

# **Oil Spill Response Preparedness in BTC Crude Oil Pipeline Turkish Section**

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## **ABSTRACT**

BTC Crude Oil Pipeline Oil Spill Response Preparedness at Turkish Section managed by Botas International Limited (BIL) operator of the pipeline. Oil Spill Response Plan and Containment Manuals covers risk assessments and mitigation measures for the Turkish section of the pipeline and oil terminal 1,076 km in length pass thru Georgian-Turkish border to Ceyhan on Iskenderun Gulf on the coast of the Mediterranean Sea. Botas International Limited has 4 (four) Oil Spill Response Base and 1 (one) Satellite Oil Spill Response Base with fully equipped and manned for on shore and off shore spills. BIL Emergency Response Team and Oil Spill Response Contractor controls 320 containment site thru pipeline and terminal. Botas International Limited Emergency Response Teams conducts extensive Tier2-Tier3 Oil Spill Exercises to be prepared in case of oil spill.

## **1.0 INTRODUCTION**

At a length of 1,768km, the Baku Tbilisi Ceyhan (BTC) Pipeline is one of the great engineering project of the new millennium. It runs 443km through Azerbaijan, 249km through Georgia and 1,076km through Turkey to the Ceyhan Marine Terminal. The pipeline is buried along its entire length. At its highest point where it crosses the Caucasus Mountains the pipeline climbs to an altitude of 2,800m. It has a capacity to export one million barrels of oil a day, designed to meet the export requirements of the full field development of the ACG field. The BTC Pipeline facilities include eight pump stations (two in Azerbaijan, two in Georgia, four in Turkey); the Ceyhan Marine Terminal located on the Turkish Mediterranean Coast; two intermediate pigging stations; one pressure reduction station, and 101 small block valves. In Turkey, the BTC pipeline is being constructed by BOTAS on BTC Co's behalf under a lump sum turnkey agreement. BIL (Botas International Limited) is the operator of the BTC Pipeline Turkish Section.

	 AZERBAIJAN	 GEORGIA	 TURKEY	 TOTAL
Pipeline length	443km	249km	1,076km	1,768km
Pipeline diameter	42"	46"	34-46"	
Metering stations	1	1	2	4
Intermediate pigging stations	1	0	2	3
Valve stations	22	27	51	100
Pump stations	2	2	4	8
Marine terminals	0	0	1	1
Land parcels crossed (approx)	6,000	4,000	>13,000	>23,000



- ÿ The pipeline is buried along the entire route
- ÿ Pipe wall thickness is between 8.74mm and 23.80mm
- ÿ 10.4 million barrels of oil are required to fill the line
- ÿ Crude oil will take 10 days to travel from one end to the other at 1 million barrels per day
- ÿ 220,000 joints of pipe have been welded and 2 million pipe lifts have been made
- ÿ 206 million km driven (equivalent to driving more than 5,100 times around the world)

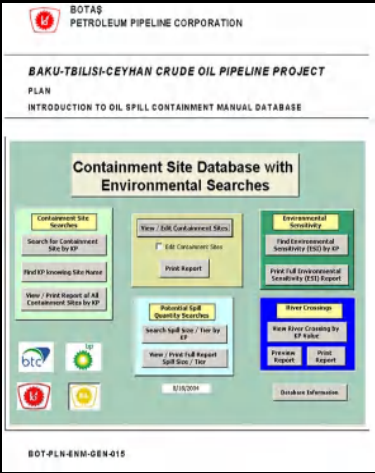
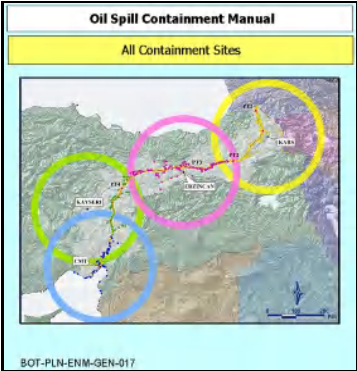



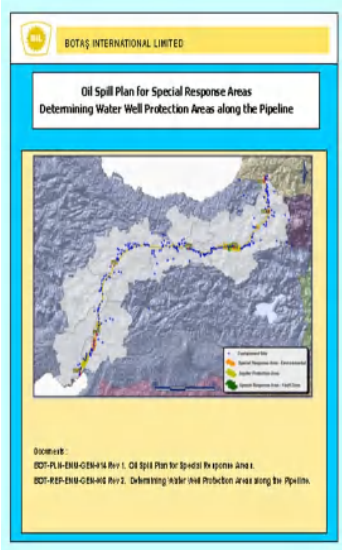

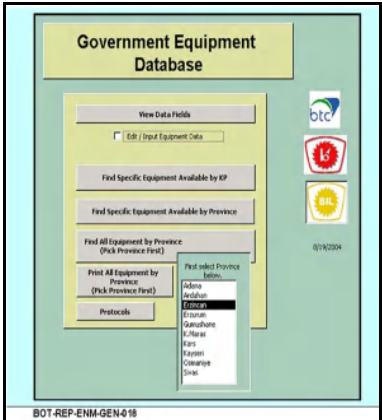
Figure 1 Baku-Tbilisi-Ceyhan Crude Oil Pipeline Route

## 2.0 OIL SPILL RESPONSE PLANNING

BOTAS Project Directorate and BIL has prepared and updated Oil Spill Response Plan, Coastal Sensitivity Atlas, Containment Database Manual, Containment Manual Data Sheets, Plan for Special Areas, Wildlife Response Plan, Wildlife Database, Government Equipment Database, Oil Spill Response Equipment Specifications, Environmental Maps, Special Areas Response Maps, Road Maps, Coastal Sensitivity Maps.

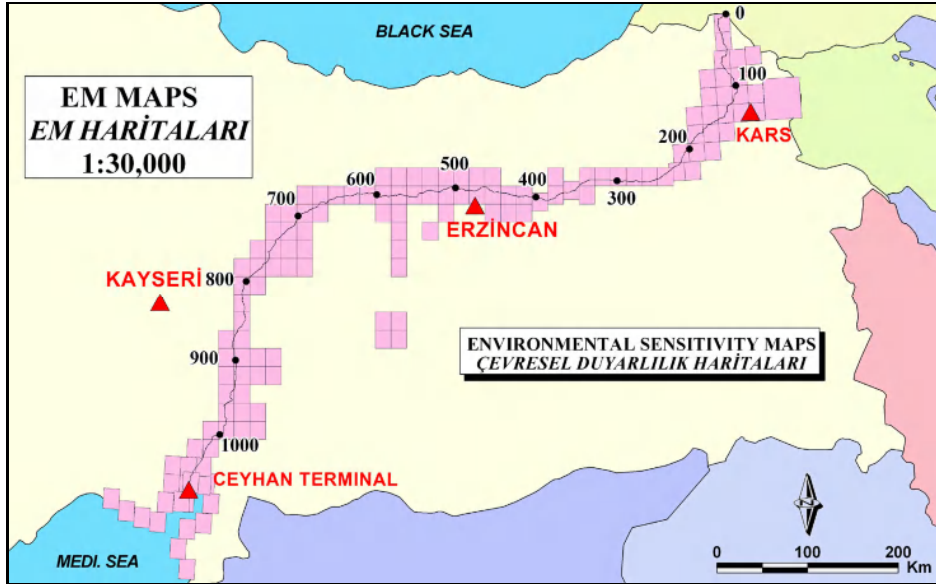
<i>Short Title and Cover</i>	<i>Document Number, Title and General Contents</i>
<p><b>Oil Spill Response Plan (OSRP)</b></p>	<p>BOT-PLN-ENM-GEN-018, BIL-PLN-OSR-GEN-001</p>
	<p><b>Oil Spill Response Plan for BIL Operations</b>            Primary Oil Spill Response Plan Document.            9 Sections, 14 Appendices</p>
<p><b>Coastal Sensitivity Atlas</b></p>	<p>BOT-REP-ENM-GEN-012</p>
	<p><b>Coastal Sensitivity Maps and Containment Manual, Iskenderun Gulf and Vicinity</b>            Marine and coastal environmental information, risk analyses, fisheries information, coastal sensitivity mapping explanation and maps.</p>

<p align="center"><b>Containment Database Manual</b></p>	<p align="center">BOT-PLN-ENM-GEN-015</p>
	<p><b>Introduction to Oil Spill Containment Database Manual</b></p> <p>Methods to maintain and update the Containment database manual, results of search queries (environmental sites, river crossings, etc.), description of environmental factors, and potential spill sizes by KP.</p>
<p align="center"><b>Containment Manual Data Sheets</b></p>	<p align="center">BOT-PLN-ENM-GEN-017</p>
	<p><b>Oil Spill Containment Database Manual</b></p> <p>All information relating to pipeline and marine containment sites, including maps, logistics, equipment and environmental information.</p>
<p align="center"><b>Oil Spill Response Equipment Specifications /</b></p>	<p align="center"><b>BOT-REP-ENM-GEN-047</b></p>
	<p><b>Oil Spill Response Equipment Specification Sheets</b></p> <p><b>Database of vendors, equipment purchases, location, and equipment specification sheets.</b></p>

<p><b>Plans for Special Areas</b></p>	<p>BOT-PLN-ENM-GEN-014 / BOT-REP-ENM-GEN-008</p>
	<p><b>Oil Spill Plan for Special Response Areas</b></p> <p>Detailed description and plans for two types of special areas: environmental and fault zones.</p> <p><b>Determining Water Well Protection Areas along the Pipeline</b></p> <p>Analysis of water well capture zones in major aquifers, and response measures.</p>
<p><b>Wildlife Response Plan</b></p>	<p>BOT-REP-ENM-GEN-026</p>
	<p><b>Wildlife Response Plan</b></p> <p>Description of measures to be taken to handle, treat and release oiled wildlife, including birds, turtles, and mammals.</p>
<p><b>Wildlife Database /</b></p>	<p>BOT-REP-ENM-GEN-017</p>
<p><b>Government Equipment Database</b></p>	<p>BOT-REP-ENM-GEN-018</p>
	<p><b>Government Equipment Database</b></p> <p>List of equipment from government national and provincial sources, with written Protocols with each agency, as well as database update/maintenance manual.</p>

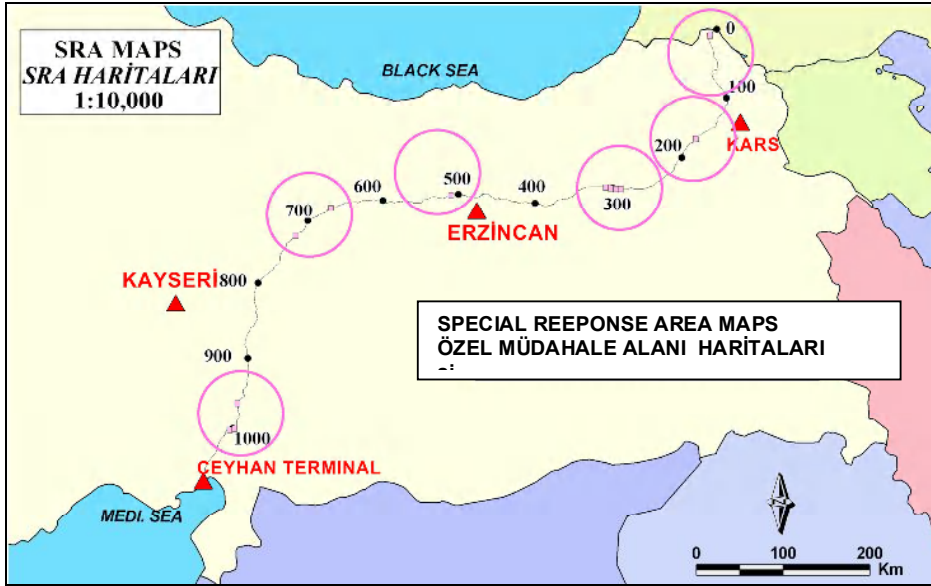


<i>Short Title and Components</i>	<i>Full Map Title, Scale and Index Map</i>
<b>EM MAPS</b>	<b>ENVIRONMENT MAPS / 1:30,000</b>



- Pipeline + KP
- Block Valves, Pump Stations, Pressure Reduction Stations
- Sensitivity Categories
- Drainage Path
- Containment Sites
- SRA Intercept Points
- Forward Holding Place
- Road Access to Containment Sites
- Forests
- National Parks
- Wildlife Protection Areas
- Ecologically Sensitive Areas (ESAs)
- Rivers, Lakes
- DSI Manned Dams
- Water Intakes
- Well Sites and Recharge Areas
- Well Capture Zones (50, 300, 4000 day)
- Land and Marine Fisheries Information
- Fish Farms

## SPECIAL RESPONSE AREA MAPS / 1:10,000



- 01 - Posof Forest
- 02 - Sarikamiş Forest
- 03 - Erzurum Fault Zone
- 04 - Erzurum Marshes
- 05 - N. Anatolian Fault
- 06 - Kuru Lake
- 07 - Alaçorak & Ulaş Lakes
- 08 - Çokak & Kızılluk Faults
- 09 - Aslantaş Reservoir

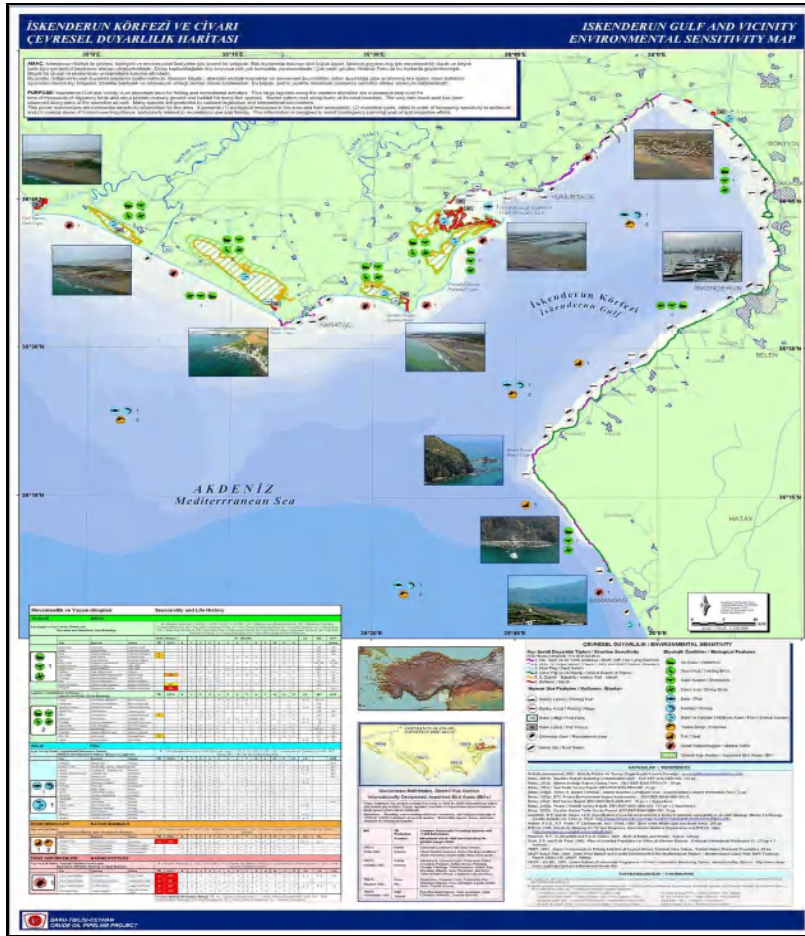
## M MAPS / RM HARİTALARI

1:200,000 and 1:140,000



# SUMMARY COASTAL SENSITIVITY MAP

1:230,000



Sensitivity Categories

Wildlife Life History / Seasonality

Important Bird Areas, Containment Sites; Rivers, Lakes, Water Intakes, Fisheries Information, Fish Farms



## 2.1 OIL SPILL CONTAINMENT DATABASE MANUAL

Botas International Limited Oil Spill Response Plan Containment Manuals covers 320 containment sites; these data sheets contain the output of the Containment Manual Database. Both Containment Sites (C-Sites) and Forward Holding Points (FHPs) are provided, organized by response depot (Kars, Erzincan, Kayseri and Ceyhan Marine Terminal (CMT). These data sheets provide guidance in responding to oil spills emanating from the BTC Pipeline and related facilities in Turkey. The database is a stand-alone computer program in Access as shown Figure 2. Background information concerning the database structure and data files are provided in Introduction to Oil Spill Containment Manual Database.

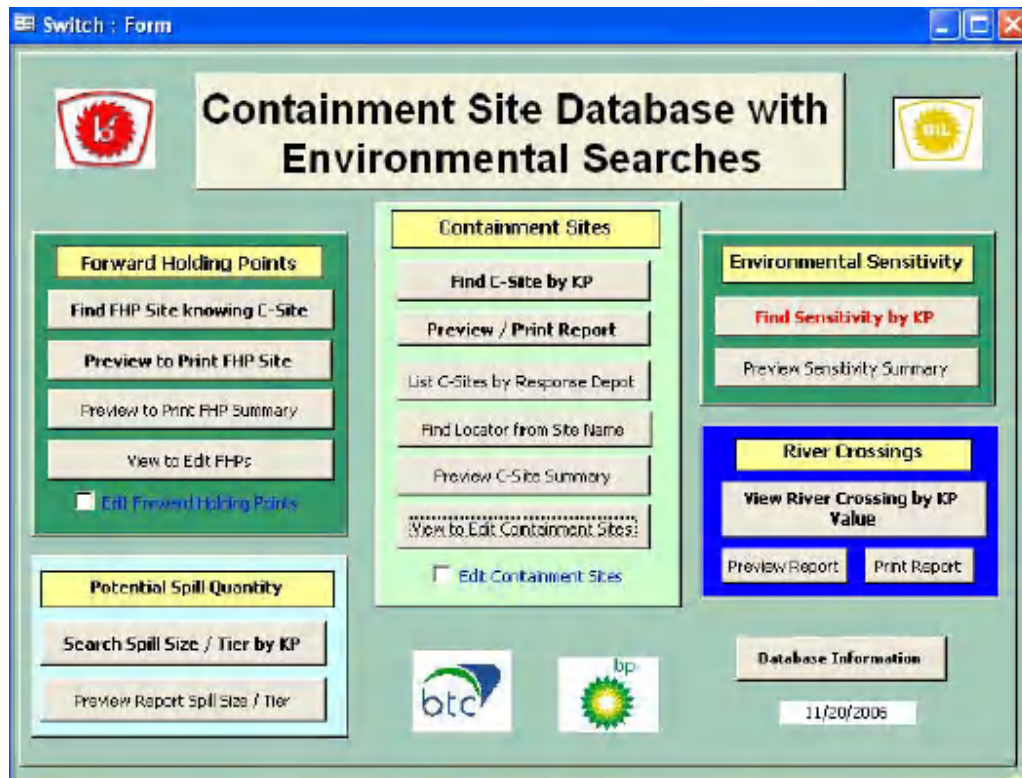


Figure 2 The database is a stand-alone computer program in Access

Any KP (Kilometer Point) where oil spill occurred can be entered to the software to find out C-Site (Containment Site) by KP

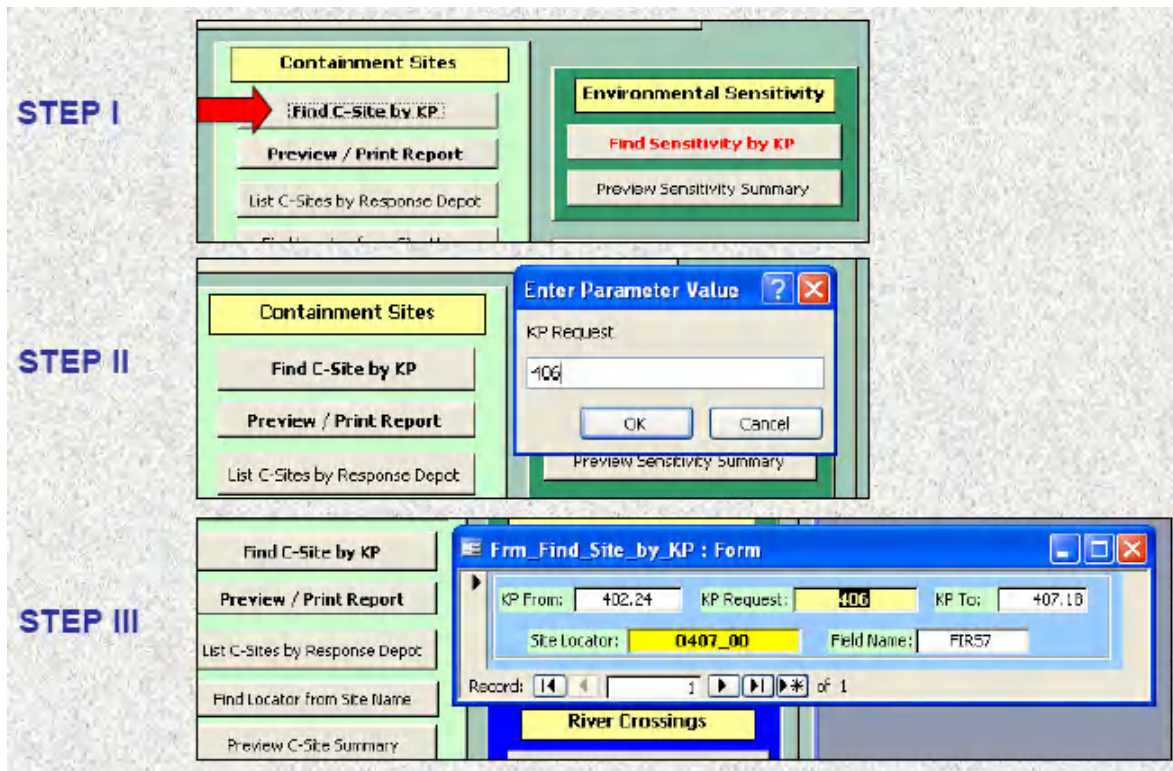


Figure 3 Preview/Print Report options available for related C-Site (Containment Site)

Downstream C-Sites: ZAM02, 01, Yedigöze / Seyhan Reservoir.

Type of Site: **Primary** Upstream: None.

Turkey: **Kayseri, Pinarbasi.**

Basin: **Zamanti (Seyhan) River.**

**Response Depot**

Primary **Kayseri**  
127 Km 2.1 Hours

Secondary **CMT**  
308 Km 5.1 Hours

**Environmental Maps**

EM#: **37AA** SR#: **0**

Road Map: **37-5-1**

**Forward Holding Point**

**0825\_W12**



Description:  
The site is where two small streams come together at bridge, with lots of work room for both streams.

Directions:

Proceed approximately 105Km to town of Pinarbasi. Continue through the town approximately 9Km to right turn (south) approximately 300 m before Zam02. Containment site is on this road approximately 12.8 Km from main hwy D300 (way point Zam03). Before arriving at the site you will first pass through the small town of Gebelik approximately 4 Km from the hwy. You will also reach a point where the road splits but do not turn; continue straight until you reach Kirkgeçit.  
Note: No Cell Phone Coverage

Access: Road is dirt from the main highway. May be difficult in wet or snowy weather, although it appears to be stable. Low overhead power and phone lines noted in town of Gebelik and possibly in Kirkgeçit.

Staging Area: Vehicles can be staged in the widened roadway just past the bridge. This area encompasses approximately 100m2. A secondary option is in the field on the opposite bank of the creek. Approximately 1000 m2 can be accessed there but vehicles will have to ford the creek. The bottom looks solid at the shallow ford just prior to the bridge (on the right).

Caution: None.

Activation:  
As the site is close to pipeline, place equipment ready for deployment and proceed up hill to spill site.

**Pipeline Crossing Information** From KP: **835.43** To KP: **843.38**  
*If no KP indicated, then this is Secondary Site for Turkey*

Rivers: X3: 841.49, 841.67.

Km (closest) site to pipeline: **1** Over moderately steep land to small stream.  
Km (furthest) site to pipeline: **9** Small stream.

PLine Access: **Directly up hill from this containment site.**

Center of Containment Site Elevation (m): **1720** **1844** Lowest Pipeline Elevation at Crossing (m)  
Crossing: E **2128** Highest Pipeline Elevation at Crossing (m)



locator: 0834\_W0

field name: ZAM03

## Karagöz River at Kirkgeçit Village.

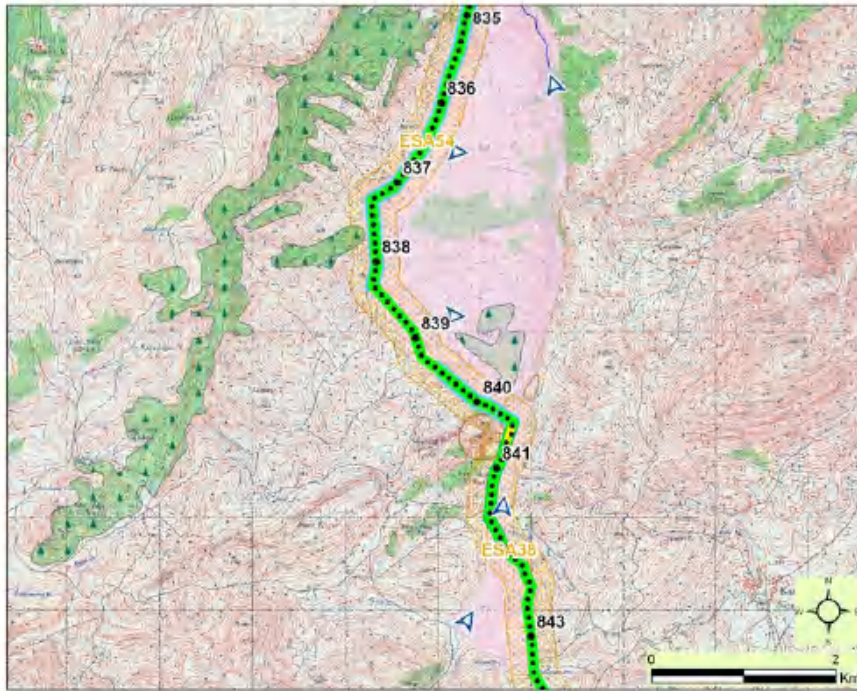
UTM	E	286912
37	N	4284439



Detailed Location Map

Map of the Pipeline Segment (for 'Primary' Stations only) with all Sensitive Features Indicated.

Note: The Containment Site for this Segment may be off the map because this map concentrates on the Pipeline.



### PIPELINE SENSITIVITY / BORU HATTI DUVARLILIGI

- 1 - Priority Farm or Grazing Land / Öncelikli Tarım Alanı ve Otlatıklar
- 2 - Karst Area / Karst Alanı
- 3 - Forest Area / Orman Alanı
- 4 - Fault Zone Special Response Area / Fay Zonu Özel Müdahale Alanı
- 5 - Wet Meadow / Islak Çayırılık Alanı
- 6 - Ecological Sensitive Area (TIE: Flora) / Ekolojik Hassas Bölge (TIE: Bitkiler)
- 7 - Aquifer Area / Akifer Alanı
- 8 - Seismic Hazard Zone (0.5-0.6 m/s<sup>2</sup> / 0.4-0.6 m/s<sup>2</sup>)

### BIOLOGICAL FEATURES / BİYOLOJİK ÖZELLİKLER

- River-NMarsh Birds / Nehir-Bataklık Kuşları
- Freshwater Fish / Taze Su Balıkları
- Important Bird Areas / Önemli Kuş Alanları
- Ecologically Sensitive Area / Ekolojik Duyarlı Bölge (TIE)
- Ecologically Sensitive Area / Ekolojik Duyarlı Bölge (No TIE)
- HUMAN USE FEATURES / İNSAN KULLANIM ÖZELLİKLERİ
- National Park / Millî Park
- RAMSAR Site / RAMSAR Alanı

### SPILL RESPONSE FEATURES / YAYILIM MÜDAHALE ÖZELLİKLERİ

- River Flow and Potential Flow Direction / Nehir Akış ve Potansiyel Akış Yöresi
- River Crossing / Nehir Geçişi
- Road Access / Yol Geçişi
- SRA Intercept Point / SRA Engelleme Noktası
- Containment Sites / Toplama Noktası
- Forward Holding Point / İleri Toplama Noktası
- Industrial Notification / Endüstriyel Bildirim
- Fault Zones / Fay Zonları
- Basin Boundary / Havza Sınırı

locator: <b>0834_W0</b>	<b>Karagöz River at Kirkgeçit Village.</b>	UTM E	286912
field name: ZAM03		37 N	4284439

<b>Cleanup Equipment and Site Laydown Area</b>		
Method: Filter fence, Weir. Shallow water, recommend underflow dam with boom and skimmers. Filter fencing on the far side.		
<b>Boom (Number x Length) : Survey Conditions</b>	<b>Skimmer (Number) : Survey Conditions</b>	
12 inch Boom: 2x30m	Small Brush Skimmer: 1	
18 inch Boom: 0	Disc Skimmer: 1	
Shoreseal Boom: 5x5m	Mini Fast Flow Skimmer:	
Inflatable Boom: 0	Skimmer Head on VacTruck:	
Sorbent Boom: 0		
<b>Max Flow</b>		
Fastwater (m): 30		
Shoreseal (m): 0		
Boom Comments: None.	Skimmer Comments: Small Weir	
<b>Site Laydown Area:</b> Area (m2): 1,000 Description (below): Small laydown area available on moderately sloped near shore. Considerably larger flat laydown area available on far shore but must ford shallow creek to access. No other restrictions noted.		
<b>Other Equipment (Number Required):</b>		
0 Anchor System (line, chain, buoy, etc)	1 Portable Toilets	
0 Line Thrower	10 Handtools: Shovels, Rakes, etc.	
5 Filter fence	1 Light Tower	
100 Sand Bags	1 Bird Wildlife Hazing Kit	
0 Weir Kits	0 Portable Bridge	
1 Wood Board Sets for Damming	0 Trackway Rolls	
0 Shallow Water Paravane	0 Chain Saw	
1 Diaphragm Pump with Hoses + Fittings	0 Ice Auger	
1 Centrifugal Pump with Hoses + Fittings	0 Joker Boat	
2 Fuel Cans with Fuel	0 7m Aluminium Boat with Motor	
0 High Rate Transfer Pump	0 4m Aluminium Boat with Motor	
1 Initial Response Pallet	0 Aluminium Barge Set	
5 Sorbent Sweep	0 Open Response Trailer	
5 Sorbent Roll	1 ATV	
5 Loose Sorbent:	1 8x8_Vehicle	
2 Waste_Bin	1 Vacuum Module	
2 Wheelbarrow:	0 Accommodation Module	
4 Portable Decon Tank	1 Flat Bed Module	
1 Backpack Air Blower	1 6x6 Vehicle	
1 Steam Cleaner	0 BV206	
1 Pressure Washer	0 BV206 with Hook Crane	
1 Sun Awning	0 BV206 with Accommodation Module	
1 Work Tent with Tables + Chairs	0 Excavator From Others	
1 Portable 20kv Generator	0 OSRV	
<b>Storage (Units Required):</b> Type and Comments (below): Estimated Volume Needed (m3):		
8 Portable Tanks	Fastanks, Pits.	
4 Metal Drums		
yes Pit liners		



locator: <b>0834_W0</b>	<b>Karagöz River at Kirkgeçit Village.</b>	UTM	E	286912
field name: <b>ZAM03</b>		37	N	4284439

<b>River Conditions</b>	River Width (m): <b>6</b>	<b>Summer</b>	<b>14</b>	<b>Maximum</b>	<b>Bank Condition</b>
	River Depth (m): <b>0.2</b>	<b>Flow</b>	<b>1</b>	<b>Flow</b>	
	Flow Velocity (m/s): <b>0.2</b>		<b>0.8</b>		<b>1 m or less, gentle slope.</b>

**ENVIRONMENTAL SENSITIVITY - Pipeline Corridor**      From KP: 835.43      To KP: 843.38

Highest ESI Present: **8**      At KP: **840.50**      to KP: **840.72**      *Listed for "Primary" C-Sites only.*

Lower ESI's Present:  
**6** throughout, **5** = 840.45 - 841.83, **4** = 837.08-841.1, **842.2**, **3** = 835.31-838.3, **839.45- 840.47.**  
 Biological Features:  
**ESA #54** from 835.31 to 840.35, **ESA #38** from 840.36 to 843.38. **Adjacent forests for most of the segment until 840.47.**  
 Human Use Features:  
**Archaeology in the corridor from 840.5 to 840.72 and S and W of corridor: 840 - 840.9.**

ESI CATEGORIES 1=farm/grazing, 2 = Karst, 3=Forest, 4=Fault Zone, 5=Wet Meadow, 6=Ecologically Sensitive Area, 7=Aquifer, 8=Archaeology, 9=Ecological Special Response Area, 10=River/Lake Crossing. x=secondary site.

**Containment Site Environment**

Site Environment:	Small stream in gravel stream bed with adjacent grassland.	
Archaeology and Cultural:	None evident, high caution level during site work because identified major archaeological site is located within 5 km.	
Land Use:	Probable grazing (in village).	
Industry:	None.	Wildlife Zone: Central
Ownership:	Unknown.	

Percent Cover: Trees: 0      Shrubs: 0      Grass: 90      Livestock ? Yes      Good Drainage? Yes  
 Site Sediments: **Mixed Sand / Gravel.**      Wildlife Observed: **Birds.**

**Down Stream Environments**

Aquaculture Facility is 5 km downstream, then Zamanti River.

<b>ENTRY INFORMATION</b>	Entry Person: <b>BULENT YALÇINDAG</b>	Entry Date: <b>1/9/2004</b>
Last Update: <b>4/15/2005</b>	Changes Made (below):	
Includes updates from field surveys from each depot.Major format changes made to tables and reports.		





Access road to site 2/24/2006



Pipe line 2/24/2006



River and bridge. 2/24/2006



Pipe line crossing the river 2/24/2006



View of the village from bridge. 2/24/2006

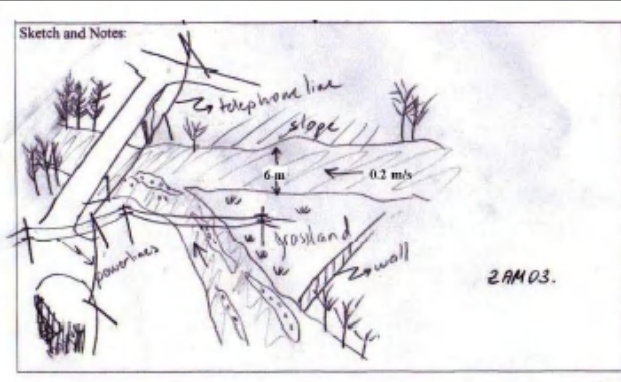


Figure 4 Sample C-Site (Containment Site) Report for Spill Location

Explanation of the terminology for the C-Site report given as follows;

**Locator:** Site location based on closest KP direction and distance from the pipeline.

**Field (Site) Name:** Turkey uses a 3 letter designator which relates to the drainage basin; e.g. ARA = Aras River, FIR = Fırat River, with a number.

**Zone:** Turkey has three zones, 36, 37 and 38.

**Easting, Northing:** GPS easting(X) and northing(Y) coordinates of the site.

**Downstream Containment Sites:** Containment sites downstream of the site being described. If it ends in a dam / reservoir, or crosses an international boundary, this is noted as well.

**Upstream Containment Sites:** Containment sites upstream of the site being described. All secondary sites have one or more upstream sites. All primary sites have no upstream sites for the segment listed (as there is a direct connection with the pipeline).

**Type of Site:** Primary or Secondary. A primary site is the Containment Site to be activated for a particular segment. A secondary site is most commonly downstream of the primary site and would be activated if spilled oil passes the primary site.

**Response Depot:** Area covered by the response depot at Kars, Erzincan, Kayseri or Ceyhan.

**Maps:** Environmental, Special Response Area, Road maps numbers are showing the containment site.

**FHP Site:** Forward Holding Point for this containment site.

**Site Description:** General description of the Containment Site work area.

**Directions:** Directions to the site from the designated response depot. River Conditions: River width(m) and depth(m) values for summer and maximum flow conditions.

**Bank Condition:** Information about the river bank.

Highest ESI in Segment: The highest Environmental Sensitivity Index value within the segment,

ESI CATEGORIES

1=Farm/Grazing,

2=Karst,

3=Forest,

4=Fault Zone,

5=Wet Meadow,

6=Ecologically Sensitive Area,

7=Aquifer,

8=Archaeology,

9=Ecological Special Response Area,

10=River/Lake Crossing.

**Biological Features:** Description of key bio features found along the pipeline.

**Human Use Features:** Description of major cultural and human use features along the pipeline.

**Site Environment:** Description of the site, focusing on environmental characteristics, including whether a town or village is nearby.

**Archeology and Cultural:** Description of evidence of possible historic or archaeological feature at the site.

**Land Use:** Farming and / or grazing present.

**Industry:** Whether industry is present at the site or not. Gravel extraction is most common.

**Ownership:** Owner of land if known.

**Wildlife Zone:** Wildlife (birds, fish, insects, mammals, etc.) that were observed.

**Method:** Cleanup method for this Containment Site (equipment type, quantity, etc).

**Site Laydown Area (m2):** Approximate size of the work area at the site (10,000 m<sup>3</sup> is used as the largest site).

**Other Equipment (Number Required):** Information on other equipments that will be used during the cleanup activities.

**Storage (Units Required):** Type of storage to be potentially used.

**Comments:** Comments on boom, skimmer, or other equipment required.



### 3.0 OIL SPILL RESPONSE LOGISTICS

Botas International Limited has 4 (four) Oil Spill Response Base at Kars (figure 6), Erzincan (figure 7), Kayseri (figure 8) and Ceyhan (figure 9). Satellite base at Ceyhan for rapid deployment has been installed. BIL contracted Oil Spill Response Services and 68 contractor staff are present thru Oil Spill Response Bases.



Figure 5 Response Areas for each Oil Spill Response Base



#### Kars Oil Spill Response Base



Figure 6 Kars Oil Spill Response Base





## Erzincan Oil Spill Response Base



Figure 7 Erzincan Oil Spill Response Base



## Kayseri Oil Spill Response Base



Figure 8 Kayseri Oil Spill Response Base



## Ceyhan Oil Spill Response Base

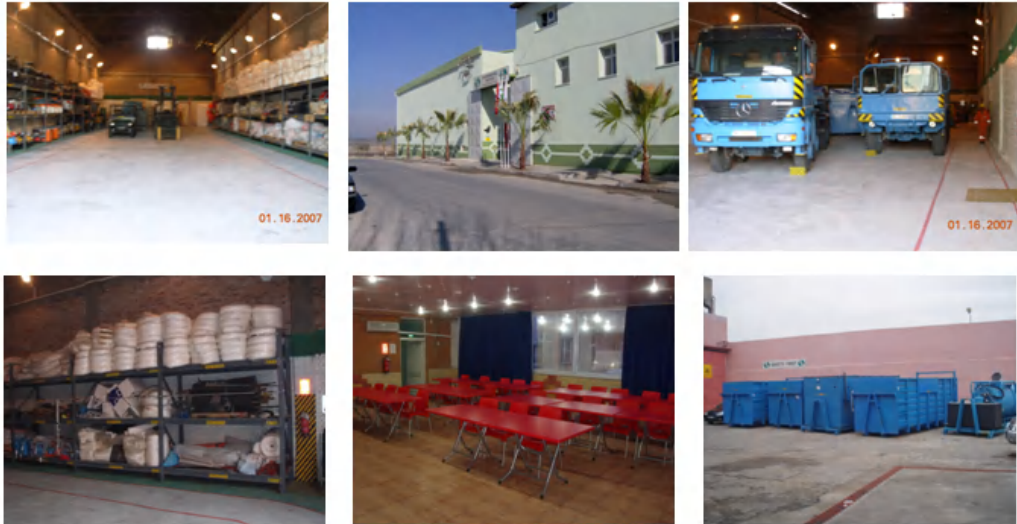


Figure 9 Ceyhan Oil Spill Response Base



## New CMT Satellite Base

**Satellite Base has been established in 2006, will provide immediate response for off shore spill**

### **New CMT Satellite Base Storage Inventory**

- 4 storage barges
- 2 Alluminum boat
- Lamor self propelled skimmer boat
- 1000 mt Vikoma Hi sprint 1500 ocean boom
- 2 20 ft container
- 40 ft container
- Various type and capacity skimmers



Figure 10 Satellite Oil Spill Response Base at Ceyhan Marine Terminal

### Oil Spill Response Time Requirement for on shore spill.

Activity	Spill Volume Planning Guideline <sup>note 1</sup>	Response Time Planning Guideline	Cumulative Response Time Planning Guideline
Notification		0	0
Mobilization of staff to Response Base		2	2
Departure from Response Base with appropriate initial response EQUIPMENT		2	4
Travel time to spill site		4	8
Deployment of initial Response Resources at single Containment site	520 m <sup>3</sup>	4	12
Full Tier 2 Capability in place at 2 containment sites using EQUIPMENT and resources from two or more first response bases	2986 m <sup>3</sup>	12	24

### Oil Spill Response Time Requirement for off shore\* spill.

Activity	Spill Volume Planning Guideline <sup>Note 1</sup>	Response Time Planning Guideline	Cumulative Response Time Planning Guideline
Notification		0	0
Mobilization of staff to CMT Response Base		2	2
Transfer of Oil Spill EQUIPMENT from CMT first response base to Marina		2	4
Loading of Boats		2	6
Travel time to containment site / area of spill		2	8
Deployment of initial Response Resources at single Containment site	350 m <sup>3</sup>	4	12
Full Tier 2 Capability in place at 2 containment sites using EQUIPMENT and resources from two or more first response bases	2000 m <sup>3</sup>	12	24

\* Installation of Ceyhan Oil Terminal Satellite Oil Spill Response Base Response Time has been shortened considerably.



#### 4.0 OIL SPILL PREPAREDNESS

Botas International Limited conducts at least 6 (six) Tier2 Oil Spill Drill and 1 (one) Tier3 Oil Spill Drill yearly. Oil Spill Drills and lessons learned from each spill improve our readiness. BIL organized 8 Alpha (Tier 2) Oil Spill Drill in year 2006.



Figure 11 Tier 2 Oil spill drill examples

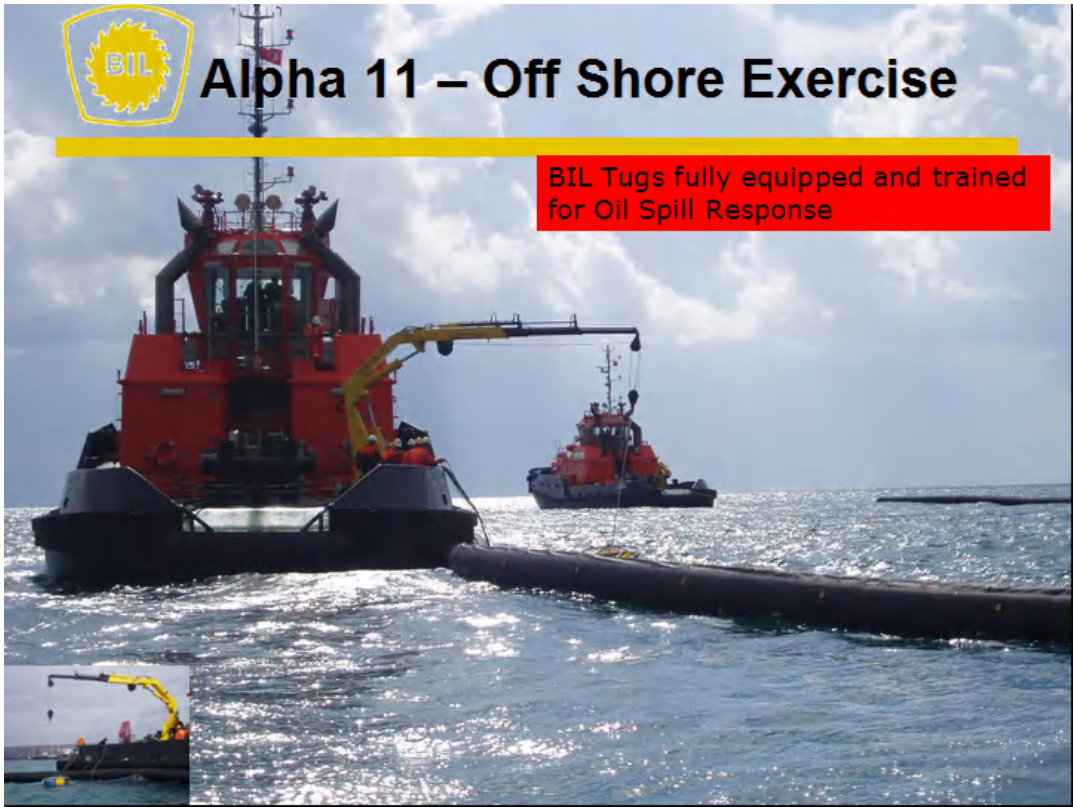


Figure 12 A view from Alpha 11 – Off shore oil spill exercises at Iskenderun Bay



BIL follow Incident Command System (ICS) and has following structure. All Tier 2 and Tier 3 oil spills will be managed by BIL ICS.

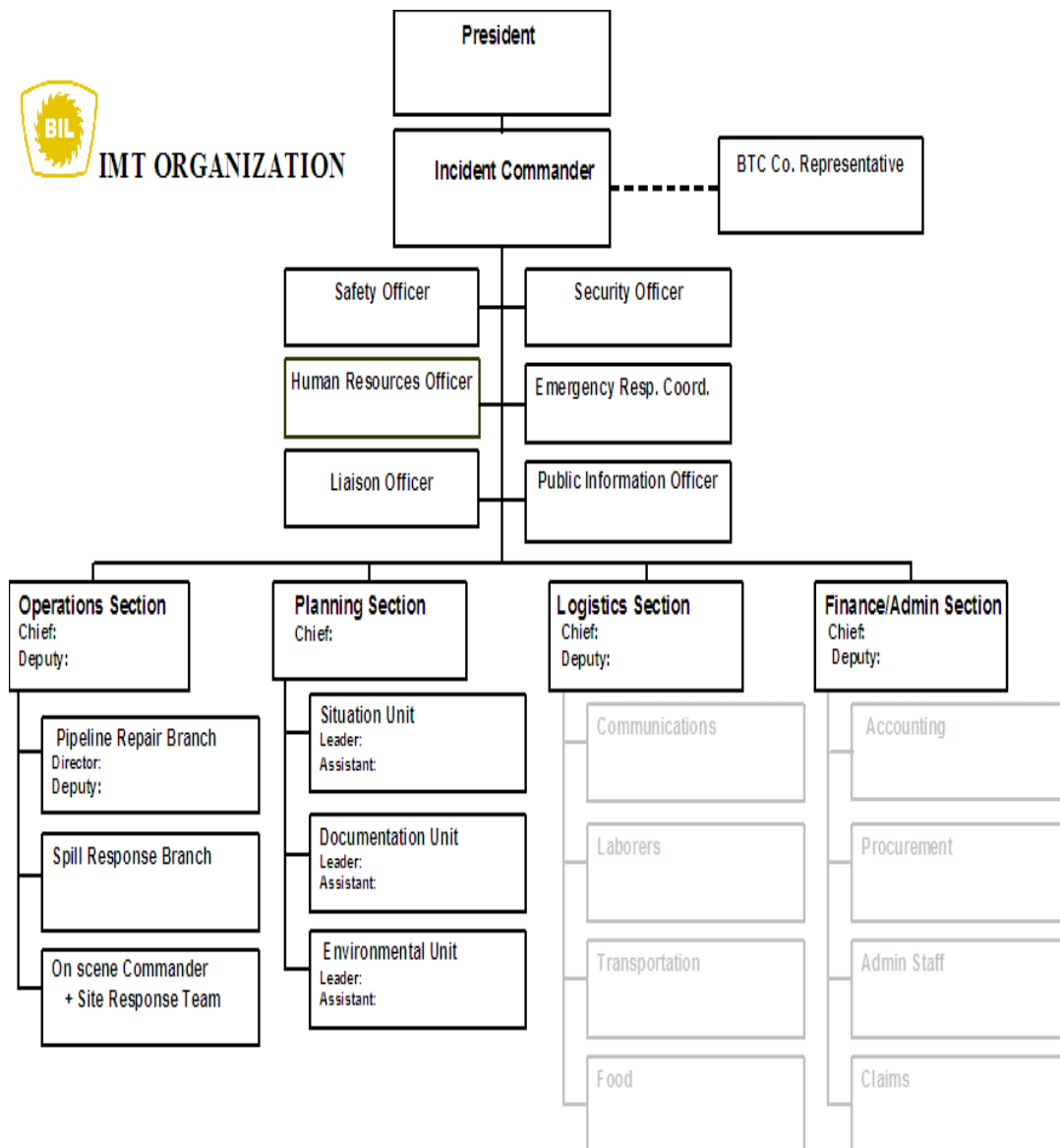


Figure 13 BIL Incident Command System Structure

## **5.0 CONCLUSIONS**

Botas International Limited (BIL) provides World class oil spill response capability for the Turkish section of BTC Crude Oil Pipeline, required by BTC Co. (the client). The high standards of this project requires extensive manpower, skills and equipments. The HSE Department coordinates and manages all aspects of oil spills including environmental, safety and crisis management.

Oil spill response preparedness in BIL shows that any oil spill in Turkey section of the BTC Pipeline can be responded effectively, so that no significant impact on the environment will be left.