

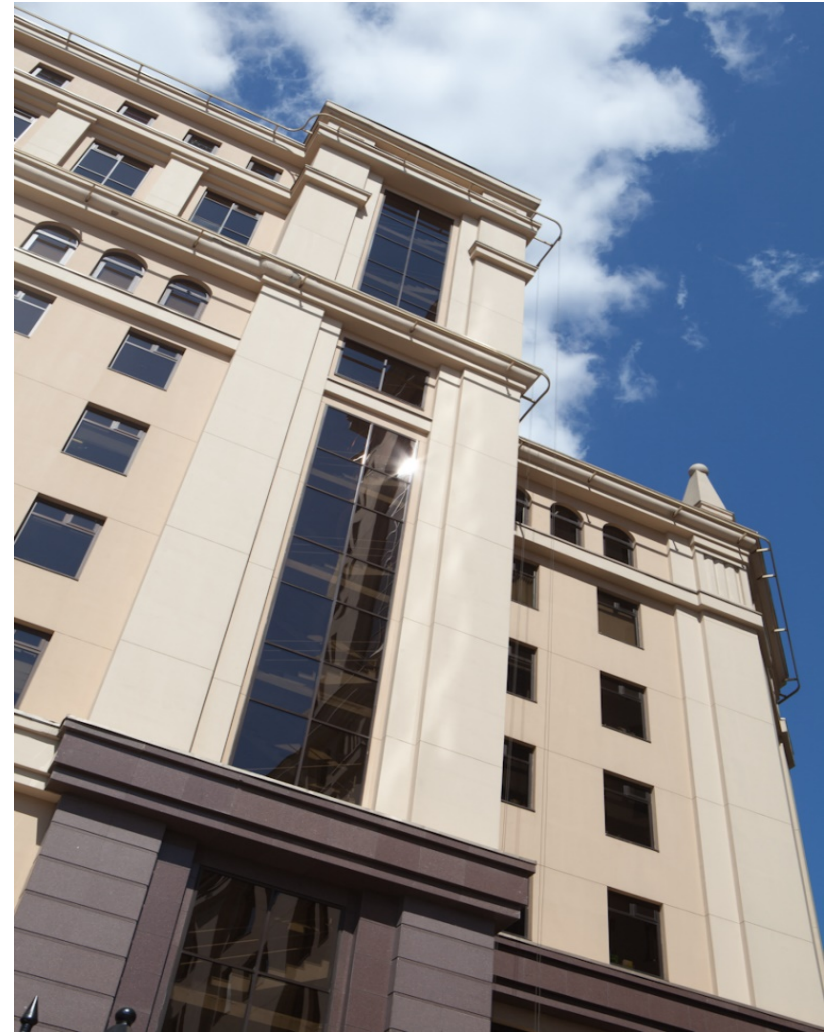


# ENKA IN KAZAKHSTAN

# INTRODUCING **ENKA**

## 64 years of engineering & construction experience worldwide

- More than 544 projects in 46 countries, with a historical contract value of US\$ 51 billion
- Employs more than 20,000 personnel worldwide
- Among the world's top contractors since 1981 (Engineering News-Record (ENR))
- 2020 Annual Revenue, comprising the revenues of following business lines corresponding to USD 1.7 billion
  - Engineering & Construction
  - Power
  - Real Estate
  - Trade
- Traded publicly in Borsa Istanbul (BIST) with a Market Cap of US\$ 5 billion.
- 64 subsidiaries operating in America, Asia, Europe, Africa and Middle East
- Signatory to UN Global Compact

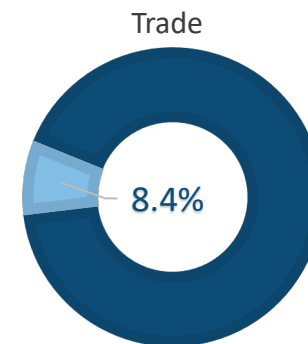
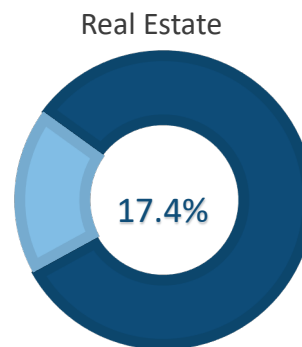
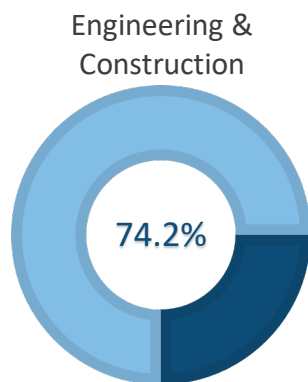


# TURNOVER RECORDS

Note: All amounts are annual figures in million US Dollars

Year	ENKA Group Turnover	"Engineering & Construction only" Turnover	Share of onshore oil, gas, chemicals, and power projects in "Engineering & Construction only" turnover	
			(%)	Total
2015	4,555	1,492	71.9%	1,073
2016	3,506	1,453	68.0%	988
2017	2,900	1,195	59.3%	708
2018	2,881	1,011	64.2%	650
2019	1,893	1,147	70.0%	803
2020	1,659	1,263	61.0%	767

## TURNOVER DISTRIBUTION



# RESOURCES – HUMAN RESOURCES

Entity	Technical Staff	Administrative Staff	Craft	Total
<b>ENKA Istanbul Headquarters</b>	> 388	> 129	>71	<b>&gt; 588</b>
<b>ENKA Subsidiaries in Turkey</b>	> 782	> 423	> 1,851	<b>&gt; 3,056</b>
<b>ENKA Construction Abroad</b>	> 1,603	> 1,398	> 12,196	<b>&gt; 15,197</b>
<b>ENKA Construction Subsidiaries Abroad</b>	> 109	> 49	> 328	<b>&gt; 486</b>
<b>Total</b>	<b>&gt; 2,882</b>	<b>&gt; 1,999</b>	<b>&gt; 14,446</b>	<b>&gt; 19,327</b>

ENKA personnel on direct payroll varied between 15,000 and 41,000 during the last 10 years, and currently amounts to about 20,000.

The management, engineering, construction supervision and administrative staff are predominantly of Turkish origin, supplemented with local nationals directly hired in countries of operation.

Craft Labor is sourced depending on the geographic location and specific requirements of each project. Typically all foremen and majority of skilled technicians are of Turkish origin deployed from ENKA's own labor database, whereas the craft labor below foremen-technician level is hired locally to the maximum possible extent. If local labor is not available, ENKA imports foreign craft labor from Asia.

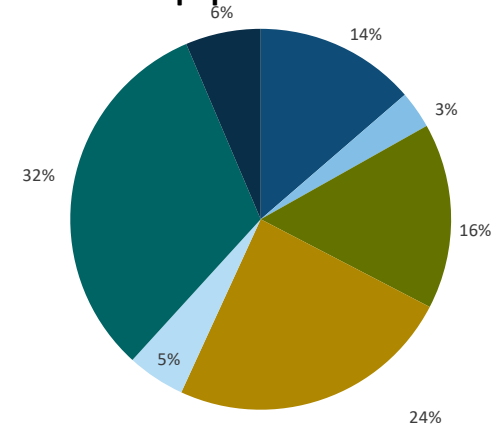
In-House Design Engineering Resources	Entity	Discipline	Number of Engineers
	ENKA İNŞAAT	Engineering- Civil, Structural, Infrastructure, Energy	129
	ENKA İNŞAAT	Engineering- Architectural	63
	ÇİMTAŞ	Piping & Mechanical	20
	KASKTAŞ	Geotechnical, Foundation Engineering	9
	ENKA POWER	Process, I&C, E&I	24
	<b>ENKA GROUP</b>	<b>TOTAL</b>	<b>250</b>

# RESOURCES – MACHINERY & EQUIPMENT

ENKA owns a construction machinery & equipment fleet consisting of about 4,100 pieces, valued over US\$ 310 Million; 20 vessels marine fleet worth of US\$ 15 Million on the Caspian Sea and Nassau, the Bahamas, and 800,000 m<sup>2</sup> of site facilities (shops, camps, warehouses, offices) mobilized in different countries where fabrication and construction works are being performed.



**% of Construction Machinery & Equipment Fleet**



- LIFTING AND CONVEYING EQUIPMENT
- CONCRETE PRODUCTION AND MATERIAL PREPARATION
- EARTH MOVING MACHINES
- MOTOR VEHICLES, TRAILERS AND PRIME MOVERS
- HIGHWAY BUILDING AND RAILROAD SUPERSTRUCTURES
- EQUIPMENT FOR ENERGY GENERATION AND DISTRIBUTION
- OTHER MACHINERY, FACILITIES FOR CONSTRUCTION SITES

# ENGINEERING & CONSTRUCTION

ENKA provides full range of design and engineering, procurement, in-house fabrication, modularization construction, commissioning and start-up, operation and maintenance, and project management services (EPCC, EPC, PC or C only) in the following sectors:

- Oil, Gas and Petrochemicals
- Power Plants
- Infrastructural Works
- Building Works



Oil, Gas and Petrochemicals



Power Plants



Infrastructural Works



Building Works

# ENKA IN KAZAKHSTAN

Project	Location	Country	Client	Commence Date	Completion Date	Contract Price	Highlights
Train 5 Project	Tengiz	Kazakhstan	Tengizchevroil LLP	1997	2000	\$562,070,000	Additions to Tengiz Oil Processing Facilities
Second Generation Plant Project	Tengiz	Kazakhstan	Tengizchevroil LLP	2003	2008	\$588,000,000	World's largest single-train sour crude processing facility
Sour Gas Injection Project	Tengiz	Kazakhstan	Tengizchevroil LLP	2003	2006	\$77,000,000	Newly introduced re-injection technology (depth 7 km)
Crude Shipment Capacity Project	Tengiz	Kazakhstan	Tengizchevroil LLP	2014	2019	\$440,000,000	Addition to storage and pumping capacity in the Tengiz Crude Tank Farm
FGP Multi Well Pads Civil Installation Project	Tengiz	Kazakhstan	Tengizchevroil LLP	2015	2019	\$104,500,000	Development undertaking and expansion of existing facilities
Core Substation ME&I Installation	Tengiz	Kazakhstan	Tengizchevroil LLP	2017	2019	\$49,000,000	Part of Future Growth Project – Wellhead Pressure Management Project
3GI Civils and Underground Services	Tengiz	Kazakhstan	Tengizchevroil LLP	2017	2019	\$118,500,000	Civil and Underground Services Works on 3rd Generation Injection (3GI) Plant facilities
FGP 3GP Mechanical, Electrical & Instrumentation Installation Works	Tengiz	Kazakhstan	Tengizchevroil LLP	2018	2022	Confidential	Mechanical, Electrical & Instrumentation Installation Works
Oil Field Development of Caspian Sea – Offshore and Onshore Civil Works	Caspian Sea	Kazakhstan	AGIP KCO - Agip Kazakhstan North Caspian Operating Company NV	1998	2017	\$2,000,000,000	Various Onshore Civil Works Contracts (1998-2017) Offshore Civil Works Contracts: <ul style="list-style-type: none"> <li>• 2000-278: Offshore Civil Works ( 2001-2004)</li> <li>• 2004-1372 Offshore Civil Works (2005-2012)</li> <li>• Pipeline Replacement Project (2015-2016)</li> <li>• EPC-3 Topsides Works (2016-2017)</li> </ul>
FGP-CaTro Channel Works	Prova	Kazakhstan	TenizService LLP / Chevron	2014	2018	\$103,400,000	Onshore and Offshore Civil Works
Aktau Port Rehabilitation	Aktau	Kazakhstan	Aktau Commercial Sea Port	1997	1999	\$49,300,000	Kazakhstan's main port on the Caspian Sea
Koktenkol Molybdenum Project	Koktenkol	Kazakhstan	Dala Mining LLP	2012	2013	\$1,192,424	Front End Engineering Design (FEED) for 20 mtpa capacity Mining Facility
Esentai Park Complex	Almaty	Kazakhstan	KUSA KKB-2 LLP	2006	2014	\$652,847,432	Business Centers & High Rises
Esentai Park Complex - Shopping Mall, Phase I	Almaty	Kazakhstan	CP Retail Almaty Company	2006	2009	\$18,844,218	Malls & Shopping Centers

# TRAIN 5 PROJECT – KAZAKHSTAN



- **Location:** Tengiz - Kazakhstan
- **Client:** Tengizchevroil (TCO - a Joint Venture between Chevron, ExxonMobil, LukArco and KazMunayGas)
- **Construction Period:** June 1997- August 2000
- **Project Value:** US\$ 562 Million
- **Project Description:**

The Train 5 project entailed the construction of a process group with an annual capacity of 2,5 million tons. The project contributed to the increase in the crude oil production capacity to 12 million tons of sweet crude per year as forecast in Tengizchevroil's 5-year business plan.

The project involved the engineering, supply of equipment and materials, and construction of the processing unit for crude separation, desalting, condensate stripping, H2S removal and NGL recovery.

The auxiliary units, built in addition to the main processing units, were a 2×40 MW gas turbine generator station, a 110 KV switchyard power management system, a high-pressure boiler plant, a nitrogen unit and a 100 ton/hour water treatment plant.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Earth Works	40,000	m <sup>3</sup>				N/A	
Concrete	28,000	m <sup>3</sup>					
Structural Steel	4,800	ton					
Piping	150,000	ton					
Cabling	600,000	lm				N/A	
Equipment	277	ea					
Piling Driven	9,000	ea				N/A	

	Not by ENKA
	Partially by ENKA
	Fully by ENKA



# SECOND GENERATION PLANT PROJECT – KAZAKHSTAN



- **Location:** Tengiz - Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, & LukArco)
- **Construction Period:** December 2003 – November 2008
- **Project Value:** US\$ 588 Million
- **Project Description:**

The main component of the Tengizchevroil's Asset Development Project, the Second Generation Plant Project, one of the largest and most complex projects undertaken in the oil & gas industry, was to expand the crude oil production capacity of the Tengiz field by 12 mtpa and significantly increase the production of associated dry gas, propane, butane and saleable sulfur products. Major new surface facilities included crude stabilization, gas processing and sulfur recovery plants, together with all required utilities including a major power generation and power distribution facility.

ENKA and Bechtel successfully carried out the two main multi-discipline construction components for the Second Generation Plant Project under a single contract in Tengiz, including civil, structural, mechanical, piping fabrication and installation, electrical, instrumentation, insulation, painting and building works.

ENKA and Bechtel also undertook the site preparation and early civil work, and construction of site's temporary facilities, under separate early work contracts, prior to the awarding of the main SGP construction contract.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Concrete	96,000	m <sup>3</sup>					
Structural Steel	31,000	ton					
Piping Prefabrication & Erection	12,000	ton					
Cabling Laying Works	2,600,000	lm				N/A	
Mechanical Equipment	1,300	ea					
Instrument	57,000	ea				N/A	

Not by ENKA
Partially by ENKA
Fully by ENKA

# SOUR GAS INJECTION PROJECT – KAZAKHSTAN



- **Location:** Tengiz - Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, & LukArco)
- **Construction Period:** November 2003 - November 2006
- **Project Value:** US\$ 77 Million
- **Project Description:**

The Sour Gas Injection Project was one of the two main components of Tengizchevroil's Asset Development Project, a world-scale program to significantly expand the crude oil production capacity of the Tengiz field. The SGI Project utilized state-of-the-art gas injection technology to enhance oil recovery and maintain reservoir pressure by re-injecting previously produced sour gas back into the reservoir. Major new facilities included a Sour Gas Injection Plant and eight Injection Wells with associated equipment and facilities. The SGI Project was divided into two stages:

**Stage 1:** Inject sweet gas from the processing facilities into the reservoir to test the operation of the compressor and validate the predicted response of the reservoir.

**Stage 2:** Expand the installation, permitting injection of high pressure sour gas from Second Generation Plant. ENKA, together with Bechtel installed the compression and associated piping systems capable of safely and reliably delivering sour gas, into the 7,000 m deep reservoir at 10,000 PSI.

ENKA and Bechtel successfully undertook multi-discipline work under six separate contracts, in accordance with the client's contracting strategy, inclusive of site preparation, piling, civil, structural, mechanical, electrical, instrumentation and building work. They also successfully carried out turnaround work to convert the sweet gas injecting plant into an operational plant working with sour gas.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Piling	2,500	ea					
Concrete	24,000	m <sup>3</sup>					
Structural Steel	2,400	ton					
Piping Prefabr. & Erection	2,000	ton					
Heavy Wall Welding	3,400	dia					
Mechanical Equipment	450	ea					
Cabling Laying Works	500,000	m				N/A	
Instrument	3,600	ea				N/A	

	Not by ENKA
	Partially by ENKA
	Fully by ENKA

# CRUDE SHIPMENT CAPACITY PROJECT – KAZAKHSTAN



- **Location:** Tengiz - Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, & LukArco)
- **Construction Period:** July 2014 – December 2019
- **Project Value:** US\$ 440 Million
- **Project Description:**

The Crude Shipment Capacity Project, which had commenced in July 2014, encompassed engineering, procurement and construction activities which were required to provide the Tengizchevroil's existing Crude Tank Farm with additional storage and export capabilities through the addition of new crude oil storage tanks (3 x 50,000 m<sup>3</sup> floating roof and 1 x 30,000 m<sup>3</sup> fixed roof), switching manifolds and export pumps, along with all their associated piping systems, utilities and control systems.

The project established an optimal crude tank farm and export system, so that the existing and planned volumes of crude could be delivered to the Caspian Pipeline Consortium and Crude Rail Loading without any loss of product quality or interruption in availability.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Floating Roof	3	ea					
Fixed roof	1	ea					
Crude Oil Storage Tanks	4	ea				N/A	
Piping Fabrication & Erection	21	km					
Cabling	645	km				N/A	
Cable Tray Installation	44	km				N/A	
Structural Steel Erection	1080	ton					

	Not by ENKA
	Partially by ENKA
	Fully by ENKA

# FGP MULTI WELL PADS CIVIL INSTALLATION – KAZAKHSTAN



- **Location:** Tengiz - Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, and LukArco)
- **Construction Period:** November 2015 – August 2019
- **Project Value:** US\$ 104.5 Million
- **Project Description:**

Tengizchevroil has been undertaking a large-scale expansion of its existing facilities through the Future Growth Project (FGP) - Wellhead Pressure Management Project. The expansion led to the signing of a new contract covering the construction of new greenfield process plants and the expansion of existing facilities.

The project included the road construction, worksite clearing and grubbing, site preparation, excavation works, installation of grounding lines, construction of wellhead cellars, auger and precast concrete pile installation and cropping, pile testing, construction of pile cap and precast foundations, construction of emergency flare pits, construction of reserve and technical water pits, and HDPE technical water line installation.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Bulk Backfilling	334,000	m <sup>3</sup>					
HDPE Pipeline	6.9	km					
Gravel Road	12.4	km					
Precast Concrete Piling	6,142	ea					
Bored Piling	414	ea					
Structural Concrete	13,300	m <sup>3</sup>					

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<span style="display: inline-block; width: 15px; height: 15px; background-color: #ffff00; border: 1px solid #ccc; margin-right: 5px;"></span>	Fully by ENKA

# CORE SUBSTATION ME&I INSTALLATION WORKS – KAZAKHSTAN



- **Location:** Tengiz - Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, and LukArco)
- **Construction Period:** July 2017 - July 2019
- **Project Value:** US\$ 49 Million
- **Project Description:**

FGP/WPMP - Core Substation Mechanical, Electrical & Instrumentation Installation Works project includes the installation of a new 110kV core substation and the interconnection of the facility's new and existing generating stations. The core substation will operate as the hub for the distribution of power.

The core substation comprises 32 prefabricated and pre-tested modules, and includes five (5) 110kV BAAH GIS switchboard and associated control and protection equipment, 10kV / 400V distribution transformers, LV switchgear, UPS systems, and system control equipment panels for FLS, ECS, SRC and automatic synchronizing.

Main Work Item	Quantity	Unit	Engi- neering	Procur.	Transport & Logistic	Fabric.	Construct.
Backfilling	50,063	m <sup>3</sup>					
Structural Concrete	2,250	m <sup>3</sup>					
Structural Steel	268	t					
HDPE Pipeline	880	m					
LTCS Pipeline	650	m					
Pipe Insulation	550	m					
LV Cable Termination	3,624	ea					
LV cable pulling	59,000	m					
110 KV HV Cable Termination	192	ea					
110 KV HV Cable Pulling	1,200	m					
Core Substation Modules	32	ea					
E&I Devices (Instruments, JB, Lumin.)	477	ea					
40/60/20MVA Buffer Transformer	2	ea					
245MVA, 110kV Fault Limiting Reactors	2	ea					
110kV Overhead Line Gentries	12	ea					
Standby Diesel Generators	2	ea					
Diesel Day Tanks	2	ea					
110KV Outdoor High Voltage Switchgear	4	ea					

	Not by ENKA
	Partially by ENKA
	Fully by ENKA

# 3GI CIVIL WORKS & UNDERGROUND SERVICES – KAZAKHSTAN



Not by ENKA  
Partially by ENKA  
Fully by ENKA

- **Location:** Tengiz, Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, and LukArco)
- **Construction Period:** May 2017 – July 2019
- **Project Value:** US\$ 118.5 Million
- **Project Description:**

The joint venture between ENKA and Bechtel was awarded the contract for civil works and underground services for the Third Generation Gas Injection Plant (3GI) facilities on Kazakhstan's giant Tengiz oil and gas field. The project covered a range of construction works including pile cropping and head treatment, earthworks, road works, terracing and concrete works, as well as the installation of underground utilities systems including piping, drain trenches, chambers and duct banks, the installation and termination of underground cables, and the installation of grounding materials for site areas including 45, 47A, 47B, 49, 57 and 58, which are integral parts of the TCO FGP project.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Structural Concrete	30.000	m <sup>3</sup>					
Hauling	2 million	m <sup>3</sup>					
UG Piping	13	Km					
Cabling	236	km					
Manholes and Precast	616	ea					
Gravel Roads	210.000	m <sup>2</sup>					

# FGP 3GP ME&I INSTALLATION WORKS – KAZAKHSTAN



- **Location:** Tengiz, Kazakhstan
- **Client:** Tengizchevroil (TCO) (a Joint Venture of Chevron, ExxonMobil, KazMunayGas, and LukArco)
- **Construction Period:** May 2018 – April 2023
- **Project Description:**

Senimdi Kurylys LLP, an equal joint venture between ENKA and Bechtel, was awarded the contract for the mechanical, electrical and instrumentation installation works for the Third Generation Project (3GP). The 3GP is part of TCO's Future Growth Project (FGP) which is an integrated project being developed primarily to increase the production capacity of the Tengiz Oil Field by an additional 12 million tons per year (260,000 barrels per day) and its gas production capacity by an additional 27 million m<sup>3</sup> per day. The project is being carried out using a modularized construction strategy, with modules constructed both at Kazakh coastal fabrication yards and at other fabrication yards in Europe and the Far East.

Main Work Item	Quantity	Unit	Eng.	Proc.	Transport & Logistic	Fab.	Constr.
Earth Works	12,422	m <sup>3</sup>					
Concrete	7,118	m <sup>3</sup>					
Structural Steel	12,608	t					
A/G Piping	5,358	ton					
Cabling	1,088,894	lm					
Insulation & Paint	38,374	m <sup>2</sup>					

Not by ENKA

Partially by ENKA

Fully by ENKA

# OIL FIELD DEVELOPMENT OF CASPIAN SEA – KAZAKHSTAN



**2001-2004** OKIOC Contract 2000-278: Offshore Civil Works

**2005-2012** Contract 2004-1372 Offshore Civil Works

D Complex Construction

A Island Construction

3 ea. EPC Islands

6 ea. Berms

10 ea. IPS (Ice Protection Structures)

4 ea. IRG (Ice Rubble Generators)

3 ea. DC Islands for Full Field Development

**2015-2016** Pipeline Replacement Project

D Complex Civil Modification Works

A Island Civil Modification Works

Onshore & Trench Dredging activities

**2016-2017** EPC-3 Topside Works

Early Works, Site Preparation, Load-in, Installation, Hook-up,

Mechanical Completion, Pre-commissioning and Commissioning

- **Location:** Kashagan - Kazakhstan
- **Client:** Agip Kazakhstan North Caspian Operating Company N.V.
- **Construction Period:** 1998 - 2017
- **Project Value:** US\$ 2 Billion

## Onshore Civil Works

- 1998** EPC construction of Bautino supply base
- 1998-1999** Supply of graded rock for appraisal berms
- 1999-2000** Expansion of OKIOC Bautino supply base
- 2001-2004** Infrastructure upgrade works in Bautino
- 2005** Construction of Cuttings Pits in Koshken
- 2006** Supply of High Density Rock (HDR), EPC loading & berthing facility in Saritash
- 2008** Supply of sheet pile materials
- 2015-2017** Logistic Support activities for offshore
- 2015-2017** Pre fabrication works for offshore installations

Not by ENKA
Partially by ENKA
Fully by ENKA

Main Work Item	Quantity	Unit	Procurement	Transport & Logistic	Fabrication	Construction
Earthworks	14,809,000	m <sup>2</sup>			N/A	
Haulage	12,513,000	ton			N/A	
Excavation	1,944,302	m <sup>2</sup>	N/A		N/A	
Sheetpile	90,337	ton			N/A	
Structural Steel	7,850	ton				
In-Situ Concrete	72,639	m <sup>3</sup>				
Precast Concrete Elements	362,420	ton				
Geomembrane/ Geotextile	618,800	m <sup>2</sup>			N/A	
U/G Piping	32,170	m			N/A	



# OFFSHORE CONSTRUCTION MAJOR WORK LOCATIONS



## KASHAGAN – Oil Field Development

# FGP-CATRO CHANNEL WORKS OF CASPIAN SEA - KAZAKHSTAN



- **Location:** Prorva - Kazakhstan
- **Client:** TenizService LLP / Chevron
- **Construction Period:** Oct 2014 – Oct 2018
- **Project Value:** US\$ 103.4 Million

## Onshore Civil Works

**2014 - 2017** Van Oord Contract - Marine Fleet and Logistic Services

**2017 - 2018** Marine Installation Works (Mooring Piles, Fenders, Communication Platforms) Preparation works - onshore

## Offshore Civil Works

**2014 - 2017** Van Oord Contract - Marine Fleet and Logistic Services

**2017 - 2018** Marine Installation Works (Mooring Piles, Fenders, Communication Platforms)

	Not by ENKA
	Partially by ENKA
	Fully by ENKA

Main Work Item	Quantity	Unit	Procurement	Transport & Logistic	Fabrication	Construction
Mooring Piles	450.00	ton			N/A	
Offshore Platforms (VTM)	24.00	ton	N/A			
Mooring Pile Filling material	900.00	ton			N/A	
Donut Fenders	371.00	ton			N/A	
Navigational Aids (Buoy)	255	Each	N/A		N/A	



## D - COMPLEX

## A ISLAND



## EPC – 3 ISLAND



## EPC – 4 ISLAND



## EPC – 2 ISLAND



## DC – 01 ISLAND



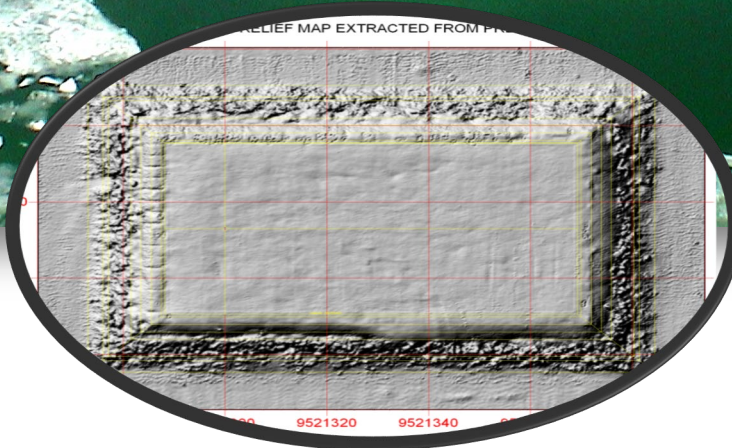
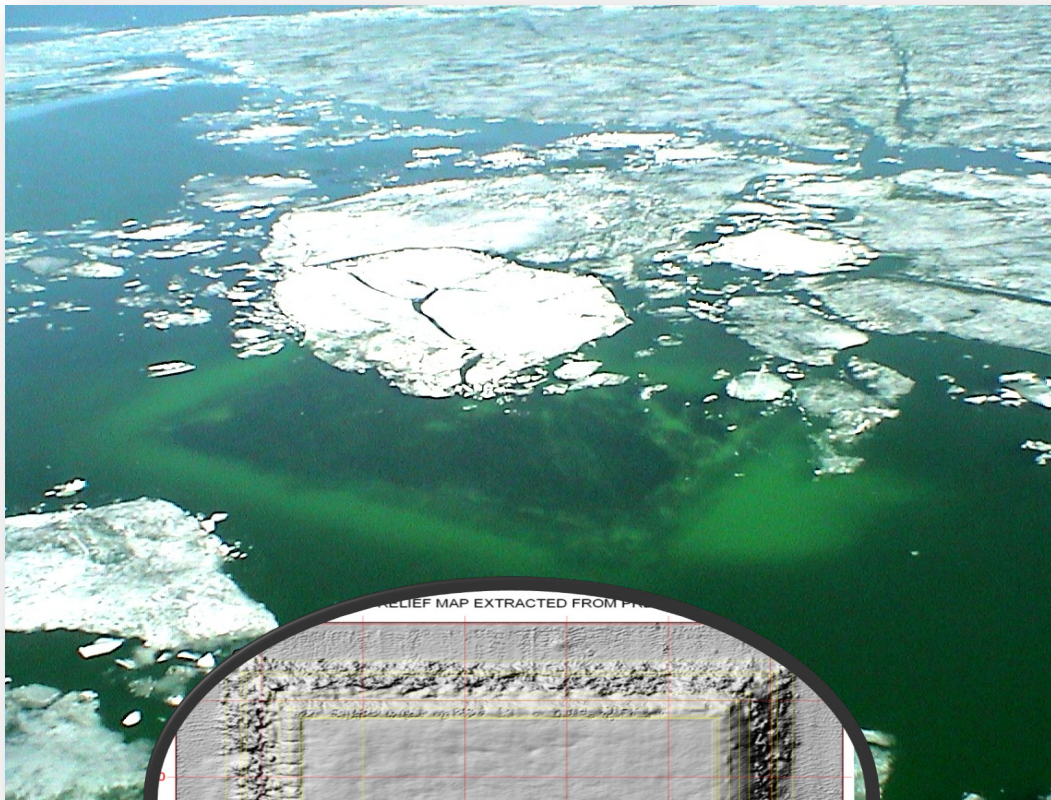
## DC – 04 ISLAND



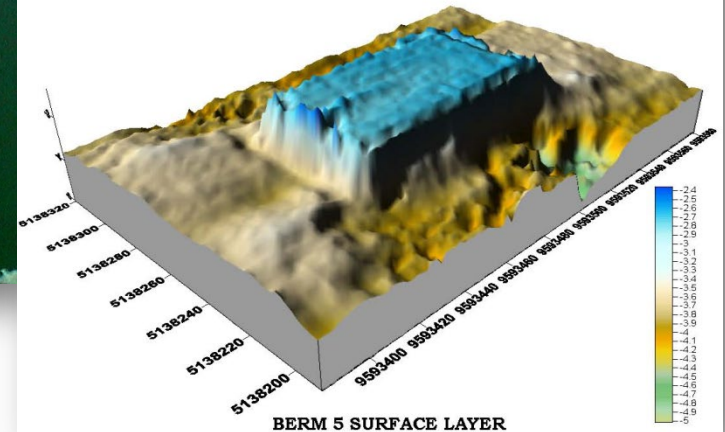
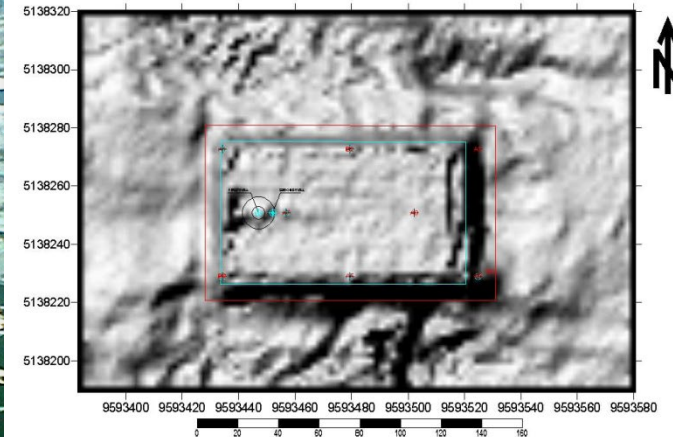
## DC – 05 ISLAND



# BERM CONSTRUCTION



## BERM#5 SHADED RELIEF MAP



# A-ISLAND AND D-ISLAND PIPELINE REPLACEMENT PROJECTS (2015-2016)



# EPC-3 TOPSIDE WORKS (2016)





# ENKA – OFFSHORE CIVIL CONSTRUCTION WORKS

## KEY QUANTITIES BETWEEN 2005–2016



QUANTITY REALISED	Unit	OVERALL	Y2005	Y2006	Y2007	Y2008	Y2009	Y2010	Y2011	Y2012	Y2013	Y2014	Y2015	Y2016
Haulage (Total)	t	11,000,893	1,372,845	871,674	2,174,785	1,977,798	1,932,905	1,959,705	528,453	105,068	0	0	40,355	37,305
Haulage (HDR)	t	1,106,855	-	234,617	227,079	-	172,272	279,867	166,368	19,829	0	0	6,823	0
Excavation	m <sup>3</sup>	2,194,985	81,765	193,004	317,965	290,024	426,064	447,511	125,715	62,254	0	0	64,780	185,903
Sheet Pile / Tubular Pile	t	92,021	4,557	8,447	16,461	17,309	20,151	19,001	3,262	1,149	0	0	713	972
Precast Transportation	t	272,274	32,391	15,743	21,180	17,745	32,157	77,839	54,210	14,878	0	0	0	6,131
Precast Installation	t	287,075	31,317	15,743	12,332	20,062	37,397	75,441	68,662	19,465	0	0	0	6,656
Precast Fabrication	t	73,229	1,542	1,818	1,376	13,609	18,553	28,439	1,761	0	0	0	0	6,131
In-situ Concrete	m <sup>3</sup>	74,158	849	4,296	13,386	5,558	16,749	18,357	8,191	5,253	0	0	0	1,519
Geomembrane / Geotextile	m <sup>2</sup>	525,486	19,557	33,231	110,800	71,353	102,143	167,267	15,685	2,770	0	0	0	2,680
UG Piping	m	25,375	2,105	64	1,434	2,957	1,807	10,718	3,779	533	0	0	0	1,978
Skid Beam Installation	t	7,861	-	1,228	111	929	2,975	1,768	660	81	0	0	0	109

\* Note that construction period in North Caspian Region was 8 months per year.

# BACK OFFICE SUPPORT - KAZAKHSTAN

# ONSHORE FACILITIES – BAUTINO BASE



ENKA Bautino Base is located in Bautino village adjacent to ENKA Marine Base with 31,500m<sup>2</sup> area:

- 230 bed capacity
- Family camp for staff personnel
- Training Centre
- Recreation Facilities
- Office Buildings
- Warehouse
- Mechanical Workshop
- Civil Works Supply Yard (Batch-plant, Carpenter's shop, rebar preparation yard etc.)
- Sports Facilities

# ENKA MARINE BASE (BAUTINO)



ENKA Marine Base is located in Bautino Bay.

- Available 350m Jetty
- 56,000 m<sup>2</sup> storage area
- Weighbridge and Loading Bridge
- Passenger Transfer Office (Custom)
- Workshop for Precast Fabrication
- Marine Mechanical Workshop
- Welding Workshop

# ENKA – AVAILABILITY OF RESOURCES

## LAND EQUIPMENT

*An extensive range of construction equipment and vehicles have been developed over the years to meet the multi-discipline construction needs of ENKA milestones.*

NO	Construction Equipment	Onshore	Offshore
1	Excavator	4	11
2	Mini Excavator	-	8
3	Hydraulic Breaker	-	2
4	Crane	5	8
5	Forklift	2	5
6	Loader	3	4
7	Grader	1	-
8	Vibro Roller	2	3
9	Hand driven roller	-	1
10	Plate Compactor	4	10
11	Bus - Intercity	1	-
12	Service Bus	2	-
13	Ambulance	2	-
14	Minibus	3	-
15	Pickup	15	-
16	Jeep	3	-
17	Diesel Water pump	3	1
18	Convertor & Vibrator	-	5
19	Flood light	4	20
20	Diesel Generator	19	23
21	Welding Machine	15	17
22	Batching Plant	2	1
23	Grouting Injection Pump Set	1	-
24	Vacuum Hand Laying Device Machine	-	3

NO	Construction Equipment	Onshore	Offshore
25	Steel Cutting Machine	1	1
26	Steel Bending Machine	1	1
27	Garbage Truck	1	-
28	Dump Truck	11	7
29	Mixer Truck	6	3
30	Mini Mixer	-	2
31	Truck Tractor	6	2
32	Low Boy Trailer	4	2
33	High Boy Trailer	5	2
34	Fuel Truck	1	1
35	Lube Truck	2	2
36	Boom Truck	2	1
37	Water Truck	3	3
38	Silobus	4	-
39	Baby Dumper	-	5
40	Truck Mounted Concrete Pump	1	2
41	Diesel Stationary Concrete Pump	-	1
42	Mini Truck	3	-
43	Electrical Compressor	3	-
44	Diesel Air compressor	1	5
45	Lathe Machine	1	-
46	Hydraulic Hose press	1	1
47	Lube Oil Pump station	1	2
48	Vibro Hammer	2	-

SUBTOTAL EQUIPMENT                      151                      165

TOTAL EQUIPMENT                                              316



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# MARINE FLEET

# MARINE FLEET

## Accommodation Vessels

- **F/H “NAVRUZ”**

*Non-self propelled Accommodation Vessel*

- *Dimensions : 112 x 13.8 m*
- *Max. draft : 3.10 m*
- *POB : 300 person*



- **SPV “SAKARYA”**

*Special Purpose Vessel*

- *Dimensions : 49.9 x 9.56 m*
- *Max. draft : 3.20 m*
- *POB : 74 person*





# MARINE FLEET

## Supply Vessels

- **Supply Vessel "YAGUAR"**
  - Dimensions : 54.86 x 12.19 m
  - Max. draft : 3.20 m
  - POB : 42 person
  - Fuel: 173 m<sup>3</sup>
  - Fresh Water: 169 m<sup>3</sup>
  - Sewage: 141 m<sup>3</sup>
  - Ballast Water: 200 m<sup>3</sup>
  - Oily bilge water: 8.1 m<sup>3</sup>
  - Dirty Oil tank: 1.3 m<sup>3</sup>
  - Clear deck Space: 276 m<sup>2</sup>
  - Deck Crane: 1 pcs IRON FIST, BLUE STEEL S.R.L. (PAGO VEIANO-BN-- İTA ) - SWL 2.2 Tons- 17.5mtr, 5.75 Tons- 7.2mtr
  
- **Supply Vessel "FIRAT"**
  - Dimensions : 52.65 x 11.58 m
  - Max. draft : 3.30 m
  - POB : 42 person
  - Fuel: 460 m<sup>3</sup>
  - Fresh Water: 131 m<sup>3</sup>
  - Sewage : 141 m<sup>3</sup>
  - Ballast Water: 320 m<sup>3</sup>
  - Oily bilge water: 20.9 m<sup>3</sup>
  - Dirty Oil tank: 4.35 m<sup>3</sup>
  - Clear deck Space: 335 m<sup>2</sup>
  - Deck Crane : 1pcs, IRON FIST, BLUE STEEL S.R.L. (PAGO VEIANO-BN- İTA) - SWL 2.2 Tons- 17.5mtr, 5.75 Tons- 7.2mtr



# MARINE FLEET

## Multi Purpose Tugboats

- **Tugboat "ARAL"**

### Multipurpose Tugboat

- Dimensions : 28.16 x 9.5 m
- Draft : 2.60 m
- Main Engine : 2 X 1014 KW
- Bow Thruster : 160 KW
- BP : 27.8 ton
- Deck Crane : 1 pcs, HEILA / HLRM 140-3S - SWL 10 Ton / 12.25m



- **Tugboat "MERIC"**

### Multipurpose Tugboat

- Dimensions : 28.16 x 9.5 m
- Draft : 2.60 m
- Main Engine : 2 X 1014 KW
- Bow Thruster : 160 KW
- BP : 27.8 ton
- Deck Crane : 1 pcs, HEILA / HLRM 140-3S - SWL 10 Ton / 12.25m



# MARINE FLEET

## Multicats

- **m/v "ASI"**

- Dimensions : 18.77 x 8.0 m
- Max. draft : 2.20 m
- Main Engine : 2 X 447 KW
- BP: 10 Ton
- Deck Crane :1pcs, "EFFER" Hydraulic Knuckle Crane. Model:65000-35-L (SWL 8 Ton / 7,3m )

- **m/v "SURVEYOR"**

- Dimensions : 23.5 x 10.0 m
- Max. draft : 1.60 m
- Main Engine : 3 X 164 KW
- BP : 10.7 ton
- Deck Crane : 2pcs,  
Heila 140-3S (Forward, 10Ton / 12,17m), Heila 3500-3S (Aft 2,8Ton / 11,3m)

- **m/v "GOKSU"**

- Dimensions : 20.1 x 8.0 m
- Max. draft : 2.40 m
- Main Engine : 2 X 441 KW
- BP : 14.7 ton
- Deck Crane : 1 pcs, "EFFER" Knuckle Boom ship deck crane, Model:80000SL 3S (SWL 7.5 Ton/11m)



# MARINE FLEET

## Bathymetric Survey Vessel “Coastal Assistant”



**Dimensions:** 18.49 x 6.0 m

**Draft :** 1.20 m

**Equipment :**

- GPS Receiver & Antenna
- Motion Sensor
- Gyro Compass
- Multibeam Head
- Multibeam Sonar Processor
- Radio Telemetry

# MARINE FLEET

## Crew Boats

- ***M/S "ATASH"***

**Special service / Personnel carrier**

- *Dimensions : 31.4 x 7.3 m*
- *Max. draft : 1.65 m*
- *Main Engine : 3 X 559 KW*
- *Clear deck Space : 54.6 m<sup>2</sup>*
- *POB : 70 (Day Pax)*



# MARINE FLEET

## Spud and Spreader Barges

- **Spud Barge “CORUH”**

- Dimensions : 54.0 x 11.0m
- Max. draft : 2.20 m
- 4 leg, 16 m long, Dia.609mm

- **Spud Barge “CEYHAN”**

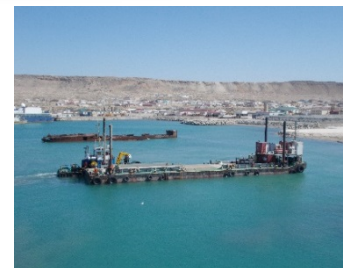
- Dimensions : 54.0 x 11.0m
- Max. draft : 2.20 m
- 4 leg, Length 16 m , Dia.609mm

- **Spud Barge “EB-105”**

- Dimensions : 85.2 x 16.60 m
- Max. draft: 2.60 m
- 4 leg, Length 16.9 m , Dia.610mm

- **Spud / Spreader Barge “EB-106”**

- Dimensions : 85.2 x 16.60 m
- Max. draft: 2.60 m
- 2 leg, Length 16.9 m , Dia.610mm
- 4 Point mooring anchor system, rated pull: 55 Ton, 10m/min. (each, 4 Ton Delta Flipper anchors, 44 mm wires, Length 500m)



# MARINE FLEET

## Cargo and Concrete Plant Barges

- **Cargo Barge “CEVIK -1”**

- Dimensions : 63.20m x 16.40m
- Max. draft : 2.93 m
- Deadweight: 2271 t
- Deck Capacity : 10t/m<sup>2</sup>

- **Cargo Barge “EB 103”**

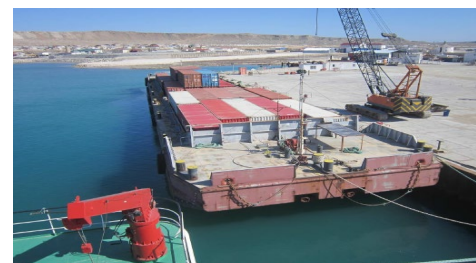
- Dimensions : 85.60m x 16.6m
- Draft (max): 2.60 m
- Deadweight: 2500 t
- Deck Capacity: 14t/m<sup>2</sup>

- **Cargo Barge “EB-104”**

- Dimensions : 85.60m x 16.6m
- Draft (max): 2.60 m
- Deadweight: 2500 t
- Deck Capacity: 14t/m<sup>2</sup>

- **Concrete Plant Barge “EB-102”**

- Dimensions : 85.60 x 16.6m
- Draft (max): 2.60 m
- Deadweight: 2500 t
- Deck Capacity: 14t/m<sup>2</sup>
- Concrete Plant;  
Capacity : 30 m<sup>3</sup>/h, Cement Silo Capacity : 50 tones, Water tank at deck 50 m<sup>2</sup>



# AKTAU PORT REHABILITATION – KAZAKHSTAN



**Location:** Aktau - Kazakhstan

**Construction Period:** May 1997 - September 1999

**Client:** Aktau Commercial Sea Port

Aktau is Kazakhstan's main port on the Caspian Sea and serves as the major logistics base for the offshore oil fields. The ENKA-Bechtel joint venture signed the contract with Kazakhstan's Ministry of Transportation for the Aktau Port rehabilitation project.

The contract included elevating the port by two meters, replacing all the port utilities, and constructing a new 550 m pile supported quay, a new railroad, a port administration building and a 6,500 m<sup>2</sup> transit shed as well as additional auxiliary buildings. The port had to be kept operational throughout construction, which was completed in September 1999.



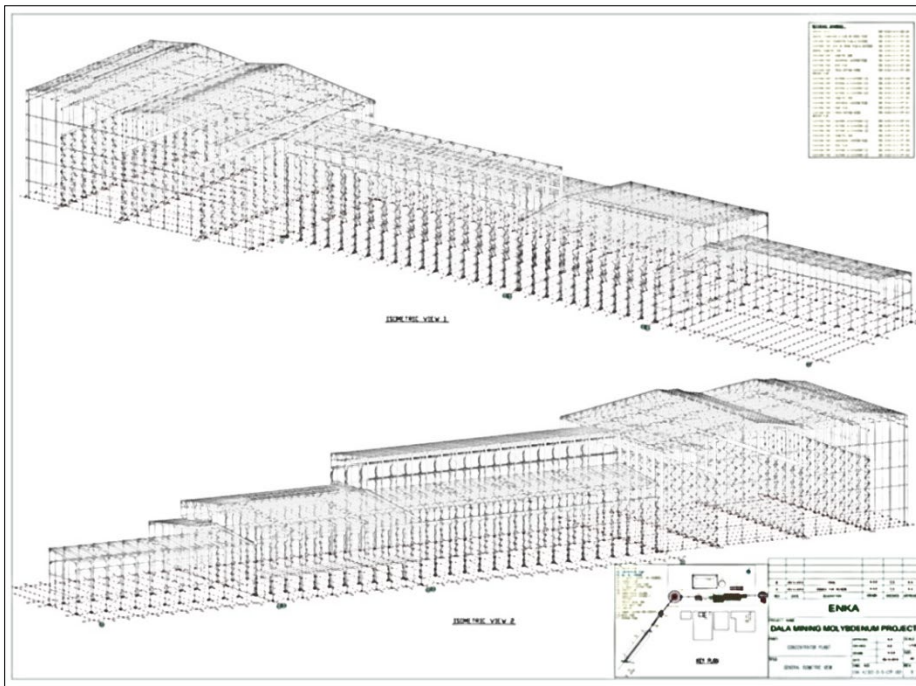


# KOKTENKOL MOLYBDENUM PROJECT – KAZAKHSTAN

**Location:** Koktenkol - Kazakhstan

**Construction Period:** September 2012 - August 2013

**Client:** Dala Mining LLP



ENKA and OUTOTEC successfully completed Front End Engineering Design (FEED) services for Koktenkol Molybdenum Project.

The Koktenkol Molybdenum Project was a large open pit molybdenum mine, including ore processing facilities, and associated infrastructure, located in central Kazakhstan, about 150 kilometers southwest of the city of Karaganda. The mine was planned to process 20 million tonnes of ore per year.

# ESENTAI PARK COMPLEX IN ALMATY – KAZAKHSTAN



- ❑ Tower incl. JW Marriott Hotel with 175 room with the total area: 87,000 m<sup>2</sup> (37-storeys and 4 levels of basement car parking)
  - ❑ Residential Block A, a 3+21-storey building with 137 apartments covering a total area of 63,000 m<sup>2</sup>. Residential Blocks B and C, each block consists of a 2+21-storey building, with common parking levels. There are 18 duplex apartments and 268 standard apartments, and the total gross area is 89,000 m<sup>2</sup>
  - ❑ Shopping Mall and Fitness Centre with the total gross construction area is 128,000 m<sup>2</sup> and indoor parking is available for 700 cars
- **Scope:** Lump sum and Unit Rate Procurement & Construction Contractor
  - **Commencement:** January 2006
  - **Completion:** December 2014
  - **Location:** Almaty - Kazakhstan
  - **Client:**
    - Capital Tower Development LLP
    - KUSA KKB-2 LLP



# ENKA

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