competition for schoolchildren;
- BP Georgia's General Manager gave an interview to AmCham magazine "Investor.ge" regarding SD FFD benefits to Georgia;
- SCP Expansion Project ESIA disclosure was announced through local newspapers and websites;
- BP Georgia's General Manager gave an interview to Forbes Georgia magazine regarding SD FFD benefits to Georgia;
- A media trip to visit CDI projects, including wider sustainable development projects, and meetings with pipeline communities resulted in positive media coverage containing information about the positive and sustainable changes the programme brought to the communities during last 9 years;
- BP Georgia's Social Responsibility Manager delivered a speech at a special event dedicated to Georgian Paralympic athletes performing in the London 2012 Paralympic Games. The event was attended by the UK ambassador to Georgia, National Olympic Committee President, honourable guests and media representatives;
- BP Georgia's General Manager delivered a speech at the America-Georgia Business Council's fifteenth annual conference held on 12 December 2012 in Washington D.C. The speech highlighted BTC's activities in Georgia, as well as SD FFD plans;
- BP Georgia's General Manager and Communication and External Affairs Manager gave an interview to the American Times for the country report commissioned by the Government of Georgia. They highlighted BTC's activities in Georgia;
- A certificate award ceremony was held on 20 December 2012 within the framework of the BTC-funded programme "English language training for media", implemented in co-operation with the British Council; and
- A press announcement was issued regarding the third graduation ceremony under the project management college project.

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. These included the: 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 Co-operation Agency, USAID, Government of Norway).

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

8.4 TURKEY

8.4.1 Consultation

8.4.1.1 BIL

The BIL PCR team was enhanced in 2011. In 2012, an additional officer for PT 1 and an additional expert was recruited for the Ankara office. In total, 13 social experts are working for the BIL PCR team and all locations are 100% covered.

The BIL PCR team conducted various consultations and training sessions with local stakeholders. In total, 763 stakeholder engagement meetings were held in 2012 as shown in Table 8.3. 740 of them were regular meetings and visits to communities.

Table 8.3: BIL Stakeholder Meetings 2012

No. of Stakeholder Meetings	Months												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Community awareness meetings	-	2	5	1	-	-	-	1	3	1	1	9	**23**
Regular meetings (i.e. after introductory meeting)	136	69	71	90	28	24	45	69	75	62	41	30	**740**
Total	**136**	**71**	**76**	**91**	**28**	**24**	**45**	**70**	**78**	**63**	**42**	**39**	**763**

Four workshops/training sessions were organised in 2012 by BTC to further increase the capacity of BIL PCREs:

- The first was on training of trainers for PCREs to deliver the land use restriction awareness campaign more effectively;
- The second workshop was on effective communication skills;
- The third was held in July 2012, and aimed at training both BIL and BTC Social and Security teams on the voluntary principles on human rights and security. This two day workshop both refreshed human rights dimensions in day-to-day work and the requirements of voluntary principles, as well as assessment of where we are against these principles; and
- The last workshop and training session was held in December 2012 to review BIL Social teams' performance against objectives and plans set for 2012. The second day of the workshop was dedicated to self-development and team building delivered by a corporate training academy.

The main highlights of the activities conducted in 2012 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 for resolution of complaints raised by landowners/users related to reinstatement issues occurring after completion of construction and reinstatement activities along the Turkish section of the BTC pipeline. The first phase of the field study was implemented in 2009. The second phase commenced in 2010 and completed in June 2011.

The remaining complaints, which were in the contractor's scope, were mostly completed by end of 2012.

New complaints were registered between 2010 and 2012 through PCREs and BTC Social teams, which were raised by the landowners/users. The complaint verification process has been ongoing for these new complaints by BIL PCREs as well as by BTC's Site teams during scoping of remedial works.

BTC is working on a plan to resolve these open complaints together with BIL in 2013. As at the end of 2012, 505 reinstatement complaints were closed, leaving 60 remaining open.

BIL PCREs 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 Resettlement Action Plan requirements. BTC will continue its additional assurance and monitoring on effective management of complaints through its CSR teams and through Health, Safety, Security and Environment site representatives working along the pipeline for pipeline repair and enhancement projects and at the PTs for BTC's operations.

Awareness campaign on land use restrictions: The awareness campaign on safe life along the pipeline continued in 2012. The main objective of this campaign is to train landowners/users, schoolchildren 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 response action plans and expectations from local stakeholders and community safety risks and mitigation measures. Finally, information about the complaints management process is also provided again to all stakeholders along the route.

The awareness campaign is repeated every year to refresh local stakeholders living in those villages, but also to train new landowners/users and local authorities appointed to the region.

In 2012, training sessions were delivered in 267 villages. Training was also provided to 65 local state organisations, 66 Gendarmerie (Sate security department) stations and 196 schools (out of 228 along the pipeline route). Also in 2012, special training materials were designed targeting schoolchildren, such as a cartoon movie and a workbook that was prepared to deliver efficient training to schoolchildren. Prior to the start of training, PCREs received trainers training from an expert teacher prior to site activities. The same expert also provided on-the-job training to PCREs at 6 different locations and prepared an assessment report for the PCREs to improve their presentation skills. A summary of community awareness meetings are provided in Table 8.4.

Table 8.4: Community Awareness Meetings (as of 31 December 2012)

	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	42	799	12	157	7	91
2	166 to 376	68	1,030	9	120	27	323
3	376 to 575	30	365	14	282	7	94
4	575 to 774	53	561	26	353	16	184
5	774 to 957	39	665	6	56	2	24
6	957 to 1076	35	724	7	1,19	7	82
	TOTAL	**267**	**4,186**	**66**	**1,087**	**65**	**798**

A breakdown of community awareness meetings by village risk categories is provided in Table 8.5.

Table 8.5: Community Awareness Meetings per Village Risk Level (as of 31 December 2012)

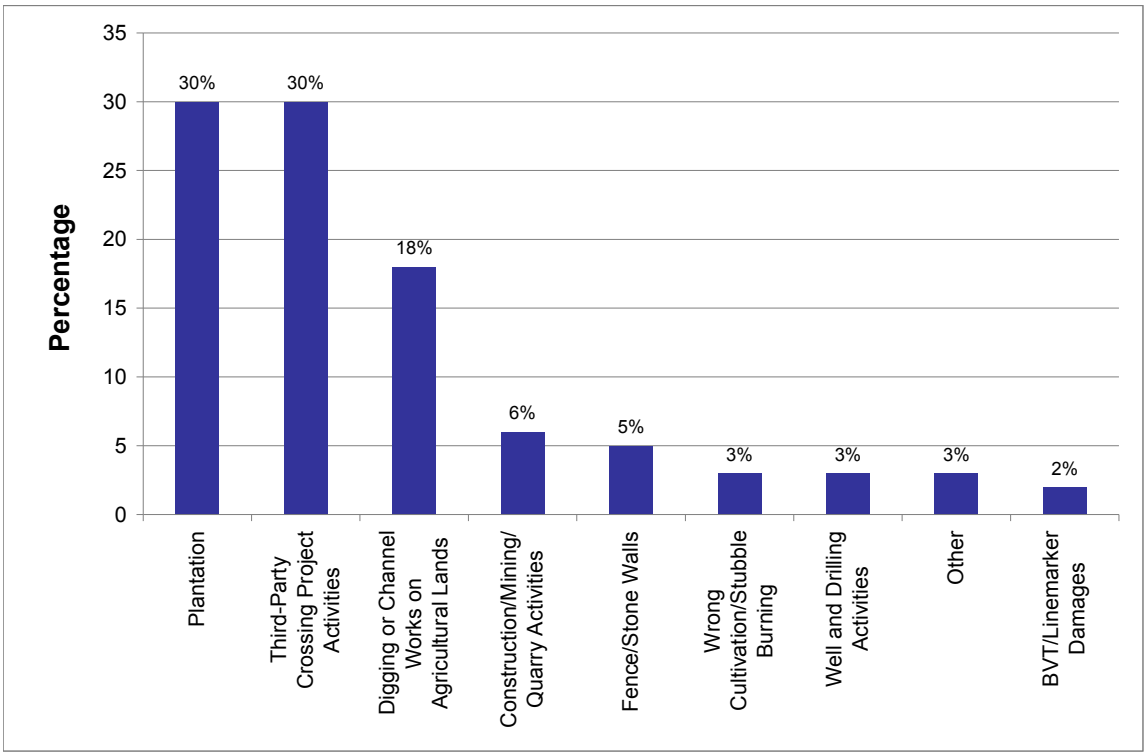
Village Risk Categories	Number of Villages	Number of Trained Villages	Number of Trained Population	Percentage (%)
First Risk Level: PT or BVT affected villages	71	71	1,119	100.00
Second Risk Level: Proximity of less than 1km to pipeline or AGI	121	104	1,622	85.95
Third Risk Level: Proximity of more than 1km, less than 2km to pipeline or AGI	73	52	884	71.23
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 Energy Transmission Line affected	15	9	147	60.00
TOTAL	**331**	**267**	**4,210**	**80.66**

Management of third-party crossing projects on the ROW: From 2006 to 2012, 210 third-party crossing activities were registered. Only 10 of these remain open with Technical teams working on them at the end of 2012.

Management of third-party violations on the ROW: In 2012, 164 violations of land use restrictions were registered. Of these, 104 were closed or pending (meaning necessary actions were taken but not formally closed) leaving 60 open at the end of the year. A breakdown of land use violations by category is presented in Figure 8.1.

Awareness training campaigns have had a positive effect on the third-party crossing formal application process and has resulted in more care being taken on land usage along the pipeline route.

Figure 8.1: Land Use Violation Categorisation



The total number of land use violations from 2009 to 2012 is presented in Table 8.6.

Table 8.6: Total Number of Land Use Violations (2009 to 2012)

Year	Total Number of Land Use Violations	Yearly increase
2009 (June)	276	-
2010 (December)	651	375
2011 (December)	755	104
2012 (December)	919	164

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

The BTC Turkey CSR team visited BIL PCREs onsite at 6 locations to monitor activities and social requirements of the Operations phase and conducted interviews with BIL PCREs, affected villagers and other local stakeholders during 2012. The review addressed all social requirements agreed to in the ESAP and Resettlement Action Plan. The geographical scope of the review included all major AGIs and a selection of affected villages along the pipeline route.

In addition to the monthly social reports from BIL PCREs, the BTC CSR team organised regular meetings with BIL PCREs to discuss actions and issues on a systematic basis. The BTC Social team organises half-yearly planning and performance evaluation meetings with BIL PCREs in addition to monthly meetings. These meetings are also used to provide training to BIL PCREs on various issues.

The web-based integrated public and community management system developed by BIL in 2011 was kicked-off l and functional in 2012. During the 2012 progress review, it was discussed that the missing social data (such as consultation meetings, training, land data, complaint registry and close-out forms reported by BTC's direct contractors) would all be registered in BIL's system. Requests for information from various stakeholders should also be filtered through this system as a single point of all complaints. The possibility of BTC Social teams obtaining viewing access to the system for more effective monitoring purposes was also discussed and will be considered.

In 2012, a social competency audit was conducted for one of the direct contractors of BTC who is responsible for pipeline repair works. During this competency assessment, it was identified that environmental site representatives are tagged to manage community relations with the support of BIL PCREs; however, there is a need to raise the understanding of contractor site personnel on social requirements.

A social guideline (a simple, short Turkish version of all social requirements) was developed for delivery after social training with contractor site personnel. The training will start in 2013 and cover all contractors of BTC and BIL. BIL PCREs will also be engaged in these training sessions.

Management of local employment expectations: Management of employment expectations in the pipeline regions will continue to be a big challenge for Social teams in 2013.

There were several job applications made from villages, particularly around the AGIs and CMT, which were all registered in the BIL database. These applications were also shared with BTC's direct contractors working at site to give priority to locals during recruitment processes.

Local employment Key Performance Indicators (KPIs) are being recorded and reported to BTC by both BIL PCREs (which includes employment status of all of BIL's subcontractor's) and BTC's direct contractors (such as the pipeline repair contractor).

Vllages around PT 1 complained to BTC and BIL that personnel were employed from un-affected villages at PT 1 and priority should be given to the nearby villages. The complaints were registered in the BIL complaint system to be handled. BTC management sent a letter to BIL management to take this issue and local employment commitments seriously. In response, BIL started to take action to double-check the status of the local employment situation against KPIs and identify areas of concern to be shared with all their subcontractors. BIL had a meeting with their subcontractors' management to discuss these issues as well as other requirements in Ceyhan before the end of 2012.

The BTC Social team and Procurement and Supply Chain Management (PSCM) teams are working on revision of local employment and procurement targets. Furthermore, the Social team is working on an employee audit for BIL and its contractors as well as BTC direct contractors.

Goodwill gestures by BIL PCREs: In addition to a comprehensive CDI programme managed by BTC along the pipeline route, the BIL PCR team have responded to many community needs such as: clearance of village roads by Snow Fighting teams; provision of sewage truck services to some villages; provision of organic waste to villages for fertilizer production; and provision of materials such as scrap materials,, electricity cables and stationery. BIL also supported renewal and modification activities at 2 schools in Ceyhan as goodwill gestures with the support of the Operations teams.

Resolution of provisional recommendations from the RAP close-out audit by the Social and Resettlement Action Plan (SRAP) Panel: As described in the 2011 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. Recommendations were actioned 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, despite various inquiries by BTC.

8.4.1.2 Community and Regional Stakeholders Meetings

Regular follow-up meetings were held with local communities and regional stakeholders including the local Gendarmerie, provincial governors, district sub-governors, mayors, Government utility providers, and other relevant Government departments, to increase the awareness of landowners on land use restrictions and to resolve reinstatement complaints along the pipeline route.

In addition to regular meetings in 2012, within the scope of the awareness campaign, meetings were held in villages with related local authorities, public institutions and Gendarmeries.

In total, 1,450 regular and community awareness meetings were held with communities and other local stakeholders during 2012. Among those: 267 awareness meetings were held with communities with the participation of 4,210 villagers; 66 awareness meetings with Gendarmeries with the participation of 1,098 Gendarmeries; and 65 public institutions with the participation of 798 staff. A breakdown of the meetings held by BIL in 2012 is presented in Table 8.7. These figures do not include consultation meetings with affected villagers conducted by BTC Turkey and by its IPs for CIP and Regional Development Initiative (RDI) related issues.

Training videos and pamphlets including information on land use restrictions, emergency response, security, grievance log venue, 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 8.7: BIL Community Meetings, 2012

BIL Community Meetings	Number of Village Meetings	Regional Stakeholder Meetings
Community awareness and consultation meeting	25	23
Regular meetings* (follow-up to introductory meetings)	466	740
Children awareness – School campaign	196	-
TOTAL	**687**	**763**

* 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 team continued to host official visitors, mainly at the CMT and other AGIs, including country representatives, Government officials, media and NGO representatives during 2012. Briefings were provided about various aspects of the operation of the BTC pipeline. A breakdown of official visitors is presented in Table 8.8.

Table 8.8: 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
2012	176	25	201
Total	**1,360**	**413**	**1,773**

8.4.2 Complaints Management

During 2012, 98 new complaints were received, as shown in Table 8.9.

Table 8.9: Complaints received

Complaints	Number
Open complaints from 2011	21
Received complaints in 2012	98
Total number	**119**
Closed complaints in 2012	19
Open complaints in 2012	99
Total registered complaint between 2005 and 2012*	**950**

*This category shows all registered complaints including not legitimate and repeated complaints.

At the end of 2012, 99 of 119 complaints remained open, 21 of which are open complaints from the previous years, as shown in Table 8.10.

Table 8.10: Open Complaints as at 31 December 2012 (Cumulative)

Subject	2012	Action Plan
Reinstatement*	**60**	While the majority of open border complaints have been closed-out by BIL PCREs, 6 of them remain open. Of these, 2 also relate to reinstatement. Delay of closure of the remaining complaints occurred due to an inability to reach the owners of the land during site visits. 32 reinstatement-related complaints recorded in November 2011 were added to the complaints tracker in 2012. All reinstatement complaints were related to the Construction phase.
Damage	**19**	Damage to crop cases are being assessed.
Damage to infrastructure and community assets	**8**	7 related to damage to roads that are claimed to have occurred after repair activities by BTC subcontractors. 2 related to the Construction phase. 1 involved a complaint about a well being filled with stones while the other related to 12 concrete pipes being broken.

Subject	2012	Action Plan
Dust and noise	**1**	BIL has contacted the Provincial Private Administration of Kahramanmaraş to ask them to improve the road.
Payment	**3**	1 related to the subcontractor during the Construction phase. 2 related to the ex-subcontractor of BIL. Suppliers complained about not receiving last payments from subcontractors.
Recruitment	**4**	All complaints were gathered from the villages around PT-1. They complained that security personnel of PT-1 had been recruited from other districts and provinces, not from their villages or districts.
Access to land and resources	**2**	Both complaints related to geo-hazard works. Villagers complained that after rip-rap activities, access to the other side of the river had become risky for their animals and tractors.
Other	**2**	2 complaints related to stones and other material gathered by the villagers that were used by the reinstatement contractor for rip-rap in 2010. The villagers are now asking for the stones back. 1 complaint related to a line marker being removed from its place and damaging land in the process.
TOTAL	**99***	

*Some of these complaints are being assessed and some are already actioned but closure documents have not arrived from the site. A thorough assessment for resolution is planned in 2013.

In 2012, most of the newly registered complaints related to operational issues such as damage to property, crops and land during reinstatement, enhancement and hot tap repair works. A breakdown of total number of complaints by category is shown in Table 8.11.

Table 8.11: Total Number and Category of Operation Complaints, 2009 - 2012

Subject	2009	2010	2011	2012
Employment	0	3	3	12
Reinstatement*	58	10	14	33**
Access to land and other resources	0	0	-	2
Damage to property, crops and land	40	8	8	12
Damage to infrastructure and community assets***	7	2	12	3
Dust and noise	1	0	1	0
Payment/payment to service provider	14	25	1	34
Local procurement	0	0	-	0
Outstanding expropriation payments	2	2	2	0
Misconduct of BIL employees	0	0	-	0
CIP – perceived inequity in distribution of support	1	1	-	0
Decrease or loss of livelihood	1	1	-	0
Other (third-party crossing – use of local resources)	1	1	2	2
TOTAL	**125**	**53**	**43**	**98**

* Includes reinstatement, biorestoration, border, grading, rip-rap, soil, transportation and stone complaints.

** 32 new complaints received from north-east section of the pipeline and one from the southern section of the pipeline.

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

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 the 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.

Because of ongoing engagement in SDI projects, BTC became an active organisation in the development arena of Turkey. BTC is now sitting on the Advisory Board of Development Studies at the University of Ankara. In 2012, BTC was also 1 of 2 private companies that were invited to consultation meetings of the Ministry of Development for planning of the tenth development plan for 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.

A summary of meetings and other formal communications held by BTC is presented in Table 8.12. The number of meetings held does not include meetings held by the IPs.

Table 8.12: BTC Stakeholder Meetings, 2012

Type of Meeting	Number of Consultations*
Donor	-
Government	16
NGOs	11
Private companies	6
Universities	7
Media	-
TOTAL	**40**

* 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 2012. In general, the aim of these meetings was to monitor both the impact of SDI projects implemented by national IPs in Turkey and PCR activities undertaken by BIL. The first phase of the community development component of SDIs was completed by mid-2012. Results of the projects were shared with close-out meetings held in each project region with wide participation of local stakeholders. A total of 9 meetings were held in 9 provinces and attended by local authorities, provincial agriculture directorates, universities and other stakeholders, project beneficiaries (communities and community organisations). The events were covered in local media.

The BTC CSR team and its external development consultants also spent approximately 50 days onsite visiting villages and local authorities to ensure SDI projects and relations with communities are managed in line with agreed plans and commitments.

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 2013:

- SDI and EIP projects were covered in 32 local media, 15 national media, 1 television programme, 5 national inserts and over 100 web news media outlets;
- 1 television programme on EIP's Terrestrial Rehabilitation Project on CNN Türk – Yeşil Doğa Programme by Güven İslamoğlu;
- Several public events (protocol signature ceremonies) were organised in the regions by SDI partners to promote achievements in BTC financed projects; and
- A ground-breaking ceremony for the CEYDEM project, together with Çukurova University and Çukurova University, Search and Rescue Association in Ceyhan, Adana, was covered in both national and local media.

9 LAND ACQUISITION AND COMPENSATION

The land acquisition, compensation, hand-back and livelihood restoration activities and processes are described in the RAP. This section summarises relevant activities conducted in 2012.

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 E&S Annual Reports, bank accounts have been established for all affected people, in all districts, except for 5 unavailable landowners (compensation for these landowners 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, a result of heritage family disputes. BTC monitors such cases and if the landowner/land user becomes available, the agreement will be signed and compensation paid. The 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:

- Informal land users from 14 villagers (Hajialili village, Shamkir district) have elected not to sign the agreement (4 cases); and
- Landowners have elected not to sign the land exit agreement (3 cases).

9.1.2 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 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 2012, there have been no changes to the status reported in the E&S Annual Report (Operations Phase) 2011:

- 86 landowners/users 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

The BTC Land team took responsibilities from the contractor Telco+ for completion of BTC and SCP BV electrification project's land acquisition. Two land co-ordinators were hired for the April to December 2012 period. Land purchase/sale and land lease agreements were signed with 18 private landowners and compensation paid. Most of the state land parcels were obtained from district executive authority (ExCom) heads (confirmed by their decrees).

In total, 11 access permits for maintenance works were obtained from landowners including for the WREP Kura river geo-technical survey.

9.2 GEORGIA

9.2.1 Acquisition and Compensation

As of December 2012, 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 in 2012.

Table 9.1: Number of Land Parcels with Compensation Paid

	Private Land Parcels		High Mountain Village Land Parcels		State Leased Land Parcels	
District	**Required**	**Actual**	**Required**	**Actual**	**Required**	**Actual**
Total	3,522	3,485	206	206	239	239
% Complete	-	99	-	100	-	100

9.2.2 Land Registration and Ownership

One of the court cases regarding land registration and titling (Naokhrebi village) has been finalised at the Tbilisi Appellate Court. No additional payments are necessary.

The villagers of Naokhrebi village filed a court claim in 2006 against the local municipality to privatise land which, in 2003, was allocated to BTC as State land and on which the State replacement fee was paid. The court ruled in favour of the villagers and as a result, ownership certificates were issued. BTC has filed a court case against Akhaltsikhe Municipality/villagers demanding ownership certificates be declared null and void. The case was closed in the Supreme Court in favour to BTC.

In addition, there are a few absent landowners, and for all parcels, BTC has acquired the 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 2012 was US$6,500.

9.2.4 Land Hand-back

As of December 2012, the Akhaltsikhe camp issue was closed and agreement with owners signed.

Three land exit agreements are still being signed with landowners/users. As of December 2012, 88.6% of all land use and servitude agreements were completed.

9.3 TURKEY

9.3.1 Acquisition and Compensation

As of December 2012, BOTAŞ/DSA acquired 99.09% of the parcels for the BTC pipeline and associated facilities in Turkey. 98.12% of these land plots were already transferred to BTC. The process is ongoing for the remaining parcels.

The land acquisition and registration process has been completed for an additional 17 parcels in 2012 and this data was integrated into the GIS system of BOTAŞ/DSA.

Court cases are ongoing for 25 private parcels due to the following reasons:

- Disputed cases occurred after cadastral surveys were conducted by the Cadastral office as part of their own works in the pipeline regions. This had a negative impact on the resolution of the ongoing court cases, which delayed the BOTAŞ acquisition process from the landowners since there were disputes on the ownership of those lands as a result of the cadastral surveys;
- Due to multiple ownership and absentee owners, and due to old cadastral records, parties (heirs of deceased owners) cannot be defined by the court in a short period of time (Article 10 of the Expropriation Law 2010 requires all shares to be present at the title deed office to complete the acquisition with consent agreements or at court to complete the process through court);
- 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 land 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 responsible for reinstatement, pipeline repair works and enhancement projects for the BTC pipeline on behalf of BTC. The BTC CSR team and BIL PCREs 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 asset compensation is made in line with RAP requirements prior to land entry. Where there is a need for permanent acquisition of these areas, the process is managed by BOTAŞ/DSA in line with the HGA requirements.

Table 9.2 provides an update of the status of the acquisition and compensation process as at the end of 2012.

Table 9.2: Land Acquisition and Compensation Progress (December 2012)

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	7,617	99.67
Transfer or rights to land to BTC Turkey**	17,949	17,786	99.09

*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.

** Includes additional permanent land take required for pipeline repair works, enhancement projects during operations phase.

9.3.2 Land Management during Operations

BOTAŞ/DSA manages all permanent land issues in line with the HGA requirements, An Operating Agreement, in line with a Protocol signed between BOTAŞ/DSA and BIL, was developed and outlines roles and responsibilities of these two parties during operations. BTC ensures all additional land take is managed in line with RAP principles through systematic monitoring activities. 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. BTC Site teams and BIL PCREs are involved in every land lease agreement (they also sign the Protocol between the contractor and the landowner/user as a witness).

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 PTs:

Rental agreements were extended with the landowners of the parcels where campsites are located at all PTs by BIL until the end of 2013. 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 negotiation, the BIL Operating Agreement was amended on 25 October 2011 (Amendment 3) and as a result, among other things, the Main Export Pipeline participant will assume the role of constructing permanent accomodation at locations in Turkey. Once several condition precedents are satisfied, Amendment 3 will be effective and the Main Export Pipeline participant will start to work on the permanent accomodation work scope.

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 PCREs 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 ownership issue, the court process is initiated to identify the shareholders and the price for the land plots.

Additional Land Acquisition needs in 2012:

108 parcels were rented or acquired in 2012 as shown in Table 9.3.

Table 9.3: Additional Land Acquisition needs in 2012

Land Expropriation in 2012		Land Expropriation during operation - Total		Land Rental in 2012 – Geo-hazard activities	
Parcels	**Total land**	**Parcels**	**Total land***	**Parcels**	**Total land****
9	216m^2	21	9,164m^2	78	223,726m^2

* According to DSA data, KP 383 not included yet.

** According to the Construction contractor data, some parts of KP 383 land are not included.

Management of Third-Party Crossing Projects in 2012:

BOTAŞ/DSA, BIL and BTC Turkey work closely to manage the third-party crossing projects along the BTC pipeline route in Turkey. BIL PCREs are co-ordinating dialogue and communications between operations and other state authorities in line with the Third-Party Crossing Projects Procedure.

Third-party crossing projects submitted by other state institutions, such as State Hydraulic Works and Turkish Highways, Turkish Electricity Distribution Company, local municipalities and the like, as well as 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 for their final consent. In 2012, 23 third-party crossing project requests were received as shown in Table 9.4. In total, 210 crossings have been registered since the start of BTC operations in 2006. Ten of them were still being worked on at the time of reporting.

Table 9.4: Third-Party Crossing Projects in 2012

Type of Projects	Number of Cases
Road	9
Electricity	5
Telecom	12
Water line	22
Pipeline (Natural Gas Pipeline)	1
TOTAL	**23**

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 2012, 98.12% of parcels were transferred to BTC although 99.09% 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 2013 for the remaining parcels. The process of transfer of land rights from BOTAŞ to BTC Turkey has no impact on communities.

9.3.4 RAP Monitoring

No external RAP monitoring activities were conducted in 2012 in Turkey.

Meanwhile, internal RAP monitoring activities continued in Turkey. In addition to BTC's internal monitoring, BTC Turkey signed a contract with the University of Ankara to conduct annual reviews of BTC's social performance against social requirements agreed in the ESAP.

10 SUMMARY OF KEY HEALTH AND SAFETY STATISTICS

The majority of targets and KPIs set at the beginning of 2012 for Operations have been met. All operational activities were conducted in a safe manner without any major or high potential incidents.

Operational activities were conducted across the 3 countries with safety performance 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 during 2012.

A Functional Midstream Operations organisational change was initiated in 2012. This change process was managed effectively and successfully implemented to form a more flexible and balanced organisation, structured by function.

Another priority for 2012 was the closure of the 2011 Safety and Operational Integrity audit action items. In 2012, all recommended actions were closed, maintaining 0 recycle and 0 overdue rates, which is an exceptional performance on action closure.

The following is a summary of the main health, safety and emergency response related activities in 2012.

Safety:

- Closure of 2012 Safety and Operational Risk Audit action items;
- Quarterly update of the risk register and risk mitigation plans;
- Development and implementation of the 2012 annual assurance plan;
- Completion of the 2012 competency programme for site H&S Advisors (Azerbaijan and Georgia);
- Azerbaijan and Georgia contractors safety leadership forums conducted;
- Development of the BTC Pipeline Project HSE strategy, HSE plan and risk assessment;
- Annual control of work gap analysis in Azerbaijan and Georgia;
- Quarterly incident trend analysis process continued;
- Main contractor 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 2012 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 carried out in 3 countries; and
- Defensive driving training programme updated with a new training provider selected.

Health:

- Azerbaijan/Georgia pipelines medical emergency response strategy revised;
- Personnel skin survey completed at pipeline facilities;
- BTC Turkey health audit conducted;
- Quarterly food hygiene assessment conducted at pipeline facilities;
- Azerbaijan/Georgia pipelines 2012 Health Plan developed, published and closed in the health map (99%);
- A number of health campaigns/promotional 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;
- Regular alcohol testing of Azerbaijan pipelines and Georgia ROW core contractors ongoing; and
- Personnel fitness for task programme 2012 completed.

Emergency Response:

- OSR capability review conducted at Azerbaijan pipelines and Georgia operations;
- OSR audit conducted for Supsa Marine Terminal;
- Implementation fire fighting plan for Georgia operations;
- Ministry of Emergency Response/EPPD/State Oil Company of Azerbaijan Republic/BTC combined exercise conducted;
- Midstream emergency response co-ordinator workshop held;
- An intensive programme of various tier level tabletop and deployment exercises was successfully implemented. This included cross-border exercises with the involvement of relevant government bodies/agencies;
- Emergency response documentation structure was re-modelled and issued; and
- Emergency response and crisis management gap assessment against new GDP 4.6 conducted.

A summary of H&S performance during 2012 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	2011 Performance		2012 Performance	
		BP	BIL	BP	BIL
Behavioural observation safety system	N/A	24,031	8,585	22,237	7,715
Safety observation and conversation	N/A	3,425	950	35,606	565
Safety training matrix compliance (%)	>95	98	93	98	96

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

Operations Outputs	2011 Performance		2012 Performance	
	BP*	BIL	BP	BIL
Man-hours	2,123,048	2,100,715	2,593,548	2,159,076
Fatality	0	0	0	0
Days away from work cases	0	1	0	1
Recordable injury	1	4	1	3
First aid case	2	8	4	7
High potential incident	0	2	0	0
Traffic vehicle accident	9	1	6	6
Kilometres driven	9,785,054	5,096,737	8,755,855	4,621,834
Near miss	88	34	87	26

* 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, 2012

Audit/Review	Auditor	Scope	Findings and/or Recommendations
Waste management audit	Audit team consisted of environmental advisors from Azerbaijan Export Pipelines and Sangachal Terminal	Compliance with requirements for waste management processes through the BTC, SCP and WREP pipelines Azerbaijan, including IPA 1, PSA 2 and PSA 2 camp, WREP PSA 5.	General and oily wastes were disposed of into a waste bin used for collection of hand pumps at the PSA 2 chemical storage area. The bulk of plastic packages containing general waste were stored on the barrow instead of the waste skip at PSA 2 waste collection point. Regional Safety and Operational Risk Audit Preparation Guidelines is presented as the Integrated Waste Management Implementation Plan in existing Azerbaijan Export Pipelines Waste Management Procedure. The document was given with the wrong reference under this number. **Good Practice:** Staff and contractors working within BTC had a good knowledge of their roles and responsibilities associated with waste management implementation.
ISO 14001 Standard requirements Operations Management System 7.1 Regulatory Compliance AGT Region internal procedures and guidance	Auditors from BP Audit team	Assess the compliance status of BTC (and SCP/WREP/ Sangachal terminal) against the Operations Management System: Feb 2012	During the audit, 2 examples of good practices were observed including hazardous material management process and OMS 7.1 Regulatory Compliance. Conversely, 3 areas for improvement were identified that related to the AGT Region Hazardous Materials Management Procedure, Azerbaijan Export Pipelines Asset Leaks and Seeps Reporting Procedure and the electronic format of the chemical inventory. Proper corrective actions have been proposed.
Regular environmental inspections	AGT region environmental advisors	Compliance to regulations and environment procedures and instructions at IPA 1, PSA 2, BVs	Weekly and monthly environmental inspections were carried out at all AGIs throughout 2012. No major issues were identified, and all minor issues are closed-out as soon as practicable on an ongoing basis.

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

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, 2012

Audit/Review	Auditor	Scope	Findings and/or Recommendations
Integrated self-assurance review – ISO 14001 and regulatory compliance	Auditors from AGT Region assets (other than Georgia Exports Pipelines)	Status of BTC (and SCP/WREP/Supsa terminal) readiness for ISO 14001 re-certification audit and compliance status against Operations Management System Sub-element 7.2: August 2012	Overall, the EMS is well maintained in terms of site-specific procedure implementation, internal and external reporting, housekeeping, monitoring and operational control. Objectives and targets have been set at all levels and relevant programmes are in place. Site reviews of activity aspects and impacts are conducted to ensure operational controls are in place and followed. However, 22 findings, mainly related to hazardous material management and compliance task management issues, were identified. 32 corrective actions addressing the audit findings were uploaded and tracked through the Tr@ction system.
Subject matter audit: ESAP Emission Management Plan – groundwater and surface water monitoring element	Emission subject matter expert from Georgia Exports Pipelines	Assess compliance of groundwater and surface water monitoring practices against the Emission Management Plan and groundwater and surface water Monitoring Procedure requirements: June 2012	The audit focused on completeness of implementation of groundwater and surface water monitoring requirements in the field and assessed potential compliance gaps. No gaps were identified, but a few improvement actions were defined to make field sampling more efficient. These actions are tracked through Tr@ction system.
Subject matter audit - waste management	Waste Subject Matter Expert from Georgia Exports Compliance and Environment (C&E) team	Assess compliance of waste management against Waste Management Procedure requirements: June to July 2012	The audit focused on checking conformance with maintaining the waste transfer note system. All the Operations site records were thoroughly checked with no major gaps identified.
Regular environmental site inspections	Georgia Exports C&E Field team	Regular environmental inspections of PSG 1 and 2; EDDF, Area 80; camps and ROW	Regular environmental inspections were carried out at all AGIs and camps throughout 2012. Identified issues were tracked through inspection checklists and, where relevant, through action tracking system tools on an ongoing basis.
Employment and Training Management Plan audit	BTC Georgia Social, PSCM, Human Resources and Security teams	Evaluate employment practices of security contractor and its compliance with company social commitments	Data weregathered from documentation reviews and interviews with management and staff. Positive results were noted and recommendations on findings were provided.

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 2012 are summarised in Table 11.3 and 11.4.

Table 11.3: Summary of Internal Reviews/Audits, Turkey, 2012

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
Day-to-day field inspection (E&S assurance) and monitoring of reinstatement activities	BTC	Pipeline repair Contractor	Monitoring of reinstatement/ geo-hazard works on an ongoing basis by BTC Environmental and CSR teams	The pipeline repair contractor was monitored by BTC's Site team on a daily basis and Central Environment and CSR teams on an ongoing ad-hoc basis to ensure conformance with ESIA and ESAP requirements. 2 non-conformances were raised, one for failing to report environmental incidents and the other for not properly authorised borrowing of soil. Land Exit Protocols and complaint close-out forms were signed by the complainants, contractor representatives and BIL PCREs following reinstatement actions taken.
Social compliance reviews	BTC	BIL and BTC's Direct Contractor	Social requirements	The 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. The CSR team visited 6 locations 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 2012. 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. In addition to the monthly social reports from BIL PCREs, the BTC CSR team organised regular meetings with BIL PCREs to discuss actions and issues on a systematic basis. In addition to monthly meetings, the BTC CSR team organises half-yearly planning and performance evaluation meetings with BIL PCREs.
Social competency assessment	BTC	BTC's pipeline repair contractor	Social requirements	In 2012, a social competency audit was conducted for the BTC pipeline repair contractor. Based on the results of this competency assessment, a training programme and training materials were developed for contractor site staff to

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
				develop their capacity on BTC social requirements. This training will continue to be held in 2013 with new contractors such as the MARPOL construction contractor.
Ongoing CIP and RDI technical monitoring	BTC	CIP and RDI IPs	CIP and RDI activities	The CSR team and external consultants conducted several site visits in 2012. As CIP projects ended in 2012, close-out surveys were conducted for each project implemented along the BTC route. The content of surveys was developed by an academic who also works for a rural development NGO with the support of SDI team. Extensive surveys were conducted in project villages, which assessed the project results. CIP project teams conducted surveys in over 300 villages. The results are being evaluated and the final report will be issued by the academic in 2013; however, it is possible to say that the surveys show that the machinery and related production capacity of co-operatives increased. Income generation initiatives and good agricultural techniques introduced by the projects continue. In addition, the CSR team and its external development consultants also spent approximately 50 days onsite visiting villages and local authorities to ensure SDI projects and relations with communities are managed in line with agreed plans and commitments.
Pre-IEC audit and E&S compliance review (facilities)	BTC C&E and CSR teams	BIL	Compliance with ESAP and ESIA	An internal E&S audit was conducted for BTC Operations in Turkey including a documentation review, site visits, and interviews with BTC, BIL, contractor personnel and villagers. During the environmental review 1 Level I non-conformance was identified at the CMT and PT 3.
Pre-IEC audit and E&S compliance review (ROW and Marine)	BTC C&E team	BIL	Compliance with ESAP and ESIA	An internal E&S audit was conducted for BTC Operations in Turkey including a documentation review, site visits, and interviews with BTC, BIL and contractor personnel and villagers. During the environmental review, no new non-conformances were raised. Improvement modifications were made.
Financial and contractual audits for SDI projects	BTC	SDI IPs (grantees)	Financial and contractual compliance to grant agreements	Close-out audits were conducted for CDI projects that ended in 2012 including financial and contractual audits. Audits were conducted by a group composed of CSR, Finance, PSCM team representatives plus an external consultant. The results

Audit/ Review	Auditor	Auditee	Scope	Findings and/or Recommendations
				were shared with IPs and the majority of financial corrective actions required were completed. A couple of pending contract/close-out actions will be completed in 2013.
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 covering all current CIP contracts ongoing since 2003/ 2004. The objective of the audit was to verify that the grants/charges related to the referenced work were appropriate, adequately documented and were in accordance with the contract. The audit report was shared with the CSR team and IPs. An action plan was developed and most of the recommended actions were all closed by the end of 2012.
HSE compliance review	BTC H&S,Emergency Response and C&E teams	Tekfen (Category A contractor of BTC)	Compliance with BTC Statement Of Environmental and Social Requirements and BP Contractor Global Model HSE Template	This was the second HSE compliance review of Tekfen that was focused on the new BP Contractor Global Model, HSE compliance and ISO 14001 implementation. Tekfen Ceyhan offices were reviewed and interviews were conducted with relevant contractor staff. 3 non-compliances were recorded during the review with all closed-out by the contractor within 2012. The review will be repeated in 2013.

Table 11.4: Audits Conducted by BIL

Audit/Review	Auditee	Scope	Findings and/or Recommendations
ISO 14001 internal audit of BIL facilities (integrated audit with Occupational Health and Safety Management Systems and Quality Management System	BIL AGIs	Compliance with ISO 14001	No major findings observed. Findings evaluated and corrective action requests were initiated by BIL as appropriate.
Environmental compliance audit of BIL facilities	BIL AGIs	Compliance with national legal requirements	No major findings observed.
Environmental compliance audit of third-party waste facilities	Erzurum Municipality Landfill site	Compliance with BIL EMS	No major findings observed. EIP project and reviews ongoing.
Environmental compliance audit of third-party waste facilities	Osmaniye Municipality WWTP	Compliance with BIL EMS	No major findings observed.
Environmental compliance audit of third-party waste facilities	Dönkasan (paper recycling)/Yılmazlar Hurdacilik (plastic/glass recycling)/Ekinciler and Eşmetal (metal recycling)	Compliance with BIL EMS	No major findings observed.

11.2 EXTERNAL REVIEWS

11.2.1 ISO 14001 Re-certification

The BTC and SCP pipelines (along with WREP) maintained certification against the international ISO 14001 EMS Standard. The Azerbaijani section of the pipelines hosted a surveillance audit in May 2012, and the Georgian section of the pipelines was audited during the re-certification audit in October 2012. The certification body was Moody International Certification Ltd (TIA Intertek). General outcomes of the audit are that management at all sites visited remained committed to continued improvement of the EMS.

One corrective action request was raised during the re-certification audit in Georgia, relating to emergency response exercise plans and their implementation. Relevant root-causes and corrective actions were identified, uploaded and tracked through the Tr@ction system.

Following the re-certification audit in October 2012, the new 3-year ISO 14001 certificate was issued on 11 January 2013 covering BP operations in Azerbaijan and Georgia.

In Turkey, BIL obtained ISO 14001 certification in 2008 from the British Standards Institution. A surveillance audit was carried out by the British Standards Institution in October 2012. The next audit is scheduled for October 2013.

11.2.2 Independent Environmental Consultants

Between 8 and 21 July 2012, the IEC conducted their fourteenth post-financial visit to the AGT regions to monitor compliance with BTC Project E&S commitments.

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

As outlined in the IEC's audit report, the primary finding of this visit was that construction-related issues are nearly all closed. Current main environmental issues relate predominantly to maintenance. As the BTC Pipeline Project is in an advanced Operations phase, the focus of the site visit was to understand if maintenance issues are correctly identified and managed effectively. In general, appropriate management systems are in place and working effectively within the Project.

The Level I non-compliance assigned in 2011 was elevated to Level II in 2012 due to a failure to build the marine slops treatment facilities at the CMT in Turkey, for which BIL has been fined by the Turkish MoE.

Tables of recommendations and actions taken are provided in Appendix 2.

Executive summaries and full audit reports are available at: www.bp.com/genericarticle.do?categoryId=9006657&contentId=7013553.

11.2.3 SRAP Panel

The final RAP completion audit reports for Azerbaijan and Georgia were received in December 2012. All recommendations provided in the draft report received in September 2010 were closed-out during the following months. In the final report for the BTC Georgia section, the SRAP Panel stated "Ninety-five percent of AGI surveyed households (experiencing permanent loss of land) felt the project had caused no change or had been beneficial to their households. Eighty-eight percent of ROW

survey respondents (those experiencing temporary loss of use of land) considered that the BTC project had caused no change or had been beneficial for their community. Such findings represent an outstanding achievement by BP/BTC and its staff in Georgia. The BTC project undoubtedly raised the bar for social performance on major private sector infrastructure projects. It is hoped that this is a sustainable achievement for both BP and the wider oil and gas industry".

The draft report for Turkey is still awaited. All recommendations have been addressed by BTC and all issues have been closed-out.

The SRAP Panel report on Turkey has not been submitted despite several inquiries to the Panel. However, initial survey findings proved that approximately 94% of households surveyed (838 people interviewed in approximately 60 villages in Turkey) felt the project caused no change or had been beneficial to their households. Those who raised concerns about reinstatement were also addressed through additional reinstatement works completed in 2010 and 2011 after the 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 also provided in Appendix 4.

11.2.4 Polaris

A Polaris OSR audit did not take place in Azerbaijan or Georgia in 2012.

A Polaris review did take place in April 2012 in Turkey. The review was undertaken approximately 8 months following a transition within BIL from its previous OSR contractor, a joint venture between Seacor Environmental Services (SES) and Meke Marine, referred to herein as SESMeke, to BIL personnel as well as a shift of OSR bases from SESMeke OSR facilities to BIL depots. With respect to BTC's OSR readiness in Turkey in April 2012, key findings (including positive observations) of Polaris were as follows:

- BTC remains committed to the planned response levels described in the project general OSRP and the Turkey OSRP for BIL Operations;
- The training and drill/exercise programme, when implemented as planned, provides a sustained level of competency, awareness and readiness for management and responders;
- The actual readiness of the current Response teams is unproven due to the lack of field exercises since the transition[23];
- The containment site manuals focus primarily on summer response conditions and are a valuable first response tool for that season but do not reflect the range of conditions at sites; and
- The existing equipment is in an operational state of readiness, with a few relatively minor exceptions, and is adequate to meet planned response targets.

Overall, there exists an appropriate, though reduced, response capability for the pipeline and the CMT operations despite limitations that exist during the current transition. These limitations involve primarily, the physical infrastructure at the current OSR bases/depots and the levels of experience of the response field personnel. BTC believes that above findings of Polaris related to the readiness and response capability are linked with the the termination by BIL of its contractual relationships with the internationally recognised oil spill response contractor and provision of oil spill response related services in-house.

[23] Detailed information was provided in the review report, which was also submitted to IEC Audit team in 2012 during the Lender E&S Audit in Turkey.

11.2.5 Turkey External Reviews/Audits

Summary of audits conducted by external parties is provided in Table 11.5.

Table 11.5: Audits Conducted by External Parties

Audit/ Review	Auditor	Auditee	Scope	Findings and or recommendations
ISO 14001 surveillance audits of facilities	British Standards Institution (certification body)	BIL	Compliance with ISO 14001	No major findings observed.
Environmental integrated inspection audit	Adana Provincial Directorate of MoEU	CMT	Compliance with national regulations	No non-compliance was recorded. There were some recommendations that were closed shortly thereafter.
Environmental integrated inspection audit	Kahramanmaras Provincial Directorate of MoEU	IPT 1	Environmental permit application requirements	No non-compliance was recorded.
Environmental integrated inspection audit	Erzurum Provincial Directorate of MoEU	PT 2	Compliance with national regulations	No non-compliance was recorded.
Ship waste reception facility audit by MoEU	MoEU and Adana Provincial Directorate of MoEU	CMT	Compliance with national regulations	A non-compliance was recorded as the construction of a ship waste reception facility was not started at the 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 ANNUAL REPORT[24]

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

1 EXECUTIVE SUMMARY

2 ESIAs/EIA AND PERMITTING

2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE AZERBAIJANI, GEORGIAN AND TURKISH ESIAs DURING THE YEAR.

2.2 SUMMARY OF MATERIAL PERMITS ISSUED DURING THE YEAR AND ANY APPLICABLE CONDITIONS.

2.3 UPDATE ON STATUS OF PROJECT STATE SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIAs OR PERMITS.

3 CHANGES

3.1 DESCRIPTION OF ANY CHANGES TO AN ESIA DURING THE PERIOD TO REFLECT A CLASS I, II OR III CHANGE.

3.2 SUMMARY OF THE TYPE OF CLASS I CHANGES IMPLEMENTED DURING THE PERIOD, OR A CONFIRMATION OF NO SUCH CHANGE.

3.3 LIST OF ALL CLASS II CHANGES NOTIFIED DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.

3.4 SUMMARY OF ALL CLASS III CHANGES DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.

3.5 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 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 AND BOTAŞ' INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

[24] 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 ANNUAL REPORT

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

1 EXECUTIVE SUMMARY

2 ESIAs/EIA AND PERMITTING

2.1 SUMMARY OF ANY MATERIAL MODIFICATIONS TO THE AZERBAIJANI, GEORGIAN AND TURKISH ESIAs DURING THE YEAR.

2.2 SUMMARY OF MATERIAL PERMITS ISSUED DURING THE YEAR AND ANY APPLICABLE CONDITIONS.

2.3 UPDATE ON STATUS OF PROJECT STATE SPECIFIC REQUIREMENTS FOR FURTHER WORK UNDER THE ESIAs OR PERMITS.

3 CHANGES

3.1 DESCRIPTION OF ANY CHANGES TO AN ESIA DURING THE PERIOD TO REFLECT A CLASS I, II OR III CHANGE.

3.2 SUMMARY OF THE TYPE OF CLASS I CHANGES IMPLEMENTED DURING THE PERIOD, OR A CONFIRMATION OF NO SUCH CHANGE.

3.3 LIST OF ALL CLASS II CHANGES NOTIFIED DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.

3.4 SUMMARY OF ALL CLASS III CHANGES DURING THE PERIOD, OR CONFIRMATION OF NO SUCH CHANGES.

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

4 COMPLIANCE WITH ENVIRONMENTAL STANDARDS AND APPLICABLE ENVIRONMENTAL LAW

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

4.2 SUMMARY OF AIR EMISSIONS.

4.3 SUMMARY OF ENVIRONMENTAL DISCHARGES.

4.4 STATEMENT INDICATING WHETHER BTC 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 AND BIL'S INTERNAL ENVIRONMENTAL AND SOCIAL AUDIT PROGRAMMES.

APPENDIX 2: CLOSE-OUT STATUS OF ACTIONS RELATED TO NON-COMPLIANCES RAISED THROUGH IEC MONITORING

Appendix 2 contains BTC's responses and progress towards implementing and effectively closing out the non-compliances raised by the IEC. Items that remain open are reported in E&S Annual Reports until they have been closed. Items that have been closed do not appear in subsequent reports. In adopting this approach, the BTC Pipeline Project aims to provide transparency and assurance that measures are being taken to ensure follow-up and close-out of all actions to address non-compliances.

APPENDIX 2A – AZERBAIJAN ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

There were no non-compliances identified by the IEC audit in 2012.

APPENDIX 2B – GEORGIA ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

There were no non-compliances identified by the IEC audit in 2012.

APPENDIX 2C – TURKEY ACTION STATUS AGAINST AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Responsible Party	Target Date	Closure Status
4.6.1	Sep 2011	Pollution prevention and environmental monitoring	Failure of building the marine slops treatment facilities at the 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.	Contract signed in November 2012. Project ongoing. BTC will ensure that Government support is engaged through focused communication.	BTC	30/05/2014	OPEN
4.1.2	July 2012	E&S management, organization and resources		Rec.	Following the Polaris recommendations, BIL should strengthen its efforts for training and preparedness against possible oil spills.	All set-up requirements were resumed to pre-2011 conditions. BTC initiated a direct contract with NRC. NRC is operating under BIL's command and control with sufficient equipment and personnel. Action taken.	N/A	N/A	CLOSED
4.1.2	July 2012	E&S management, organization and resources	The BIL E&S team is operational however; one Environmental Inspector position at the CMT is still open. The IEC understands BIL's efforts in hiring prepared personnel in order to fill the vacant position from the 2011 site visit.	Rec.	It is recommended that BIL continue its efforts in order to fill the last vacancy.	An Environmental Inspector for CMT was employed in 2012 August.	BIL	N/A	CLOSED
4.1.2	July 2012	E&S management, organization and resources	The PCR team is responding to a new scope of work, more oriented to improve community awareness against ROW violations and to regulate third-party crossings.	Rec.	The IEC recommends that adequate PCR team resources be maintained and the last vacant position filled in a short time frame.	All positions are filled but BIL PCREs have yet to be provided with vehicles to implement their duties more effectively.	BIL	N/A	Personnel - CLOSED Vehicle Resource - ONGOING
4.1.2	July 2012	E&S management, organization and resources	Another Polaris audit is strongly recommended in the near future to verify progress against their previous recommendations from the April 2012 audit.	Rec.		BTC intends to initiate another Polaris audit within 2013; This item will be followed-up.	BTC	31/12/2013	OPEN
4.2.2	July 2012	Environmental tracking and performance	The implementation of the ECO card system represents a step forward in achieving an effective operations management.	Rec.	The IEC encourages additional effort be made to facilitate visitor's awareness about the system, especially during the site induction.	The Site HSE induction packages were revised to reflect Eco card process	BIL	N/A	CLOSED

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Responsible Party	Target Date	Closure Status
4.4.3	July 2012	Non-hazardous and hazardous waste	Despite observations of good operating standards at construction camp CWAAs during audits, the IEC notes that only the Operations CWAA at the CMT is currently operational while the process for constructing new permanent CWAAs at the other fixed facilities is progressing slowly. Currently the PT 1 CWAA is in tender process.	Rec.	The IEC recommends that BIL/BTC speed up the process for the construction of the new CWAAs to replace those currently in use.	PT 1: Construction of CWAA started in 2012, but could not be completed due to winter conditions at the site. PT 3 and IPT 2: planning is ongoing; the decision to determine the schedule will be made within 2013. MOC issued by BIL.	BIL	02/07/2013 (for PT 1)	OPEN
4.4.3	July 2012	Non-hazardous and hazardous waste		Rec.	The IEC recommends that remaining BPEO studies for optimizing hazardous waste disposal and for identifying sustainable options for the recycling and reuse of wastes be completed by the time of the 2013 audit.	BPEO study for hazardous waste will be completed and actions will be taken. BPEO study for recycling and reuse of wastes will be put on the agenda of 2014.	BIL	01/07/2013 (for hazardous wastes) 2014-Q1 (for other)	OPEN
4.4.3	July 2012	Non-hazardous and hazardous waste	The construction materials and wastes legacy is not yet resolved.	Rec.	The IEC recommends speeding up the process and to make final decision regarding the disposal/reuse/recycling of all material/waste from construction still present at different campsites.	A commission on the issue has been set-up. A large amount of materials from the sites have been donated to various organisations. All hazardous wastes (paints, chemicals, etc.) from the construction phase were sent for final disposal.	BIL	N/A	CLOSED
4.4.4	July 2012	Chemical storage facilities at fixed facilities		Rec.	The IEC recommends that the Project provide proper containment measures at the chemical storage facility at PT 2 as soon as possible.	Necessary actions have been taken and proper containment has been provided for the chemical storage facility at PT 2.	BIL	N/A	CLOSED
4.4.7	July 2012	Waste water management		Rec.	A quick coliform analysis kit should be purchased for each WWTP facility.	Feasibility will be assessed.	BTC	31/12/2013	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Responsible Party	Target Date	Closure Status
4.4.7	July 2012	Waste water management		Rec.	A complete revision of the chlorination procedure at all WWTPs is recommended. It is also suggested the study of new possible solutions, e.g. ultra violet lamps as the Project is already using at IPT 1 and, more successfully, in Georgia.	It was decided not to use ultra violet lamps in Turkey based on the operational challenges of the technology. Instead, the improvement of chlorination practice is the agreed action. The improvements are to install chlorine contact tanks, chlorine measurement devices and increase contact time and operational control. BTC is funding and BIL is executing these actions.	BTC	31/12/2013	CLOSED
4.4.7	July 2012	Waste water management		Rec.	It is recommended that repair works of the Primary Withholding Pond (PWHP) at PT 3, including replacement of the damaged high-density polyethylene 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 (repeat recommendation).	A tender for repair works was announced but no proposal was obtained. This work will be carried out during the application of ponds pavement MOCs. Groundwater at PT 3 is already monitored annually. Because of the PWHP leakage, groundwater at PT 3 will be monitored two times a year. Additional monitoring will be carried out in fall 2013.	BIL	30/12/2013	OPEN

Ref. No.	Date of finding	Category	Description of Finding	Level of Non-Compliance	Recommendation for Improvement	Action Taken	Responsible Party	Target Date	Closure Status
4.4.7	July 2012	Waste water management	The process of enhancing the performances of the WWTPs at PT 2 and PT 4 facilities as well as the implementation of the upgrade for SWPs, PWHPs and OWSs at all fixed facilities is progressing slowly.	Repeat 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.	Enhancements of WWTPs at PT 2 and PT 4 were completed in 2012. All WWTP discharges were directed to the receiving environment in 2012. The outlet of the PWHP shall be connected directly to the environment at the CMT and PT's. e-MOC process is ongoing. MOC process has been initiated for pavement of ponds and provision of pond aerator. MOC process has been initiated to install decanters for all facilities WWTPs' sludge dewatering. Equalization tanks needed in front of the grit and grease unit for WWTPs at PT 1 and PT 3 works are ongoing. Provision of glycol and chlorine test kits e-MOC process is ongoing. MOC process has been initiated for managing glycol drains of Utility II.	BIL	2014-Q2	OPEN
4.6.2	July 2012	Erosion control, reinstatement and biorestoration	The re-routes of the pipeline at KP 1007 and KP 383 represent major construction works.	Rec.	The IEC reminds BTC that there are specific MOC Class changes associated with re-routing that may require Lender notification.	The MOC process defined in the ESAP for BTC and BIL projects or actions that meet the criteria will be followed.	BTC	31/12/2013	CLOSED
4.11.2	July 2012	H&S		Rec.	The IEC recommends that adequate and regular workplace monitoring systems be implemented again for VOCs and BTEX at the CMT.	BIL to advise during the 2013 IEC visit.	BIL (H&S)	BIL to advise	BIL to advise

APPENDIX 3: ENVIRONMENTAL MONITORING RESULTS

APPENDIX 3.1: AZERBAIJAN

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

Appendix 3.1a – Ambient Air Quality

Pollutant	Standard	Units	Averaging Period
NO_2	40	$\mu g/m^3$	Annual mean

PSA 2: 18 July to 17 August 2012

ID	Pollutant	Units
	NO_2	
PSA 2 S3	4.8	$\mu g/m^3$
PSA 2 S5	5.2	$\mu g/m^3$
PSA 2 S6	5.9	$\mu g/m^3$
PSA 2 S7	5.7	$\mu g/m^3$
PSA 2 S8	7.3	$\mu g/m^3$

S – Station

Appendix 3.1b – Stack Emissions Monitoring

Pollutant	ESAP Standard			Units
	Emission Stream Sources			
	MOL Turbines	WBH	Generators	
NO_x	70-75 at 15% O_2, dry	450	2,000	mg/Nm^3
CO	N/A	N/A	650	mg/Nm^3
SO_2	35	1,000	1,700	mg/Nm^3
PM_{10}	5	100	130	mg/Nm^3

PSA 2/IPA 1:

Equipment	Date Tested	Load (kWth, Speed in % and Tempera-ture °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	12/02/13	82.8% kWth	Gas	72.9	3,294	0	5	246	11,134	0.0	20.1
PSA 2 Turbine 2	05/0/13	88.8% kWth	Gas	101.4	2,182	0	5	1,274	27,418	0.0	78
PSA 2 Turbine 3	07/02/13	90.7% kWth	Gas	127.2	1,205	1	5	1,601	15,161	12	78
PSA 2 Turbine 4	04/12/13	86.% kWth	Gas	92.4	3,850	1	5	1,096	45,702	13	74
PSA 2 Generator A	08/02/13	46.6% kWth	Diesel	477	225	19	62	517	244	20	67
PSA 2 Generator B	06/02/13	56.8% kWth	Diesel	439	279	17	62	594	378	23	84
PSA 2 Generator C	14/02/13	51.8% kWth	Diesel	475	224	69	62	778	367	113	102
PSA 2 WBH	05/02/13	75 °C	Diesel	178	28	74	55	59	9	25	18
IPA 1 Generator A	09/02/13	37.7% kWth	Diesel	1920	120	0	62	760	48	0.0	25
IPA 1 Generator B	09/02/13	37.4% kWth	Diesel	1077	122	0	62	388	44	0.0	22

NOTE: Figures in red indicate exceedances with project standards

Appendix 3.1c – Environmental Noise

	Standard	Units	Period
PSA 2; 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	43	dB(A)	Dec-2012	5 min	Day time
PSA 2 NM 2p	44	dB(A)	Dec-2012	5 min	Day time

NM – Noise Monitoring

IPA 1:

ID	Readings	Units	Date	Duration	Comments
NM 1p	42	dB(A)	Dec-2012	5 min	Day time
NM 2p	44	dB(A)	Dec-2012	5 min	Day time
NM 3p	45	dB(A)	Dec-2012	5 min	Day time

BVs:

ID	Readings	Units	Date	Duration	Comments
AB-4 NM 1p	43	dB(A)	Dec-2012	5 min	Day time
AB-7 NM 1p	44	dB(A)	Dec-2012	5 min	Day time
AB-10 NM 1p	43	dB (A)	Dec-2012	5 min	Day time
AB-11 NM 1p	43	dB(A)	Dec-2012	5 min	Day time
AB-13 NM 1p	43	dB(A)	Dec-2012	5 min	Day time
AB-14 NM 1p	43	dB(A)	Dec-2012	5 min	Day time
AB-14 NM 2p	44	dB(A)	Dec-2012	5 min	Day time

AB – Azerbaijan Block Valve

Appendix 3.1d – 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
Biochemical Oxygen Demand (BOD)	25	mg/l
COD	125	mg/l
Total suspended solids (TSS)	35	mg/l
Ammonium (NH_4)	10	mg/l
Total nitrogen	15	mg/l
Phenols	0.5	mg/l
Total phosphorus	2.0	mg/l
Sulphides	1.0	mg/l
Oil and grease	10	mg/l
Silver (Ag)	0.5	mg/l
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
Ni	0.5	mg/l
Selenium (Se)	0.1	mg/l
Zn	2.0	mg/l

PSA 2 (Sample Location – PSA 2 Reed Bed)

Parameter	Units	Month, 2012											
		Jan (average)	Feb (average)	Mar (average)	Apr (average)	May (average)	Jun (average)	Jul (average)	Aug (average)	Sep (average)	Oct (average)	Nov (average)	Dec (average)
Total coliform bacteria	per 100 ml	<20	<20	152	196	89	85	108	131	116	51	144	80
pH	-	7.6	7.8	8.1	7.6	7.1	7.1	7.3	7.1	7.0	7.0	7.3	6.9
Total residual chlorine	mg/l	<0.02	0.03	0.03	0.04	0.06	0.04	0.04	0.03	0.03	0.03	0.02	0.02
COD	mg/l	41	33.2	28.4	37.5	43	41	40	37	31	23	33	33
Total suspended solids	mg/l	5	6.4	11	10.7	9.0	6.3	4.8	5.7	5.5	9.0	6.3	63
Ammonia	mg/l	0.78	1.2	0.67	2.45	3.12	6.0	5.1	1.2	2.3	0.35	3.6	1.9
Turbidity	FNU	5.5	7.2	7.97	8.45	7.0	5.3	4.0	4.15	5.0	6.2	5.28	5.87
Conductivity	mS/cm	1.34	3.0	1.96	1.4	2.8	2.34	2.84	2.15	2.45	2.05	2.04	2.19
BOD	mg/l			7			**28**			15			20
Phenols	mg/l			0.005			0.007			0.005			0.001
Sulphides	mg/l			<0.005			<0.005			<0.005			<0.005
Oil and grease	mg/l			<1.5			<1.5			<1			<1.5
Ag	mg/l			<0.001			<0.0001			<0.001			<0.001
As	mg/l			0.012			0.018			0.002			0.002
Cd	mg/l			<0.001			<0.0001			<0.001			<0.001
Cr (total)	mg/l			<0.001			0.003			<0.001			<0.001
Cu	mg/l			0.004			0.001			0.007			<0.003
Fe	mg/l			0.011			0.048			0.063			0.006
Pb	mg/l			<0.003			<0.0007			<0.003			<0.003
Hg	mg/l			<0.001			<0.0002			<0.002			<0.002
Ni	mg/l			0.003			0.027			0.006			<0.003
Se	mg/l			<0.008			<0.0008			<0.008			<0.008
Zn	mg/l			0.003			0.006			0.002			0.007

Appendix 3.1e – Groundwater and Surface Water Monitoring Programme

Groundwater Monitoring – Karayazi and around PSA 2

Date of sampling		May 2012									
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	6.7	7.1	7.3	No water	No water	7.0	6.9	8.8	9.4
Temperature	°C		16.4	16.8	18.4			14.2	16.4	26.2	25.8
Conductivity	mS/cm		4.66	2.59	9.7			2.17	11.4	1.84	0.55
Total Hydrocarbon (THC)	µg/L		<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
BTEX	µg/L		<0.02	<0.02	<0.02			<0.02	<0.02	<0.02	<0.02

Date of Sampling		Nov 2012									
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	6.7	7.1	7.2	No water	No water	7.0	6.9	8.2	8.8
Temperature	°C		15.3	16.3	16.7			16.5	16.5	21.8	22.2
Conductivity	mS/cm		4.9	2.8	10			3.13	11.03	2.14	0.62
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 2012		Nov 2012	
Parameter	Unit	Upstream	Downstream	Upstream	Downstream
pH	-	7.8	7.9	7.7	7.7
TPH	µg/L	<20	<20	<20	<20
PAH (sum of 16)	µg/L	<0.01	<0.01	<0.01	<0.01
Benzene	µg/L	<0.2	<0.2	<0.2	<0.2
Toluene	µg/L	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	µg/L	<0.2	<0.2	<0.2	<0.2
o-Xylenes	µg/L	<0.2	<0.2	<0.2	<0.2

Surface Water Monitoring IPA 1

Date of Sampling		May 2012		Nov 2012	
Parameter	Unit	Upstream	Downstream	Upstream	Downstream
pH	-	7.5	7.4	7.7	7.2
TPH	µg/L	<20	<20	<20	<20
PAH (sum of 4)	µg/L	<0.01	<0.01	<0.01	<0.01
Benzene	µg/L	<0.2	<0.2	<0.2	<0.2
Toluene	µg/L	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	µg/L	<0.2	<0.2	<0.2	<0.2
o-Xylenes	µg/L	<0.2	<0.2	<0.2	<0.2

Appendix 3.1f – Waste

BTC Waste Volumes: Summary, 2012

Main Waste Streams	Unit	Value
Oily solid waste (oily rags, filters, absorbents, polyethylene)	t	15.6
Oily water	t	98.3
Oil and diesel (used)	m^3	351.4
Sewage wastes (sluge, water, raw)	t	1229.68
General	t	1.36
Antifreeze	t	22.14
Chemicals	t	398.65
Wax	t	2.2
Fluorescent tubes	t	0.3
Paper	t	0.2
Plastic	t	26
Wood	t	5.32
Metal	t	6.526
Total Hazardous wastes	t	34.8
Total Non-hazardous wastes	t	1732.9
Total Non-hazardous waste recycled offsite	t	500.0

APPENDIX 3.2: GEORGIA

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

Appendix 3.2a – Ambient Air Quality

Pollutant	Standard	Units	Averaging Period
NO_2	**40** (Annual average will reduce by 2µg/m^3 every year, to reach 40µg/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 1µg/m^3 every year from 2006, to reach 5µg/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

* No PM_{10} was measured in 2012 due to the system running on natural gas

2012 annual monitoring results for NOx, SOx and Benzene (µg/m^3)

ID	NO_x	SO_x	Benzene
PSG 1-1	3.9	3.7	0.4
PSG 1-2	4.4	5.5	0.2
PSG 1-3	3.5	5.1	0.4
PSG 1-4	3.1	4.6	0.4
PSG 1-5	4.8	4.4	0.5
PSG 2-1	2.6	3.9	0.8
PSG 2-2	2.9	3.1	0.5
PSG 2-3	3.4	5.8	0.7
PSG 2-4	3.9	5.4	0.6
PSG 2-5	3.0	4.7	0.5
Trip blank	<0.5	<1.0	<0.1

November 2012 monitoring results for NO_x, SO_x and Benzene (µg/m^3)

ID	NOx	SOx	Benzene
PSG 1-1	3.5	3.1	0.4
PSG 1-2	3.4	3.7	0.4
PSG 1-3	3.6	4.3	0.6
PSG 1-4	2.8	3.6	0.4
PSG 1-5	3.2	3.9	0.6
PSG 2-1	2.3	3.3	0.6
PSG 2-2	2.0	3.0	0.6
PSG 2-3	2.9	4.9	0.5
PSG 2-4	2.4	3.5	0.6
PSG 2-5	2.7	4.0	0.4
Trip blank	<0.5	<1.0	N/A

Appendix 3.2b – Stack Emissions

2012 Annual monitoring results

Equipment	Date	Load	Concentration at Reference Conditions				ESAP Standards			
			NO_x	CO	SO_2	PM	NO_x	CO	SO_2	PM
			mg/m³				*mg/m³*			
PSG 1										
MOL Turbine 1	04/12/12	95%	109.57	1,607.19	0.00	3.65	75	N/A	35	5
MOL Turbine 2	04/12/12	95%	118.88	1,575.48	0.00	3.63	75	N/A	35	5
MOL Turbine 3	04/12/12	95%	53.97	19.59	0.00	3.92	75	N/A	35	5
MOL Turbine 4	04/12/12	95%	53.79	23.33	0.00	3.87	75	N/A	35	5
MOL Turbine 5*							75	N/A	35	5
Generator 1	03/12/12	45%	637.54	145.86	0.00	36.16	2000	650	1700	130
Generator 2	03/12/12	45%	519.59	215.21	6.78	35.92	2000	650	1700	130
Generator 3	03/12/12	45%	332.84	749.21	38.37	25.10	2000	650	1700	130
WBH*							460	N/A	1000	100
PSG 2										
MOL Turbine 1	07/12/12	89%	105.45	1,590.25	0.00	3.66	1.87	N/A	35	5
MOL Turbine 2	06/12/12	95%	60.54	1,562.41	0.00	3.63	1.14	N/A	35	5
MOL Turbine 3	06/12/12	89%	150.90	785.52	0.00	3.71	3.63	N/A	35	5
MOL Turbine 4	06/12/12	95%	48.43	11.86	0.00	3.83	0.86	N/A	35	5
MOL Turbine 5	06/12/12	89%	127.34	899.61	0.00	3.72	2.37	N/A	35	5
Generator 1	08/12/12	45%	637.40	113.56	38.16	38.27	0.62	650	1700	130
Generator 2	08/12/12	45%	646.73	107.08	32.16	38.27	0.63	650	1700	130
Generator 3	07/12/12	45%	757.70	87.63	16.68	37.53	0.74	650	1700	130
WBH	08/12/12	45%	202.47	165.11	78.09	24.43	0.07	N/A	1000	100

* Equipment on maintenance

Appendix 3.2c – 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

2012 Environmental noise monitoring results

Sampling Point	Global Positioning System Co-ordinates	Date and Time	Measurement	Comments
PSG 1 NMP 1 (including PSG 1 camp, PSG 1 OSRB)	8513308 4590138	22/10/2012 13:35	Leq – 50.2 Lmax – 72.8 Lmin – 29.4 L90 – 30.8	Wind 0.3m/s 18ºC sunny Site noise was not audible. Background noise: birds, people, cars.
PSG 2 NMP 1	8450375 4602555	17/12/2012 12:43	Leq – 47 Lmax – 79.1 Lmin – 30.1 L90 – 35.9	Monitoring point is located 20m south from site wall. North-west wind 1.5m/s 5ºC cloudy Site noise is audible (MOL turbines) Background noise: birds, dog barking.
PSG 2 camp NMP 1	8452530 4600124	22/10/2012 16:47	Leq – 43.2 Lmax – 62.2 Lmin – 37.4 L90 – 39	North-west wind 0.5m/s 16ºC sunny Site noise was not audible. Background noise: birds, people, cars.
Borjomi OSR NMP 1	8368373 4632313	19/10/2012 10:39	Leq – 49.9 Lmax – 69.4 Lmin – 38.9 L90 – 39.7	Wind 0.5m/s 15ºC sunny Site noise slightly audible (site generator). Background noise: people, traffic.
Tsalka OSR NMP 1	8421154 4607667	29/10/2012 16:25	Leq – 39.8 Lmax – 61.6 Lmin – 25.4 L90 – 31.3	South-west wind 1m/s 8ºC cloudy Site noise was not audible. Background noise: birds, people, cars.
EDDF NMP 1	8370815 4621309	18/10/2012 15:27	Leq – 50.5 Lmax – 72.5 Lmin – 29.6 L90 – 33.4	Wind 0.7m/s 11ºC sunny Site noise was not audible. Background noise: birds, people, cars.

NMP - Noise Monitoring Point

Appendix 3.2d – Effluent

PSG 1 Retention Pond

Parameters	Standards	Feb	Mar	May	Jun	Jul	Aug	Sep
Monthly	**Mg/l**							
pH	6-9	7.57	7.85	7.2	7.9	7.68	7.18	7.75
Oil and grease	10	<1	<1	<1	<1	<1.5	<1.5	<1.5
TSS	35	10	10	5	31	<4	18	<4
NH_4	10	0.22	8.84	1.14	0.02	0.13	<0.02	4.22
COD	125	21	40	28	8	12	10	32
Sulphide	1	<0.005	<0.006	<0.005	<0.005	<0.005	<0.005	0.007
Quarterly								
BOD	25		14		5			10
Heavy metals	10		<10		<10			<10
As	0.1		<0.001		0.001			<0.001
Cd	0.1		<0.001		<0.001			<0.001
Cr (6)	0.1		<0.0007		<0.001			<0.0007
Cr total	0.5		<0.001		<0.01			<0.001
Cu	0.5		0.003		<0.003			0.004
Fe	3.5		0.007		0.003			0.006
Pb	0.1		0.002		<0.003			<0.003
Hg	0.01		<0.001		<0.002			<0.001
Ni	0.5		<0.001		<0.003			<0.001
Se	0.1		0.008		<0.008			<0.008
Ag	0.5		<0.001		<0.001			<0.001
Zn	1		0.015		0.005			0.012
Phenols	0.5		<0.001		<1			<0.001
Chlorine	0.2		0.06		<0.02			0.04

* No discharge from Retention Pond in January, April, October, November and December

PSG 2 Retention Pond

Parameters	Standards	Mar	May	Jul	Aug	Sep	Oct	Nov
Monthly	**Mg/l**							
pH	6-9	7.88	7.08	7.01	7.37	7.27	7.54	7.67
COD	125	17	<4	165	17	15	18	22
Oil and grease	10	<1	<1	<1.5	<1.5	<1.5	<1.5	<1.5
TSS	35	<4	5	14	7	10	15	18
NH_4	10	0.04	<0.002	0.02	<0.02	<0.02	<0.02	<0.02
Sulphide	1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Quarterly								
BOD	25	2				5		
Heavy metals	10	<10				<10		
As	0.1	<0.001				<0.001		
Cd	0.1	<0.001				<0.001		
Cr (6)	0.1	<0.0007				<0.0007		
Cr total	0.5	<0.001				<0.001		
Cu	0.5	0.003				0.004		
Fe	3.5	0.085				0.078		
Pb	0.1	<0.001				<0.003		
Hg	0.01	<0.001				<0.001		
Ni	0.5	0.001				<0.001		
Se	0.1	<0.0008				<0.008		
Ag	0.5	<0.001				<0.001		
Zn	1	0.019				0.015		
Phenols	0.5	<0.001				<0.001		
Chlorine	0.2	0.03				0.02		

* No discharge from Retention Pond in January, February, April, June and 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	8	7.62	7.6	7.31	6.98	7.64	7.16	7.65	7.21	7.68	7.3	7.32
Oil and grease	10	<1	<1	<1	<1	<1	<1	<1.5	<1.5	<1	<1	<1	<1
TSS	35	<4	<4	<4	<4	<4	<4	<4	14	<4	14	10	8
TDS	2,100	788	1,002	544	709	773	885	847	836	862	503	698	785
NH_4	10	0.28	2.63	0.97	0.11	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Coliform	<400	5	160,000	240	1,100	9,200		26	240	220	2	<2	<2
COD	125	5	<4	22	8	21	<4	9	12	<4	14	10	8
BOD	25	4	2	<1	4	10	<1	4	4	<1	7	6	3
Total N	15						2.58			1.82			1.0
Total P	2						3			3.2			0.2

PSG 2 Camp STP via Reed Bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	8	7.84	8	7.65	7.23	7.74	7.82	7.32	7.25	7.4	7.65
Oil and grease	10	<1	<1	<1	<1	N/A	2.1	<1.5	<1.5	<1.5	<1.5	<1.5
TSS	35	<4	<4	<4	<4	<4	<4	24	<4	12	8	7
TDS	2100	424	N/A	324	417	345	439	683	332	714	490	504
NH_4	10	0.02	0.19	0.04	0.09	<0.02	0.1	<0.02	<0.02	<0.02	<0.02	<0.02
Coliform	<400	5	92,000	5	2	11	5	33	7	5	<2	<2
COD	125	<4	<4	9	<4	4	5	10	<4	9	12	8
BOD	25	2	2	<1	2	10	4	4	<1	4	3	3

* July round samples lost during transportation

PSG 2 site STP via Reed Bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun*	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	8	7.92	7.9	7.76	7.32		7.6	7.54	7.3	7.21	7.25	7.34
Oil and grease	10	<1	<1	<1	<1	<1		<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
TSS	35	<4	<4	<4	<4	<4		<4	15	<4	8	7	7
TDS	2100		703		N/A	333		578	910	550	8	9	9
NH_4	10	0.07	0.02	0.04	0.03	<0.02		0.52	0.47	<0.02	0.21	0.2	0.2
Coliform	<400	2	5	2	2	33	<2	13	70	1,400	5	<2	<2
COD	125	30	<4	29	13	13		24	12	17	13	9	15
BOD	25	4	2	2	8	<1		6	5	5	5	4	4

*Samples lost during transportation

Area 80 STP via Reed Bed

(Monitoring results placed within this report due EDDF sewage water is being treated at Area 80 Permanent Accomodation STP)

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pH	6-9	8.01	8	7.63	7.53	7.79	7.57	7.6	7.52	7.46	7.3	7.61	7.4
Oil and grease	10	<1	<1	<1	<1	<1	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
TSS	35	<4	<4	<4	<4	<4	<4	6	<4	6	8	<4	6
TDS	2,100	1,230	664	1,015	1,029	961	1,076	620	919	920	855	981	1,0
NH_4	10	0.05	<0.02	0.41	<0.02	0.02	1.47	0.075	2	0.84	0.75	0.43	0.4
Coliform	<400	5	13	110	920	79	3500	14	110	8	7	7	<2
COD	125	19	<4	18	20	16	18	27	17	8	16	17	18
BOD	25	2	2	2	2	8	6	8	8	2	8	9	7

Borjomi OSRB via Reed Bed

Parameters	Standards	Jan	Feb	Mar	Apr	May	Jun	Jul
pH	6-9	8	7.68	7.9	7.32	7.45	7.91	8.25
Oil and grease	10	<1	<1	<1	<1	<1	<1	<1.5
TSS	35	4	<4	<4	<4	7	<4	<4
TDS	2,100	640	717	515	587	585	414	213
NH_4	10	0.11	0.16	0.1	0.1	<0.02	<0.02	<0.02
Coliform	<400	5	2	5	8	17	14	4
COD	125	23	21	28	20	17	<4	<4
BOD	25	2	2	<1	2	8	2	2

EDDF OWS

Parameters	Stnds	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oil in water	<0.02	<1	<1	<1	<1	<1	<1	2.2	<1.5	<1.5	<1.5	<1.5	<1.5

Appendix 3.2e – Groundwater and Surface water

Reports on seasonal rounds of monitoring:

Round 13: May to June 2012

Parameters/MDLs/ Sampling points	Date	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
TSW22-R013	22/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW24-R013	22/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW19-R013	22/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW8-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW20-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW4-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW5-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW5-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW6-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW17-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW15-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate1-R013	NA	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW4-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW3-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW18-R013	23/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW23-R013	24/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW20-R013	24/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW7-R013	24/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW10-R013	24/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate2-R013	NA	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG2MWI-R13	29/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW1-R13	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW18-R13	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW1-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW6-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW2-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW11-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate3-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW13-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW12-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW13-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW21-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW14-R013	30/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW14-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

Parameters/MDLs/ Sampling points	Date	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
TSW16-R13	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate4-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW5-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW1-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW2-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW1-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW3-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW2-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW3-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW4-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW5-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW6-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW7-R013	31/05/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG2SM1-013	12/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG2SM1-013	12/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW4-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW7-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMWI7-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW9-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW11-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTM2-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW8-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW10-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW13-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW14-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW15-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW9-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW11-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW12-R013	13/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW15-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW17-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW16a-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate7-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW16-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW1-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW10-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW4-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW5-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW7-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW3-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate8-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

Parameters/MDLs/ Sampling points	Date	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
BMW2-R013	14/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW11-R013	15/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW10-R013	15/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW9-R013	15/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rinsate1-R013	17/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rinsate2-R013	17/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rinsate3-R013	17/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW2-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW6-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW5-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW8-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW4-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW3-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate9-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW9-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW8-R013	18/06/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

Round 14: September to October 2012

Parameters/MDLs/ Sampling points	Date	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
KTSW2-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW5-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW17-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW2-R14-12	28/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW3-R14-12	28/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW13-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW14-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate2-R14-12	N/A	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW1-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW2-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW3-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW4-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW5-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW7-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW1-R14-12	26/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate1-R14-12	N/A	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW16a-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW17-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW13-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW14-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

Parameters/MDLs/ Sampling points	Date	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
KTSW15-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW16-R14-12	27/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW10-R14	10/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW11-R14	10/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW12-R14	10/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTMW15-R14	10/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW16-R14	09/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
RINS1-R14	11/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
RINS2-R14	11/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate4-R14	N/A	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG1MW2-R14	05/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG1MW3-R14	05/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG1MW4-R14	05/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG1MW5-R14	05/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate3-R14	N/A	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
KTSW8-R14	10/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW8-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW9-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW10-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW11-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW1-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW4-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW5-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW6-R14-12	25/09/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW13-R14	15/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW12-R14	15/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW13-R14	15/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW21-R14	15/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW22-R14	15/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW24-R14	15/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW4-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW5-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW6-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BMW7-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW2-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate5-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW3-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW10-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
EDDF	18/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
BSW9-R14	16/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW1-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW5-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

Parameters/MDLs/ Sampling points	Date	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
TMW6-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW8-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW10-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW17-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate10-R14	NA	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TMW18-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW2-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW4-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW6-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW15-R14	31/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate7-R14	NA	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate8-R14	NA	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate9-R14	NA	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW19-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW20-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW23-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG2MW1-R14	29/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG2SW1-R14	29/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
PSG2SW3-R14	29/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Duplicate6-R14	N/A	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
TSW7-R14	30/10/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rins3-R14	30/01/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2
Rins4-R14	31/01/12	<0.2	<0.2	<0.2	<0.5	<1	<10	<10	<10	<10	<50	<0.2

T - Tsalka

SW - Surface Water

MW - Monitoring Well (ground water)

KT - Ktsia Tabatskuri

B - Borjomi

Non-Hazardous Landfill Groundwater monitoring 2012

Parameters	Units	Area Background	MW 3 Q1	MW 4 Q1	MW 3 Q2	MW 4 Q2
General						
pH	-	7.3	7.19	7.08	7.19	7.08
Electrical conductivity	µS/cm	2,093	7,350	4,690	7,350	4,690
Bicarbonate	mg/L	173.2	310	190	310	190
Carbonate	mg/L	<0.1	<10	<10	<10	<10
SO_4	mg/L	7,800	3,360	2,560	3,360	2,560
Cl	mg/L	2251	440	185	440	185
Na	mg/L	3,201	1,850	710	1,850	710
NH_4	mg/L	<0.02	0.05	0.07	0.05	0.07
Total cyanide	mg/L	<0.03	<0.005	<0.005	<0.005	<0.005
Heavy metals						
As	µg/L	<5	<0.001	<0.001	<0.001	<0.001
B	µg/L	3,750	4,260	2,180	4,260	2,180
Cd	µg/L	<1	<0.001	<0.001	<0.001	<0.001
Cr	µg/L	<20	<0.001	<0.001	<0.001	<0.001
Cu	µg/L	30	<0.003	<0.003	<0.003	<0.003
Hg	µg/L	0.024	<0.002	<0.002	<0.002	<0.002
Pb	µg/L	<10	<0.003	<0.003	<0.003	<0.003
Zn	µg/L	48	0.008	0.003	0.008	0.003
Se	µg/L	28	0.013	0.011	0.013	0.011
Ni	µg/L	20	0.029	0.010	0.029	0.010
General organics						
Total organic carbon	mg/L	88.5	9	4.5	9	4.5
COD	mg/L	235.6	23	<4	23	<4
BOD	mg/L	3.96	14	<1	14	<1
Phenols	µg/L	<10	<1	<1	<1	<1
TPH						
Fraction C10-C12	µg/L	NA	<5	<5	<5	<5
Fraction C13-C22	µg/L	NA	<5	<5	<5	<5
Fraction C23-C30	µg/L	NA	<5	<5	<5	<5
Fraction C31-C40	µg/L	NA	<10	<10	<10	<10
Total C10-C40	µg/L	NA	<MDL	<MDL	<MDL	<MDL
Pesticides		<10				
Chlorinated						
p,p'- DDT	µg/L		<0.025	<0.025	<0.025	<0.025
p,p'- DDD	µg/L		<0.016	<0.016	<0.016	<0.016
p,p'- DDE	µg/L		<0.008	<0.008	<0.008	<0.008
a-BHC	µg/L		<0.005	<0.005	<0.005	<0.005
b-BHC	µg/L		<0.007	<0.007	<0.007	<0.007
g-BHC(Lindan)	µg/L		<0.005	<0.005	<0.005	<0.005
d-BHC	µg/L		<0.006	<0.006	<0.006	<0.006
Aldrin	µg/L		<0.005	<0.005	<0.005	<0.005
Endosulfan I	µg/L		<0.011	<0.011	<0.011	<0.011
Dieldrin	µg/L		<0.007	<0.007	<0.007	<0.007
Endrin	µg/L		<0.007	<0.007	<0.007	<0.007
Endosulfan II	µg/L		<0.010	<0.010	<0.010	<0.010
Endrin aldehyde	µg/L		<0.025	<0.025	<0.025	<0.025
Endosulfan sulphate	µg/L		<0.020	<0.020	<0.020	<0.020
Triazine Herbicides		<50				
Atrazine	µg/L		<5	<5	<5	<5
Desisopropyl atrazine	µg/L		<10	<10	<10	<10
Desethyl atrazine	µg/L		<5	<5	<5	<5
Ametryn	µg/L		<10	<10	<10	<10
Prometon	µg/L		<5	<5	<5	<5
Simazine	µg/L		<5	<5	<5	<5
Propazine	µg/L		<5	<5	<5	<5
Simetryn	µg/L		<5	<5	<5	<5
Prometryn	µg/L		<5	<5	<5	<5
Terbutryn	µg/L		<5	<5	<5	<5
Cyanazine	µg/L		<5	<5	<5	<5

Parameters	Units	Area Background	MW 3 Q1	MW 4 Q1	MW 3 Q2	MW 4 Q2
VOCs		<100				
Benzene	µg/L		<0.2	<0.2	<0.2	<0.2
Toluene	µg/L		<0.1	<0.1	<0.1	<0.1
Ethylbenzene	µg/L		<0.2	<0.2	<0.2	<0.2
p-Xylene	µg/L		<0.2	<0.2	<0.2	<0.2
o-Xylene	µg/L		<0.2	<0.2	<0.2	<0.2
m-Xylene	µg/L		<0.2	<0.2	<0.2	<0.2
Isopropylbenzene	µg/L		<0.2	<0.2	<0.2	<0.2
Dichloromethane	µg/L		<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane	µg/L		<0.2	<0.2	<0.2	<0.2
1,1-Dichlorethene	µg/L		<0.5	<0.5	<0.5	<0.5
Chloroform	µg/L		<0.1	<0.1	<0.1	<0.1
1,1,1-Trichloroethane	µg/L		<0.2	<0.2	<0.2	<0.2
1,2-Dichlorethane	µg/L		<0.2	<0.2	<0.2	<0.2
Trichloroethene	µg/L		<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane	µg/L		<0.2	<0.2	<0.2	<0.2
Bromodichloromethane	µg/L		<0.1	<0.1	<0.1	<0.1
trans-1,3-Dichloropropene	µg/L		<0.2	<0.2	<0.2	<0.2
cis-1,3-Dichloropropene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethane, 1,1,2-trichloro-	µg/L		<0.3	<0.3	<0.3	<0.3
Tetrachloroethylene	µg/L		<0.1	<0.1	<0.1	<0.1
Benzene, chloro-	µg/L		<0.2	<0.2	<0.2	<0.2
Benzene, 1,2-dichloro-	µg/L		<0.1	<0.1	<0.1	<0.1
Benzene, 1,4-dichloro-	µg/L		<0.1	<0.1	<0.1	<0.1
Benzene, 1,3-dichloro-	µg/L		<0.1	<0.1	<0.1	<0.1
Epichlorohydrin	µg/L		<0.2	<0.2	<0.2	<0.2
Vinyl chloride	µg/L		<0.2	<0.2	<0.2	<0.2
VOCs		<100				
Acenaphthene	µg/L		<0.07	<0.07	<0.07	<0.07
Acenaphthylene	µg/L		<0.1	<0.1	<0.1	<0.1

Parameters	Units	Area Background	MW 3 Q1	MW 4 Q1	MW 3 Q2	MW 4 Q2
Anthracene	µg/L		<0.02	<0.02	<0.02	<0.02
Benz[a]anthracene	µg/L		<0.01	<0.01	<0.01	<0.01
Benzo[a]pyrene	µg/L		<0.01	<0.01	<0.01	<0.01
Benzo[b]fluoranthene	µg/L		<0.02	<0.02	<0.02	<0.02
Benzo[k]fluoranthene	µg/L		<0.02	<0.02	<0.02	<0.02
Benzo[ghi]perylene	µg/L		<0.05	<0.05	<0.05	<0.05
Benzyl butyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1
Bis(2-ethylhexyl) phthalate	µg/L		<0.1	<0.1	<0.1	<0.1
Chrysene-d12	µg/L		<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L		<0.04	<0.04	<0.04	<0.04
Di-n-butyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1
Di-n-octyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1
Dibenz[a,h]anthracene	µg/L		<0.03	<0.03	<0.03	<0.03
Diethyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1
Dimethyl phthalate	µg/L		<0.1	<0.1	<0.1	<0.1
Fluoranthrene	µg/L		<0.04	<0.04	<0.04	<0.04
Fluorene	µg/L		<0.1	<0.1	<0.1	<0.1
Indeno[1,2,3-cd]pyrene	µg/L		<0.03	<0.03	<0.03	<0.03
Naphthalene	µg/L		<0.07	<0.07	<0.07	<0.07
Perylene-d12	µg/L		<0.1	<0.1	<0.1	<0.1
Phenanthrene-d10	µg/L		<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L		<0.06	<0.06	<0.06	<0.06
Pyrene	µg/L		<0.1	<0.1	<0.1	<0.1

DDT - p,p'- dichlorodiphenyltrichloroethane

DDD - p,p'- Dichlorodiphenyldichloroethane

DDE - p,p'- Dichlorodiphenyldichloroethylene

BHC - a- Benzene hexachloride

Appendix 3.2f – GHG emissions

GHG Emissions in 2012 (tonnes)

GHG	BTC Actual	BTC Forecast	SCP Actual	SCP Forecast	WREP/Supsa Actual	WREP/Supsa Forecast
January	21,838		2,071		2,242	
February	20,483		1,975		2,124	
March	21,180		1,947		2,229	
2012-Q1	**63,501**	**87,537**	**5,994**	**6,517**	**6,595**	**5,744**
April	17,559		1,699		2,209	
May	20,789		1,405		1,460	
June	20,556		1,379		1,418	
2012-Q2	**58,904**	**88,441**	**4,484**	**6,517**	**5,087**	**6,744**
July	19,776		1,188		2,416	
August	19,126		860		2,232	
September	17,723		637		2,409	
2012-Q3	**56,624**	**89,345**	**2,685**	**6,517**	**7,058**	**5,744**
October	17,525		819		2,155	
November	16,955		906		2,351	
December	18,500		1,345		2,021	
2012-Q4	**52,981**	**89,345**	**3,071**	**6,517**	**6,528**	**5,744**

Appendix 3.2g – Waste

Total Figures, 2012

Type of Waste (m^3)	PSG 1 (Site and Camp)	PSG 2 (Site and Camp)	SES Tsalka	SES Borjomi	BVs	SES Rustavi and Tbilisi Office
Hazardous Waste Disposed Offsite						
Oily solids	57	1.9	0	2.4	0	2
Oily liquids	40.6	3.8	1.2	0.6	50	1
Sewage sludge	250	136	0	8	0	0
Wax	1.8	0	0	0	0	0
Other	1.2	0	0	0.9	0	0
Non-hazardous Waste Recycled/Recovered Offsite						
Glass	19.8	10.7	0	0	0	0
Plastic (recycled)	92.6	26.5	2.7	2.6	0	8.5
Paper (recycled)	160.6	33.5	2.8	2.6	0	8.9
Metal (recycled)	3.7	0.5	0	1.1	0.3	0
Wood	12.2	2.5	0	0	2.2	0
Organic wastes (food wastes)	18.2	7.4	0	0	0	0
General	258	420	4.9	5.2	3.5	420

APPENDIX 3.3: TURKEY

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

Appendix 3.3a – 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
SO_2	20	24-hour average

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

CMT – Averages of 2012 Measurements

No.	Monitoring Date	Average Ambient Concentrations (µg/m^3)						
		SO_2	NO_x	Benzene	Toluene	Ethyl Benzene	Mp-xylene	O-xylene
CMT 1	March, June, September, December 2012	N/A	N/A	0.45	2.46	0.2	0.65	0,50
CMT 2		4.32	12.35	0.60	12.22	5.63	5.85	2,40
CMT 3		17.04	41.99	2.32	15.10	66.26	74.12	27.78
CMT 3D		4.44	10.85	N/A	N/A	N/A	N/A	N/A
CMT 4		N/A	N/A	0.78	17.76	3.27	3.48	1.41
CMT 4D		N/A	N/A	0.61	5.90	0.79	2.09	0.64
CMT 5		3.95	14.84	0.43	9.36	1.42	1.89	0.72
CMT 7		N/A	N/A	0.56	4.59	0.60	1.12	0,40
CMT 8		5.61	16.69	0.51	36.95	12.54	12.98	5.59
CMT 10		N/A	N/A	0.65	4.44	1.52	2.49	0.84

Appendix 3.3b – Stack Emissions

Stack Emission Standards

Emission stream sources	Parameters	Project Specified Standard
5MW reciprocating engines (gas fired) (PTs 1, 2, 3 and 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)	NO_x	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	2µg/m^3
Water heaters (gas and LPG fired) (CMT, PTs 1, 2, 3 and 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 < 500 hrs)	NO_x	460mg/Nm^3 (3% volumetric O_2)
	SO_2	1,000mg/Nm^3 (3% volumetric O_2)
	Soot	2µg/m^3
	CO	250mg/Nm^3 (15% volumetric O_2)
	PM	75mg/Nm^3 (15% volumetric O_2)

Stack Emission Monitoring Results for PTs

Facility	Parameter	Emission Source							
		Driver Engine 1	Driver Engine 2	Driver Engine 3	Driver Engine 4	Driver Engine 5	Water Heater 1	Water Heater 2	Water Heater 3
PT 1									
Date of monitoring					**May 12**				
Monitoring result	NO_x	0.27	7.5	8.5	7.4	4.8	0	0.8	0.6
	SO_2	0	12	11	10	0	0	0	0
	PM	6.72	11.7	9.82	6.96	11.72	2.57	3.38	2.88
	CO	90.31	63	62	49	75	0	0	1
PT 2									
Date of monitoring					**May 12**				
Monitoring result	NO_x	2.1	0	0	0	Not existing	0	0.3	0
	SO_2	0	0	0	0		0	0	0
	PM	4.48	3.84	7.42	8.33		3.98	5.1	0.38
	CO	35	40	42	45		0	0	0
PT 3									
Date of monitoring					**May 12**				
Monitoring result	NO_x	3	3.6	5.77	3.3	3	0.1	0.5	0
	SO_2	0	0	8.03	6	0	0	0	0
	PM	2.72	5.64	3.03	6.82	13.83	2.84	3.24	3.11
	CO	98	87	65.53	119	74	3	2	1
PT 4									
Date of monitoring					**May 12**				
Monitoring result	NO_x	1.4	1.7	3.1	0.6	Not existing	0	0	0
	SO_2	0	0	0	0		0	0	0
	PM	2.14	2.98	3.58	4.03		3.11	4.72	2.82
	CO	45	54	31	47		1	0	2

Stack Emission Monitoring Results for Intermediate Pigging and Pressure Reduction Station

Facility	Parameter	Emission Source
		Wax Handling Water Heater
IPT 1		
Date of monitoring		May 12
Monitoring result	NO_x	0.4
	SO_2	0
	Soot	2.7
	CO	0
IPT 2		
Date of monitoring		May 12
Monitoring result	NO_x	0.1
	SO_2	0
	Soot	1.7
	CO	2

Stack Emission Monitoring Results for CMT

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		May 12			
Monitoring result	NO_x	0	5.3	0.6	1.1
	SO_2	0	12	0	0
	PM	4.37	3.15	0.91	1.06
	CO	5	11	1	4

Appendix 3.3c – 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	10mg/l
	Total suspended solids	35mg/l
	Metals	
	Heavy metals, total	10mg/l
	Cd	0.05mg/l
	Cr total	0.5mg/l
	Cu	0.5mg/l
	Pb	0.5mg/l
	Hg	0.01mg/l
	Ni	0.5mg/l
	Zn	2mg/l
	NH_4	10mg/l
	Phenols	0.5mg/l
	Sulphur	1mg/l
Aqueous discharges to surface waters from STPs	pH	6-9
	BOD	25mg/l
	COD	120mg/l
	Oil and grease	10mg/l
	Total suspended solids	35mg/l
	Chlorine, total residual	0.2mg/l
	Coliform bacteria	<400MPN/100ml

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 not compliant with the Project Standards. In this case non-compliant wastewater was recycled or when the capacity of the plant was exceeded, it was disposed of at a Project approved Municipal WWTP. At the 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 EEMP, for OWSs, metals, phenols and sulphur will be monitored on a quarterly basis for one year to determine compliance with project standards. If standards are exceeded on these occasions, follow-up monitoring will be undertaken as necessary. During 2008 quarterly OWS monitoring, it was seen that there were some exceedances of sulphur; thus quarterly sulphur monitoring continued in 2009, 2010 and 2011-Q2. Since they were compliant, no further monitoring was planned for 2012 and future.

PT 1 Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
Ops WWTP (new)												
pH	No discharge	7.3	7.18	7.18	7.25	8.18	6,88	7,40	7,91	7,87	7,39	7,3
BOD (mg/l)		7.1	6	6	4	4	5,90	4	4	5,9	8	5,0
COD (mg/l)		24.5	21.4	23.5	17.9	10	19,9	16,7	12,9	19,5	26,4	16,5
Oil and grease (mg/l)		5	5	5	5	5	5	5	5	5	5	5
TSS (mg/l)		10	10	10	10	10	10	10	10	10	10	10
Total residual chlorine (mg/l)		0.02	0.02	0.02	0.02	0.02	0,1	0,1	0,1	0,10	0,10	0,10
Coliform bacteria		0	10	0	20	10	150	0	50	200	75	10
Storm Water Pond (SWP)												
pH		No flow			No discharge	8.6	No discharge	7.68	No flow	No discharge		No flow
BOD (mg/l)						5.4		14				
COD (mg/l)						21.2		50.1				
Oil and grease (mg/l)						5		5				
TSS (mg/l)						12		10				
Total residual chlorine (mg/l)						0.02		0.1				
Coliform bacteria						0		150				
OWS												
pH		Not in programme		6.92	Not in programme	8.25		Not in programme			No flow	
Oil and grease (mg/l)				8,4		5,4						
TSS (mg/l)				65,6		11,2						

PT 2 Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
Ops WWTP												
pH				8.01			8.50	8.15			8.35	8.5
BOD (mg/l)				4			11	4			4	4
COD (mg/l)				16.9			35.8	17.8			10.0	10
Oil and grease (mg/l)		No discharge		5		No discharge	5	5		No discharge	9.6	5
TSS (mg/l)				11			10.0	10			10.0	10
Total residual chlorine (mg/l)				0.02			0.11	0.10			0.10	0.10
Coliform bacteria				0			0	0			0	100
SWP												
pH								8.70			8.60	
BOD (mg/l)								7			14	
COD (mg/l)								30.2			47.2	
Oil and grease (mg/l)	No discharge	No flow			No discharge			5	No discharge		5.0	No discharge
TSS (mg/l)								20.2			16.3	
Total residual chlorine (mg/l)								0.10			0.10	
Coliform bacteria								0			150	
SWP upstream												
pH					7.81				7.99			8.93
BOD (mg/l)					<4				4			4
COD (mg/l)					<10				10			10
Oil and grease (mg/l)		No flow			<5		No flow		5	No flow		5
TSS (mg/l)					<10				10			10
Total residual chlorine (mg/l)					<0.02				0.1			0.1
Coliform bacteria					2,000				1,500			1,000
SWP												
pH					7.61				7.81			8.74
BOD (mg/l)					<4				8			4
COD (mg/l)					<10				23.1			10
Oil and grease (mg/l)		No flow			<5		No flow		5	No flow		5
TSS (mg/l)					<10				10			10
Total residual chlorine (mg/l)					<0.02				0.1			0.1
Coliform bacteria					2,500				1,000			2,500
OWS												
pH				7.50		7.64			8.26			8.90
Oil and grease (mg/l)		Not in programme		5.0	Not in programme	5.0	Not in programme		5	Not in programme		5
TSS (mg/l)				20.5		43.6			10			10

PT 3 Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
Ops WWTP (new)												
pH	No discharge	7.9	7.95	7.82	7.92	No discharge	8.01	No discharge	7.68	7.42	No discharge	8.2
BOD (mg/l)		6.0	6	4	4		4		12.6	5.7		4
COD (mg/l)		21.5	22.8	13.6	16.7		17.2		42.1	18.8		10.7
Oil and grease (mg/l)		5	5	5	5		5		5	5		5
TSS (mg/l)		10	10	10	10		10		27	10		10.00
Total residual chlorine (mg/l)		0.02	0.02	0.02	0.02		0.18		<0.1	0.10		<0.1
Coliform bacteria		0	0	0	100		0		0	0		100
SWP												
pH	No discharge			7.68	No discharge	8.7	8.45	8.67	8.78	No discharge		
BOD (mg/l)				14		18.2	12	16	13.7			
COD (mg/l)				54		70	35.5	50.1	45.8			
Oil and grease (mg/l)				5		5	5	5	5			
TSS (mg/l)				21		10	10	11.4	10			
Total residual chlorine (mg/l)				0.02		0.02	0.2	0.10	0.10			
Coliform bacteria				0		0	0	0	100			
OWS												
pH	Not in programme		No flow	Not in programme		8.33	Not in programme		8.54	Not in programme	8.15	Not in programme
Oil and grease (mg/l)						5			5.0		5.0	
TSS (mg/l)						10.7			10.0		10.0	

PT 4 Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
Ops WWTP												
pH	No discharge	7.8	No discharge		7.11	No discharge				No flow	6.87	7.06
BOD (mg/l)		7.0			14						4	8.5
COD (mg/l)		22.9			51.4						10.0	28.4
Oil and grease (mg/l)		5			5						5.0	8.4
TSS (mg/l)		10			11						10.0	23.8
Total residual chlorine (mg/l)		0.02			0.02						0.10	0.10
Coliform bacteria		0			0						0	100
SWP												
pH	No flow			No discharge	8.3	No discharge		8.67	No discharge		7.80	No discharge
BOD (mg/l)					24			24.7			13	
COD (mg/l)					87.9			91.0			45.1	
Oil and grease (mg/l)					5			5			5.0	
TSS (mg/l)					27			10			10.0	
Total residual chlorine (mg/l)					0.02			0.10			0.10	
Coliform bacteria					0			100			0	
OWS												
pH	Not in programme			7.83	Not in programme	8.70	Not in programme		7.80	Not in programme		8.4
Oil and grease (mg/l)				5.8		6.0			5.0			8.4
TSS (mg/l)				10.0		10.0			10.0			12.3

IPT 1 Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
Ops WWTP												
pH	No discharge	7.5	7.28	No discharge	7.88	7.63	No discharge		7.90	No discharge		
BOD (mg/l)		4.0	4		4	4			4			
COD (mg/l)		10.0	10.0		15.5	10			10			
Oil and grease (mg/l)		5	5		5	5			5			
TSS (mg/l)		10	10		10	10			10			
Total residual chlorine (mg/l)		400	300		100	20			100			
Coliform bacteria		7.5	7.28		7.88	7.63			7.90			
OWS												
pH	Not in programme			7.47	Not in programme	7.97	Not in programme		7.80	Not in programme		8.39
Oil and grease (mg/l)				5		6			5			5
TSS (mg/l)				10.0		10.0			10.0			10.0

IPT 2 Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
OWS												
pH	Not in programme			7.08	Not in programme	7.41	Not in programme		8.0	Not in programme		8.21
Oil and grease (mg/l)				5		5			5.0			5
TSS (mg/l)				10		12.2			10.0			10.0

CMT Aqueous Discharges Monitoring Results

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
Ops WWTP												
pH	7.05			8.07	7.32		8.10				7.33	
BOD (mg/l)	5			4	18.6		6.40				7.9	
COD (mg/l)	16			11	78.4		28.3				26.3	
Oil and grease (mg/l)	5	No discharge		5	5	No discharge	5	No discharge			8.2	No discharge
TSS (mg/l)	10.0			11	10		10				10.0	
Total residual chlorine (mg/l)	0.02			0.02	0.02		0.1				0.10	
Coliform bacteria	0			300	0		300				100	
Construction WWTP												
pH	7.00	7.8	8.69			7.8				8.38		
BOD (mg/l)	11	11.2	4			4				4.0		
COD (mg/l)	34	36.4	10.5			16				11.9		
Oil and grease (mg/l)	5	5	5	No discharge		5	No discharge			5	No discharge	
TSS (mg/l)	15.2	10	10			10				10		
Total residual chlorine (mg/l)	0.04	0.02	0.02			0.02				0.10		
Coliform bacteria	100	0	0			0				400		
SWP												
pH				No discharge					No flow		No discharge	
BOD (mg/l)												

	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12
COD (mg/l)												
Oil and grease (mg/l)												
TSS (mg/l)												
Total residual chlorine (mg/l)												
Coliform bacteria												
SWP upstream												
pH		7.97	8.54	8.47	8.1	8.29		8.45			7,3	8,45
BOD (mg/l)		4	4	<4	8	4		5			6,5	6,5
COD (mg/l)		10	13.8	12.7	35.8	18.6		15.8			21,8	21,7
Oil and grease (mg/l)	No flow	5	5	5	7.2	5	No flow	5	No flow		5,2	<5
TSS (mg/l)		10	10	28.1	10	10		23.8			<10	<10
Total residual chlorine (mg/l)		0.02	0.02	0.02	0.02	0.02		<0.1			<0,1	<0,1
Coliform bacteria		1000	300	800	1.000	2.600		2.250			100	2.500
SWP downstream												
pH	7.2	7.94	8.51	8.27	8.3	8.47		7.6	7,77		7,51	8,32
BOD (mg/l)	6.8	5.2	<4	5	12.1	5		15.4	6		9	6,4
COD (mg/l)	19	15.1	13.6	26.9	47.4	23.6		44.1	18,7		31,7	21,5
Oil and grease (mg/l)	5	5	5	5	5	5	No flow	7.4	<5,0	No flow	<5	<5
TSS (mg/l)	10	10	10	266.8	10	46.3		<10	<10,0		<10	<10
Total residual chlorine (mg/l)	0.02	0.02	0.02	0.02	0.02	0.02		<0.1	<0,01		<0,1	<0,1
Coliform bacteria	2.000	3.000	600	2.000	150	700		1.800	1.200		100	3000
OWS 1 and 2 (office and housing compounds)												
pH		8.2	9.15									7.58
Oil and grease (mg/l)	No flow	19.8	<5					No flow				5.0
TSS (mg/l)		17.4	<10									10.0
OWS 3 (process area)												
pH												7.54
Oil and grease (mg/l)						No flow						5.0
TSS (mg/l)												10.0
OWS 4 (tank farm)												
pH												7.67
Oil and grease (mg/l)						No flow						5.0
TSS (mg/l)												10.0
OWS 5 (metering area)												
pH		8.6	8.35									
Oil and grease (mg/l)	No flow	<10	<5					No flow				
TSS (mg/l)		11	<10									
OWS 6 (jetty 1)												
pH	6.77			7.34			7.72	7.60		8.30	8,30	8,30
Oil and grease (mg/l)	<5	No flow		<5	No flow		10.0	10.0	No flow	5.00	5,00	5,00
TSS (mg/l)	<10			<10			14.8	<5		10.0	10,0	10,0
OWS 7 (jetty 2)												
pH	6.47			6.97			7.45			8.13		
Oil and grease (mg/l)	<5	No flow		<5	No flow		10.90	No flow		10.80	No flow	
TSS (mg/l)	<10			<10			5.0			10.0		

In addition, BIL conducted one round of monitoring of OWSs as per the national *Water Pollution Control Regulation 1988*, Table 11.2 standards as was requested by MoEU for environmental permitting of facilities.

Table Notes:

1. IPT 1 and CMT OWSs (except for OWS 4) were not monitored as they were not registered under environmental permit scope by MoEU.

Parameters	**EEMP Limits**	**National Limits 2h Comp)**	**National Limits (24h Comp)**	**PT 1 OWS**	**IPT 2 OWS**	**PT 2 OWS**	**PT 3 OWS**	**PT 4 OWS**	**CMT OWS 4**
mg/l				**May 12**	**Apr 12**	**Jun 12**	**Average Nov 12**	**Apr 12**	**Average Aug 12**
pH	6-9	6-9	6-9	6.70	7.08	7.50	8.175	7.84	7.97
TSS	35	60	30	< 10	<10	20.5	<10	<10	11.93
Oil and grease	10	40	20	< 5	<5	<5	<5	5.9	13.2
Sulphur	1	2	1	0.99	<0.1	<0.1	0.25	<0.1	<0.1
Phenol	N/A	2	1	0.45	<0.001	0.25	<0,001	0.58	0.071
COD	N/A	400	200	< 10.0	39.6	30.8	27.55	23.05	46.32
Total cyanide	N/A	0.5	0.2	< 0.02	<0.02	<0.02	0.025	<0.02	<0.042
Hydrocarbons	N/A	6	8	< 4.0	< 4.0	< 4.0	<4	< 4.0	5.87

Appendix 3.3d – Waste

Total Waste Volumes, 2012

All figures are in kg	Jan 12	Feb 12	Mar 12	Apr 12	May 12	Jun 12	Jul 12	Aug 12	Sep 12	Oct 12	Nov 12	Dec 12	TOTAL
PT 1 and IPT 2													
Hazardous waste disposed offsite	0	0	0	0	9,376	91	0	0	2,545	0	41	0	**12,053**
Domestic waste disposed offsite	2,025	2,330	650	1,075	1,375	875	760	620	637	970	1,500	780	**13,597**
Waste water disposed in third-party WWTP	20,000	10,000	10,000	10,000	20,000	10,000	20,000	20,000	20,000	20,000	20,000	10,000	**190,000**
Non-hazardous waste recycled	1,050	1,297	700	2,015	895	603	392	0	1,328	1,272	650	795	**10,997**
Non-hazardous waste reused	725	655	710	1,570	3,200	650	650	920	375	597	1,190	215	**11,457**
PT 2													
Hazardous waste disposed offsite	0	0	0	20	11,992	0	0	0	0	0	65	0	**12,077**
Domestic waste disposed offsite	1,780	1,980	1,201	2,290	920	970	893	1,180	893	1,498	1,362	2,050	**17,017**
Waste water disposed in third-party WWTP	10,000	10,000	10,000	20,000	10,000	10,000	10,000	0	10,000	0	10,000	0	**100,000**
Non-hazardous waste recycled	775	1,295	1,803	1,425	392	259	0	880	388	838	999	449	**9,503**
Non-hazardous waste reused	1,406	1,889	636	1,656	1,441	1,987	1,415	1,506	1,183	1,229	1,543	1,693	**17,584**
PT 3													
Hazardous waste disposed offsite	0	0	0	15,677	13,370	0	0	0	8,000	0	20	0	**37,067**
Domestic waste disposed offsite	750	1,500	1,200	1,800	750	800	550	1,200	1,450	1,350	1,250	1,800	**14,400**
Waste water disposed in third-party WWTP	0	0	20,000	10,000	30,000	0	10,000	30,000	10,000	30,000	30,000	0	**170,000**
Non-hazardous waste recycled	1,400	900	2,950	3,050	950	950	1,050	1,600	580	1,550	2,500	2,800	**20,280**
Non-hazardous waste reused	200	450	350	360	1,650	100	100	235	250	250	250	30	**4,225**
PT 4													
Hazardous waste disposed offsite	0	0	0	0	14,896	0	0	0	3,025	0	0	0	**17,921**
Domestic waste disposed offsite	800	1,350	1,000	1,000	900	1,200	1,100	1,500	1,550	1,500	1,500	1,650	**15,050**
Waste water disposed in third-party WWTP	0	0	0	10,000	10,000	0	10,000	0	20,000	78,000	17,000	17,000	**162,000**
Non-hazardous waste recycled	0	0	2,200	8,752	0	0	0	0	170	0	0	2,005	**13,127**
Non-hazardous waste reused	650	850	1,000	630	1,150	700	850	740	850	965	880	1,050	**10,315**
IPT 1													
Hazardous waste disposed offsite	0	0	67	1,070	0	0	0	0	114	8	0	0	**1,259**
Domestic waste disposed offsite	0	0	2,300	0	1,900	900	0	2,700	1,050	2,600	0	3,000	**14,450**
Waste water disposed in third-party WWTP	0	0	0	28,000	28,000	14,000	14,000	14,000	14,000	14,000	42,000	0	**168,000**
Non-hazardous waste recycled	590	180	0	570	50	280	0	725	140	90	1,462	0	**4,087**
Non-hazardous waste reused	875	530	740	855	970	835	1,100	1,255	1,120	1,005	1,125	1,245	**11,655**
CMT													
Hazardous waste disposed offsite	0	0	120	40	20	0	0	10	12,222	10,013	65	10,006	**32,496**
Domestic waste disposed offsite	8,152	3,269	13,612	0	13,939	6,455	6,686	6,490	5,240	0	6,975	0	**70,818**
Waste water disposed in third-party WWTP	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	0	10,000	**110,000**
Non-hazardous waste recycled	4,069	0	0	0	0	0	0	2,860	0	0	2,573	0	**9,502**
Non-hazardous waste reused	3,823	11,985	20,362	8,200	8,663	3,192	3,300	3,485	3,420	6,183	9,958	4,305	**86,876**

TOTAL 2012 *(in tonnes)*	
Hazardous waste disposed offsite	112.9
Domestic waste disposed offsite	145.3
Waste water disposed in third-party WWTP	900
Non-hazardous waste recycled	67.5
Non-hazardous waste reused	142.1
Incineration % for solid waste disposed offsite	24
Landfill % for solid waste disposed offsite	31
Recycle % for solid waste disposed offsite	14
Reuse % for solid waste disposed offsite	31

APPENDIX 4: STATUS OF RECOMMENDATIONS RAISED THROUGH SRAP MONITORING

Appendix 4 contains the following for the AGT regions:

- Status of key recommendations raised during previous SRAP Panel 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 Panel recommendations have been closed and countries reported readiness for the SRAP Panel completion audit. In accordance with the audit scope, each country has selected a contractor to undertake 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 report outlines performance against social commitments.

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

Table A4.1: Tracking of Recommendations from Previous Reviews

No	Date	Recommendation	Status as of end December 2012
1	Apr 2008	BTC 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 – Open (BTC and BIL Social teams are monitoring the Employment and Training Manatement Plan KPIs as part of monthly social reports)
4	Apr 2008	BTC to commission a mid-term evaluation of CIP 2 no later than Spring 2009.	Azerbaijan – Completed Georgia – Completed
5	Apr 2008	BTC to update tabulations of project affected landowners and users experiencing permanent loss of land and for each affected owner/user, to define the extent of those losses relative to his or her total landholding.	Azerbaijan – Ongoing Georgia – Completed Turkey – Completed
6	Apr 2008	BTC to undertake a survey of households affected by permanent loss of land in 2008 to verify whether each household has been able to restore its income or not. 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 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

No	Date	Recommendation	Status as of end December 2012
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
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	Landowners/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 the Rural and Urban Development Foundation (now known as 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 (BIL states that this will raise expectations. The data is shared in case of complaints or questions asked about local employees)
21	Apr 2008	BIL to train unskilled employees to take up semi-skilled jobs (Turkey only).	Turkey – Ongoing (BTC is providing vocational trainings to local people along the BTC as part of its social investment activities)
22	Apr 2008	BTC and BIL to explore and identify supply chain opportunities for local firms (Turkey only).	Turkey – Ongoing

No	Date	Recommendation	Status as of end December 2012
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 (BTC is implementing SDI projects to develop the capacity of SMEs along the BTC pipeline route- a business development centre is being established in Ceyhan to support start-up businesses and SMEs around the CMT)
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 each household has been able to restore its income or not. 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
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 – Completed Turkey – Ongoing In Turkey each project has a special strategy for AGI affected villages and marine terminal affected villages.
31	Jun 2007	BTC 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 – Completed Turkey – Completed

No	Date	Recommendation	Status as of end December 2012
35	Sep 2005	To avoid ad-hoc or piecemeal development assistance, BTC 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 SDI strategy prepared for next 5 years (2012-2016).
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 – Employee audit for all contractors is being initiated again. 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 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 Panel 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 principles
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	Status
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 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.	BTC/SRAP Panel	Condition for RAP completion	Completed

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
Reinstatement of ROW	Reinstate to pre-project conditions or better before land hand-back. Landowners/users signing of land hand-back documents does not mean that	Overall the reinstatement has been good and farmers are satisfied. There was an expectation that there would be some reduction in productivity in the first few years following reinstatement and this had been taken into account in the compensation. The land hand-back documents have been signed by almost all affected farmers. From the investigation for the completion audit, there are some areas where farmers are experiencing problems, related to issues such as irrigation and stones in the fields etc. 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.	b. BTC should retain an experienced and respected local agricultural specialist to complete a review of reinstatement of Project affected arable land. The review should have three functions: (1) to identify those farms where reinstatement is incomplete or has left constraints on cultivation; (2) to assess the value of lost production or impaired yield for the period beyond 3 years after construction completion, payable to the farmer as compensation; and (3) to recommend and monitor BTC remedial measures. 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.	BTC	Priority	Completed
Access strategy	While driving on the ROW was to be prohibited per ESAP principles, a MOC 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 BTC 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 period 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 the Lenders before developing a way forward. e. Check owner/user satisfaction with reinstatement of those sections of the access track that were reinstated. Closed	BTC	High	Completed

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
BTC Social team and CLOs	Positive community engagement is essential in not only mitigating negative impacts but also ensuring protection of the pipeline.	BTC 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. BTC Operations should maintain a strong field and Baku based Social team that can continue to work closely with the community as it evolves. Closed	BTC	Medium	Completed
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.	BTC	Medium	Completed
Chobanabdali Land Boundary Issue		Centre for Legal and Economic Education is carrying out some work on land certificate changes that 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.	BTC	Medium	Completed

Georgia

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

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
		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.	f. Develop clear principles for eligibility for top-up payments, i.e. the payments need not be extended indefinitely for farmers who decide, say, in five years time, to start using their pipeline affected land for the first time.	BTC	High (by end of July 2010)	Completed
INFRASTRUCTURE REINSTATEMENT						
Wear and tear on village infrastructure (especially roads/farm roads) caused by BTC activities	Mitigate damage caused to community infrastructure.	BTC makes regular use of some village roads and 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. BTC may potentially become a target for claims to reinstate roads it uses due to perceptions that it has resources.	g. Identify situations where the BTC use of land, village or farm roads might reasonably be linked to some obligation to contribute to maintenance - enter into a formal agreement (BTC, villages, municipality) specifying the extent of such roads, type of BTC use and roles and responsibilities (BTC vs. village vs. municipality) for ongoing maintenance.	BTC	High (by end of 2010)	Completed
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 Community Communications Plan does not explicitly address this situation.	h. Revise the Community Communications Plan to identify those villages where a translator (Armenian, Azeri) is necessary to effectively communicate with residents who do not speak Russian or Georgian.	BTC	High (by end of July 2010)	Completed
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 Community Liaison Management Plan (§ 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.	i. Appoint a third floating CLO for BTC to cover regular CLO downtime and as a potential successor if one of the CLO incumbents moves on.	BTC	High (by end of July 2010)	Completed

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 and 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 /BIL	Moderate	**CLOSED:** BTC 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 sent to the SRAP Panel earlier. There is 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 reinstatement activities carried out by BTC between 2009 and 2011. BTC's Social team conducted an internal audit in April and May 2010

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						and checked the status of complaints in all locations through the trackers. They confirmed these complaints through interviews with complainants. No outstanding land acquisition issue was observed during this audit.
Temporary land for camps (PT 1, PT 2)	Return land to owners for use to minimize impact on livelihood.	In each location where BTC was renting land for camps, there were requests from landowners to know how much longer their land would be required.	b. BIL/BTC 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/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 that will be used for the operation. BIL made payments to all landowners living in the villages. BTC 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 taskforce, it was clear that there were a significant number of complaints that had not been captured on the task force's defects list. There is a risk that the reinstatement task force will pass by leaving a significant number of unresolved reinstatement complaints.	c. BIL/BTC 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 /BIL	High (ongoing)	**CLOSED:** Another survey was conducted to identify additional complaints that were not in the list. A complete list was prepared by BTC and the scope was provided to the Contractor company. The company reinstated all areas in the pipeline route. In fact, the contractor completed many additional works as good will gestures when they were in the field.

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
PT 1 SOGUTLUKAYA						
Disputes about landownership and entitlement for rental payments	Systematically identify landowners and determine their eligibility for compensation.	There is widespread confusion amongst project affected landowners about who are the rightful owners of the land under the PT 1 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, 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 and to meet with affected landowners to clarify ownership; or, the General Directorate of Title Deed and Cadastre should be approached to resurvey the area (Given the level of confusion and bitterness on the ground, the latter option is preferable).	BTC	High (by end of 2010)	**CLOSED: The** cadastral survey 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 and, where necessary, paid rental due. Landowners who incorrectly received rental payments should not be unduly penalized.	BTC	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 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 alienated a large part of Söğütlükaya's prime grazing land for PT 1 and related works. There is limited alternative land available for lease. This has forced them to reduce their livestock herds. Others observe that active farmers are elderly. Young people are not interested in	f. BTC to obtain information on total Sogutlukaya village land resources from the Ministry of Agriculture and Rural Affairs and have a livestock expert assess the impact of the BTC project/PT 1 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	BTC	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 PT 1 site 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

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
		farming and are leaving for jobs in cities. The village population is rapidly declining. Static livestock prices and rising input costs mean returns from livestock farming are marginal. These factors also account for the villages diminishing livestock herds.	appropriate mitigation programme should be designed and implemented.			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 PT 1 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 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

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						for RAP close-out audit in 2008, where AGIs affected landowners were given priority and according the statistical results there is no significant difference in the income levels of affected and unaffected households at PT 1. Finally, BTC 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 PT 1. There were requests for water supply to be routed down an alternative stream bed upstream of PT 1. A new water pipe crossing of the BTC line was being installed by the villagers at the time of the audit.	g. BTC to monitor village concerns about water supply following completion of the new pipe installation. If warranted by continued high levels of concern, BTC to instigate regular testing of water as supplied at the village to address concerns.	BTC	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 outside the fences of PT 1. No remaining complaint regarding this issue is left. 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.

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
Sogutlukaya concerns about contamination of the livestock water supply		Villagers reported that cattle drinking from the water trough below PT 1 sometimes made their animals sick. They were concerned	h. BTC to determine whether or not there is a risk that run-off/recycled water from PT 1 is discharged into the water supplied to livestock troughs.	BTC	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's environmental contractor (Golder) has conducted 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

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
						PT 1 related discharge that would justify the community complaint.
PT 2 COGENDER VILLAGE						
Flood control	Avoid/minimize physical and economic displacement.	Following the March 2008 floods, the PT 2 access road has been raised and flood control measures installed for PT 2. No permanent measures have been designed or constructed to ameliorate flood risks and damage to up- and downstream landowners adversely affected by the BTC works. Landowners are concerned by risks and frustrated by lack of consultation and information they have received about corrective actions being taken.	i. In consultation with affected landowners, BIL/BTC to complete design and 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 to pay particular attention to ensuring that owners are consulted and kept fully informed about progress throughout the design and implementation process.	BIL/BTC	High (by end of July 2010)	i) **CLOSED:** BTC conducted several meetings at PT 2 village, Çöğender and completed the detailed design of PT 2 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 PT 2 flood permanent mitigation measures. j) **CLOSED:** Landowners participated in the site investigation on PT 2 flood permanent mitigation measures together with BTC, BIL, BOTAŞ/DSA, Gendarmerie commander. In addition, BOTAŞ/DSA informed that the expropriation of the required area for dam and main culvert construction was finalized. BIL CLOs were also involved in the consultation process. BTC monitored the potential impacts of the issue and take additional measures if the design will create any unexpected problems in future.
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 and restored with topsoil cover. The land was not properly	k. BTC to ensure that such off-ROW project affected lands are covered by the ROW Reinstatement team. The land of the 4 Cogender landowners (and any other owners who have experienced similar problems) should be restored to a fully productive condition. To the extent	BTC	High (by end of July 2010)	**CLOSED:** BTC investigated the issue. Muhtar and other villagers stated that this area was rocky and dry before the BTC project. They 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 still reinstated the land by bringing

Issue	Project Principles	Performance	Recommendations	By	Priority	Status
		reinstated. It was observed to be uneven, rocky with patchy topsoil cover leading to a stunted and uneven crop.	possible, owners should be compensated for the impaired 2009 crop.			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.	PT 2 road has historically been used by 100 Cogender households to access village cow pastures for 7 months of the year. 100-120mm dia. crushed rock used to line PT 2 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 (1500L/3 months) as a temporary solution.	l. BTC/BIL, in consultation with the Cogender farmers, to investigate permanent solution to enable farmers to resume normal access of their pasture lands. m. BTC to investigate extent of losses (calves, cost of temporary pasture) incurred by village and develop an appropriate compensation response.	BTC	High (by end of July 2010)	**CLOSED:** BTC 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 1500TL/3 months: The village Muhtar and other elders committee stated that it is the first time they heard this issue. They did not rent an alternative road to access to their fields. The villagers signed a compliant close-out letter.
						BTC has a special CIP strategy for AGI affected villages including Çöğender. BTC 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/BIL	Moderate	**CLOSED:** The list of villages where the land acquisition process is not completed is being prepared and submitted to BTC 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 even accepted to pay the legal cost of administrative tasks, transportation costs, etc from RAP fund if the multiple 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.

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
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 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/BIL	High (ongoing)	**CLOSED:** Another survey was conducted to identify additional complaints that were not in the list. A complete list was prepared by BTC 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.
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 and BIL to develop a clear strategy for productivity loss due to reinstatement problems with the use of an agricultural expert.	BTC/BIL	High	**CLOSED:** BTC identified areas that 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/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 to continue reinstatement when the roads are damaged naturally. This is an issue in some other parts of the pipeline as well. BTC cannot 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 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/BIL	Moderate	**CLOSED:** BTC and BIL PCREs went through all of the complaints in 2009 and corrected/clarified these complaints prior to reinstatement activities. BTC 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 both three-country audit and BTC 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/BIL	Moderate	**CLOSED:** BTC 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 and BIL refreshed land use restriction and third-party crossing procedures through an awareness campaign in all villages along the route. A

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
						film was produced and new 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 is more systematic approach to third-party crossings issue. In addition, BIL and BTC initiated another awareness campaign on land use restrictions and third-party crossings in 2011. Training materials were prepared by BTC (films and brochures etc.).

Issue	Project Principles	Performance	Recommendation	By	Priority	Status
CAMP IPT 1						
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/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 that will be used for the operation. BIL made payments to all landowners living in the villages. BTC 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

RELOCATION OF TREES AND SHRUBS AT RIVER CROSSINGS

As part of Environmental Impact Minimisation Actions in Azerbaijan, trees and shrubs are being relocated from ROW river crossing locations to assist in erosion control and remediation activities and to make sites safe and compliant with environmental requirements.

Prior to this approach, erosion control and remediation activities at river crossings had been carried out without consideration of relocation of trees and shrubs. Due to safety and security reasons and a lack of clear environmental guidance, trees encountered within ROW corridors were cut and removed. The Regulatory Compliance and Environment team has reviewed the environmental impact from erosion control and remediation activities and developed mitigation measures to re-locate and replant the trees and shrubs from the ROW to off-ROW locations rather than cutting and disposing of them.

The Regulatory Compliance and Environment team contacted the MENR and obtained permission and guidance for the relocation and replanting of trees and shrubs.

The MENR approved the scheme under the following conditions:

- ✓ Relocation of trees should be carried out by professional specialists;
- ✓ Ensure the participation of representatives from relevant Regional Department of Ecology and Natural Resources during relocation activities;
- ✓ Care for the relocated shrubs should be kept under the control of specialists until the end of project activities; and
- ✓ Any dead trees (if applicable) among those relocated should be replaced with new native tree species.

All these activities are carried out manually using hand labour where practicable without involvement of any heavy machinery under the abovementioned requirements. The survival rate of relocated trees and shrubs is monitored by a contractor and verified by BTC.

CASE STUDY 2

NOx OFFSET PROGRAM IMPLEMENTATION IN BTC GEORGIA

The BTC Environmental and Social Action Plan emission standard for the gas turbines at Pump Station 2 (Azerbaijan) and Pump Station 1 and 2 (Georgia) is currently set at 75mg/m3 for NOx. The turbines are unable to meet this standard all of the time as the load on the turbines is not always sufficient to allow the low NOx emission mode (SoLoNox) to become operative.

An offset programme has been implemented taking into consideration:

- ✓ The technical problems with consistently meeting the current Environmental and Social Action Plan NO_x standard;
- ✓ The negligible impact of NO_x emissions as measured by the ambient air quality monitoring programme; and
- ✓ The negative impact of additional CO_2 emissions when SoLoNox is activated.

The offset program is of a nature and size appropriate to the scale of excess NOx emissions. The programme contributes towards reducing atmospheric emissions in Georgia.

The Georgian Energy Efficiency Centre was identified by BTC for provision and development of suitable projects given their previous experience and involvement in clean and efficient energy projects. Out of the eleven projects provided by the Energy Efficiency Centre, the 3 most suitable ones were selected for implementation in Georgia.

The projects encompass the introduction of solar thermal systems, which will decrease the consumption of natural gas used for central heating and hot water supply for showers and kitchens in the:

- ✓ Public Boarding School No 203 for deaf and diminished hearing children of Tbilisi;
- ✓ Tbilisi SOS Children's Village; and
- ✓ Tbilisi "Baby House".

In 2012, 2 out of 3 projects were successfully completed. The last project, the Tbilisi "Baby House", is due for completion in 2013.

Solar systems were installed on the roof of Public Boarding School No 203 and on roofs of all the accommodation and administration buildings of the Tbilisi SOS Children's Village. Heating systems were also refurbished at both schools and the village, while shower rooms were refurbished at the school.

These 2 projects have brought significant benefits in annual cost and CO_2 reductions to both beneficiaries (US$51,958 and 223,832kgs respectively).

In addition to offsetting NOx 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.

At the same time, BTC has committed significant resources to reduce its own environmental impact and is delighted with the external response to these projects.

CASE STUDY 3

ENSURING SAFE LIFE ALONG THE PIPELINE ROUTE IN TURKEY

The 'Safe Operations' principle is a number one priority in all our practices and one of our five core values. The Social team in Turkey conducted a series of training sessions responding to issues identified during work assessments highlighting Health, Safety, Security, Environmental and Social standards. Specifically, BTC has developed and implemented an improved, comprehensive interactive awareness campaign focused on the safety aspects of land use restrictions.

BTC wants to share this important safety information through the awareness campaign to landowners and land users who are living along the pipeline route, local authorities, public institutions, state organizations implementing projects, the Gendarmerie, responsible for the security of the pipeline and schoolchildren. In this awareness campaign, tools have been diversified and customized according to target groups.

For adults, informative brochures have been distributed and a training film has been shown in community awareness meetings. The training film includes information on land use restrictions and key information on Health, Safety, Environment and Social impact management and emergency call numbers in case of suspicious situations.

For school children, special training materials have been designed such as a cartoon movie and a workbook which was prepared to deliver efficient training. In 2012, training sessions were delivered in 196 schools to 12,800 students and over 1,000 teachers.

A significant decline in land use violations has been observed since the beginning of the campaign in 2009. Training will continue every year due to the dynamic nature of the land ownership structure in Turkey and due to turn over in local administrations. BTC will ensure the sustainable delivery of the training program to all stakeholders along the BTC route through the provision of technical support to BIL Social teams, ongoing provision of effective training materials and monitoring the engagement process.