Translation from Bulgarian

ASSIGNMENT

on the scope of

Environmental Impact Assessment Report on investment proposal for

GRAVEL AND SAND EXTRACTION FROM ALLUVIAL SEDIMENTS IN THE BED OF THE DANUBE RIVER,

MISHKA SECTION (462.0 KM. – 459.4 KM.), IN THE AREA OF BABOVO VILLAGE, SLIVO POLE MUNICIPALITY, ROUSSE REGION

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Contents

INTRODUCTION

This assignment shall determine the scope of EIAR of the project "Gravel and Sand Extraction from Alluvial Sediments in the Bed of the Danube River, Mishka section (462.0 km. – 459.4 km.), in the area of Babovo village, Slivo Pole Municipality, ROUSSE Region" pursuant to Article 95, para. 2 of the Environmental Protection Act (EPA) (promulgated, SG. 91 of 25.09.2002, subsequently amended and supplemented) **and Resolution No 3-PR/2014 of the MEW (Appendix) and a letter with ref. No OVOS-74/01.04.2014 of the MEW (Appendix).**

I. CHARACTERIZATION OF THE INVESTMENT PROPOSAL

The Investment Proposal includes extraction, transportation and unloading of alluvial materials (sand and gravel) from the bed of the Danube River, Mishka section (462.0 km. – 459.4 km.), to the north of the village of Ryahovo and the village of Babovo, to the north and north-west of Mishka Island (Golyam Mishka – 1 and Malak Mishka-2) and to the south of Mishka-3.

After conducted research the discovered reserves of mineral resources were reviewed by the Executive Agency for Exploration and Maintenance of the Danube (EA "EMD") for the purpose of extraction of alluvial sediments from the bed of the Danube.

The confirmed site covered by the investment proposal complies with the following conditions:

- the area falls within the Bulgarian part of the river;
- the area is at the required mandatory distance from the river fairway;
- maintenance of the necessary distance of the extraction area from the Bulgarian bank in order to avoid damage and erosion resulting from the extraction.

The extraction area covers 433,626 m².

1. Location of the Site. Aerial Map.

The area designated for extraction of sand and gravel from the Danube River is located from km 462.0 to km 459.4 to the north of Ryahovo Village and Babovo Village, to the north and north-west of Mishka Island (Golyam Mishka – 1 and Malak Mishka-2) and to the south of Mishka-3. The area of the plot (0.433 sq.km.) is 2.6 km long, 300 m. wide in the south-west part and up to 100 m. wide in the north-eastern part.

The extraction area is located within the Bulgarian part of the river, at the mandatory distance (327 meters to the southwest to 194 m to the north-east) of the river's mainstream.

The extraction area is 418 meters away from the Romanian border and 836 meters away from the Romanian coast in the southwest and 50 m and 310 m in the northeast respectively. The extraction area is shown on a map with scale of 1:5000 appended hereto.

Figure I.1.-1 is a satellite image of the gravel and sand extraction area al ong the Danube.

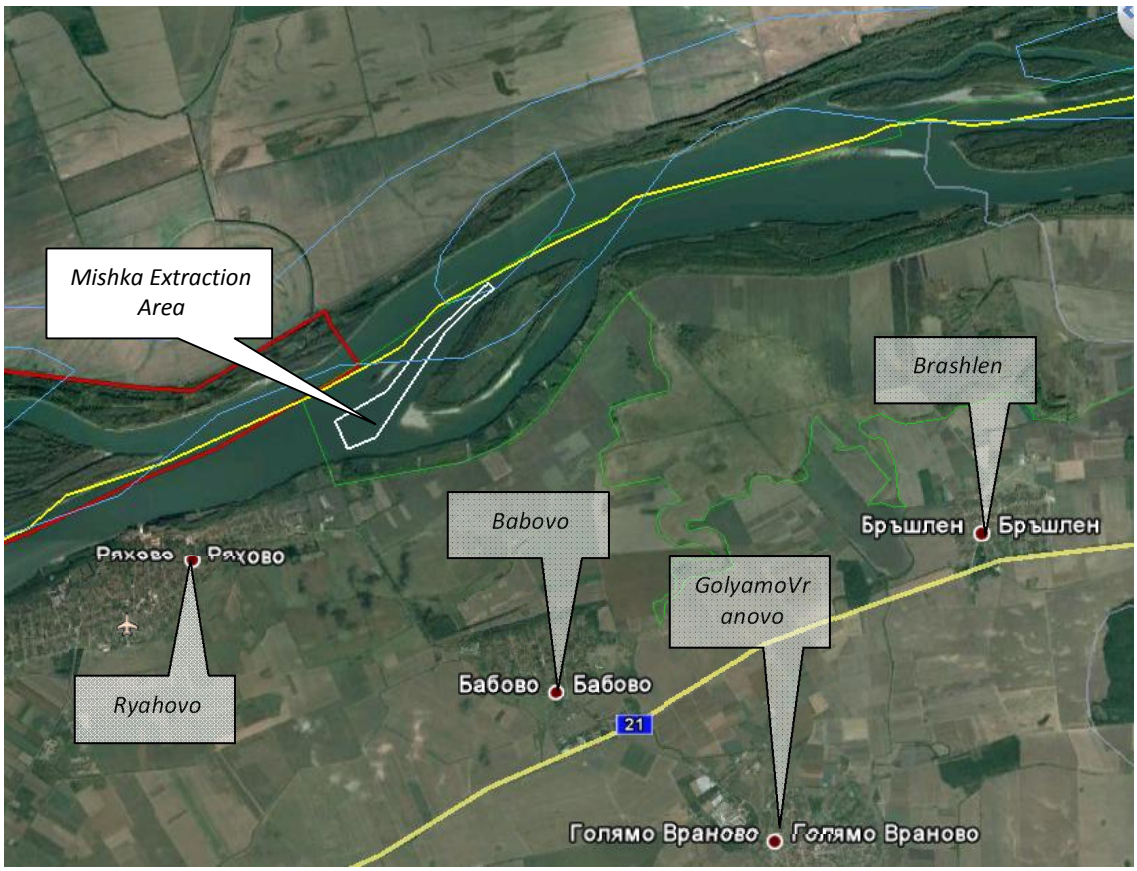


Figure I.1.-1 is a satellite image of the gravel and sand extraction area along the Danube.

The zoning borders of the nearest residential areas (the village of Ryahovo and the village of Babovo) stand at 1 km and 2 km respectively of the extraction site. Distance along the river to the bridge over the Danube in Rousse is 29.5 km.

The territory of the investment proposal does not fall within any protected territory within the meaning of the Protected Areas Act (Promulgated SG. 133 of November 11, 1998, last. amend. SG 66 of July 26, 2013). It is, however, adjacent to the area Kalimok Brashlen protected by virtue of Order RD -451 of the Minister of Environment and Waters.

The extraction area falls within BG 00002030 “Kalimok Complex” area protected under Directive 79/409/EEC on the Conservation of Wild Birds and “Kalimok - Brashlen” PZ 0000377 area protected under Directive 92/43 on the Conservation of Natural Habitats and of Wild Flora and Fauna on the NATURA 2000 project and under the Biological Diversity Act.

Geographic coordinates WGS-84 of the border points of Mishka-7 area

Mishka Area		
No	**Latitude, B**	**Longitude, L**
1	44º00´13.1	26º16´28.8
2	44º00´23.5	26º16´22.5
3	44º00´34.5	26º16´48.8
4	44º00´52.4	26º17´07.2
5	44º01´14.1	26º17´40.7
6	44º01´11.8	26º17´43.1
7	44º01´05.8	26º17´31.9
8	44º00´56.4	26º17´18.8
9	44º00´17.4	26º16´43.2

2. Required Areas

The area of the offered investment proposal is a section of the bed of the Danube River that is public state property. It includes modern accumulation of alluvial material at the bottom of the river. The area of the plot (0.433 sq.km.) is 2.6 km long, 300 m. wide in the south-west part and up to 100 m. wide in the north-eastern part.

The right of use is pursuant to the Water Act. No land or soil outside the water body is affected.

The wharf owned by the company and used for loading and unloading of sand and gravel extracted from the river is located in the eastern industrial zone of the town of Rousse over 4,558 m^2 (fig. I.2-1).

Fig. I.2-1 Satellite image of the location of the wharf owned by Assignor

3. *Description of the investment proposal: capacity, positioning of separate facilities*

The Investment Proposal includes extraction, transportation and unloading of alluvial sediments (sand and gravel) from the Danube.

Extraction of alluvial materials (sand and gravel) from the Danube River will be done by using floating multi-bucket dredger, after which the material will be transferred to a drying sieve and via a rubber conveyor belt to self-propelled barges for transportation to the wharf. Material will be unloaded on the wharf using grabbing jib crane with bucket volume of 5 cubic metres on a longitudinal pile, parallel to the crane runway.

The material will be then loaded using front loader and will be dispatched with road transport vehicles.

The area for extraction will be divided during excavation works into separate extraction tracts. Each tract will be marked with floating buoys anchored along the contour of the specified tract.

The dredger will be positioned on the extraction site with the help of a self-propelled barge that will tow the dredger to the required location. This operation will take place twice a year: at the start of extraction works and at the end of the season in order to put away the dredger for the winter. Movement of the dredger within the specified tract is done through a system of stern and side anchors located at the top to the left and right of the axis of the dredger. Movement is achieved by rolling anchor ropes on one side and releasing the ones on the other.

Extraction works in each individual tract will be done from east to west (upstream). The full area of the extracted layer will be excavated simultaneously.

During extraction of the material in depth, slopes in proportion of 1:2.75 will be formed in order to secure the stability of the riverbed (in the relevant tract) for the performance of extraction and technical works. Shaping of the slopes with increasing depth will lead to reduced intake area with 317,613 m^3 of extractable materials. Depending on the water position and during nesting season, extractions work may take place in different tracts of the developed area.

Technology for extraction of sediment materials

The technology for extraction of sediment material from the Danube River is based on the use of floating multi bucket dredger type KS 250. It has no alternative in the given conditions, namely the presence of 150 mm boulders. The dredger is equipped with endless multi bucket chain of buckets, each bucket with 250 litres of volume. The specific extraction process is carried out via removal of sediment material from the bottom of the river by scraper (250-liter) buckets.

Installed capacity:

- Diesel engine - 500 kW;
- Generator - 620 kVA.

Main engine power:

- Bucket chain operation - 2 x 90 kW;
- drying sieve - 2 x 30 kW;
- rubber belt conveyor -11 kW;
- pulley chain of buckets - 2 x 15 kW.

Maximum operating depth of the dredger for sedim ent extraction is 12 m.

Unloading of alluvial materials extracted by the buckets will be done directly on the drying sieve of the dredger. Drained water will be released back into the river and dried alluvial materials will be transferred to the self -propelled barges via rubber belt conveyors. In the process of unloading of extracted ballast in the barge the solid phase precipitates at the bottom of the barge and the water remains above it. When the amount of useful material increases, the water level rise s and reaches the holes in the barge walls from where excess water flows back into the river. There are drainage pipes at the bottom of the barge that drain the remaining water for maximum drying-out of the material. Drainage water is pumped back into the river by pumps with maximum flow rate of 260 m3 / h.

- The barge is divided into two separate holds with freight volumes V_1 = 680 m^3 and V_2 = 627 m^3 and a total carrying capacity of 1 000 t.

Installed capacity is:

- Diesel engine: 820 hp

The vessels (dredger and barges) have fire installations, drying and sanitation installations (for process water and overboard water - water to wash the ship) and installations for the treatment of human waste waters.

Waste generated during operation will be stored on th e vessels and transported to the wharf for further treatment.

The estimated dynamic reserves of ballast material in the outline of the approved area are about 3.7 million cubic meters.

The area of the site for extraction of sand and gravel from the Dan ube River (0.433 sq.km.) is 2.6 km long, 300 m. wide in the south -west part and up to 100 m. wide in the north-eastern part. Deposits (222) are estimated at 2,475,047 m^3, and extractable deposits (222) at 1,812,869 m^3. Extraction area will be divided into 10 tracts for extraction of inert materials. Capacity of extracted material will reach 345,000 m^3 per annum. Daily extraction will reach 1500 m^3 with 230 working days a year (9 months, 6 days per week).

Transportation of extracted material

The Danube River will be the transport corridor used for transportation of sand and gravel extracted from the Mishka section to the wharf owned by the company. The

wharf is located in the Eastern Industrial Zone of the town of Rousse. It is a licensed and operating river port for handling of general and bulk cargo. Transportation of raw material will be done by using three special self -propelled barges for bulk cargo, each of them with load capacity of 1 000 tonnes. Material that cannot be scooped up by the crane grabs is approximately 100 tons per barge. Each barge will make one course and a total of three barges loaded with raw material will arrive at the wharf for unloading.

Unloading of Material on the Wharf

Implementation of the investment plan will involve changin g of the existing infrastructure of the wharf located in the Eastern Industrial Zone of the town of Rousse.

Existing buildings on the wharf owned by the company will be demolished and site for unloading of material and temporary storage for about 17 00 0 t of alluvial materials will be prepared.

Caravans along the south fence will meet the housing and administration needs by providing a checkpoint, administration office, changing room with showers and toilets, accommodation for eating with kitchenette, water purification installation and transformer substation/1x650.

The site is to be equipped with a small treatment plant type ACO Clara 5 -10 with hydraulic load of 0.75 to 1.05 m3 per day. Inflow and outflow of the plant is controlled by gravity.

Purified water will be discharged in the Danube owing not least to the certified parameters of the plant allowing a degree of water purification high enough for a first degree body of water (the Danube is a third -category body of water), according to the categorization of surface water determined by Ordinance No 7/1986.

Works on site will be performed in shifts requiring additional lighting for night time; therefore, two light towers will be installed in the northern and southern end of the site.

In order to optimize the workflow and, in particular, the unloading of sediment material from barges one of the existing 5-ton jib cranes will be dismantled and a 15-ton electricity-powered grabbing jib crane will be mounted.

The adopted flow sheet provides for the grapple crane to unload excavated rubble directly on dumper trucks. In rare cases, only in the absence of a regular supply of dumper trucks, the crane will unload the rubble on a pile along the crane runway. This ensures independence of the unloading process from the transportation of the raw material by dumper trucks to a sorting and treatment site, and full utilization of the production capacity of the crane.

The purpose of the buffer depot is to provide certain quantities of raw material during short stays of extraction, transport and unloading facilities.

The material loaded on dumper trucks will be covered with tents and transported to an industrial site owned by the company and equipped with a sorting and treatment installation for processing of alluvial materials from the Danube River and concrete unit on plot with identification No 63427.8.1076 from neighbourhood No 1 as per the plan of the town of Rousse, eastern industrial zone. This, however, is outside the scope of the current Investment Proposal.

Alternatively, extracted material will be dispatched with covered road transport vehicles to the market for processing by other entities or for direct utilization.

Human resources required for the Operation

The total number of people employed in the operation is 44.

Proposed methods of exploitation

Processes, employed during extraction of sand and gravel are directly related to the physical and mechanical characteristics of alluvial materials subject to extraction.

Alluvial deposits are naturally precipitated relatively compacted and unconsolidated rocks classified as heavy soils of the earth. They can be extracted directly from their location using floating dredgers.

Transportation of raw materials will be done with specialized self-propelled barges for bulk material with load capacity of 1 000 t. Unloading of raw material from the barges on the coast will be done on the wharf by a jib crane with grabs.

Main raw materials for the realization and exploitation of the investment proposal

River sediments, sand and gravel, are natural mineral resources and the subject of the proposed activity. The estimated dynamic reserves of alluvial materials in the

outline of the approved area subject of the investment proposal for extraction of sand and gravel in the Danube River are about 2,475,047 cubic meters.

Investment proposal does not provide for the construction of either surface or groundwater water supply facilities. Extraction will be done by dredging, and transport - by barges.

The following will be used for the realization of the investment proposal:

Drinking water

Mishka area

Drinking water for the workers on the dredger and barges will be provided from an external source by the company carrying out the extraction and transport.

Wharf, unloading platform

The ten workers on site will receive supplies of bottled water.

Water for production and technological needs

According to the adopted plan for the extraction, transportation and storage of extracted material, such water will not be necessary.

Water for Domestic Use

Mishka Area

Water quantities required for domestic use will be stored in special tanks on the dredger and transport barges respectively. The tanks will be filled up at certain areas according to the arrangements of the company owner of the dredger and barges.

Wharf, unloading platform

Necessary water quantities during operation for staffing of 10 people will be about 0.5 m^3 per working day. Personnel's personal hygiene needs will be met at the housing and administration section of the site. Water will be supplied via the urban water supply system on the base of a contract with the water operator.

Other natural resources or raw materials will not be used during exploitation of the deposits.

Energy sources are:

- Diesel fuel for extraction, transportation and storage of bulk material - 908 tonnes per year;
- oils - 24 tons per year;
- Electricity for the unloading site on the wharf – 390,000 kWh.

4. Determining the type and amount of estimated waste and emissions (water, air and soil pollution, noise, vibration, radiation - light, heat, radiation, etc.) resulting from exploitation of the investment proposal

4.1. Air Pollution

During Construction

Construction works will not be carried out on the gravel and sand extracti on site in the Danube bed.

Implementation of the investment proposal will involve changes in the existing infrastructure of the wharf located in the East Industrial Zone of Rousse.

Existing buildings on the wharf owned by the company will be demolished a nd site for unloading of material and buffer depot for about 17 000 t of alluvial materials will be prepared. Expected demolition works will not last more than one month. During this period there will be two types of emissions:

- dust from demolition of old buildings, loading and unloading of construction waste, suspension of dust from construction traffic and transport equipment;
- harmful gases from diesel engines of construction and transport equipment (nitrogen oxides, carbon monoxide, carbon dioxide, nitr ous oxide, volatile organic compounds, sulphur oxides, soot).

The EIA Report is to give an estimation of emissions during construction. A set of emission factors of the Environment Agency of the United States derived from the study of the construction of a shopping centre with apartments (2.69 Mg/ (hectare. month activity)) is to be used for this purpose (***Compilation of Air Pollutant Emission Factors, 5th ed. (AP-42), Vol. I: Stationary Point and Area Sources. 13.2.3. Heavy Construction Operations. Resear ch Triangle Park, North Carolina: US environmental Protection Agency, Office of Air Quality Planning and Standards, October 1998***.).

Caravans along the south fence will meet the housing and administration needs by providing a checkpoint, administration off ice, changing room with showers and toilets, accommodation for eating with kitchenette, water purification installation and transformer substation/1x650. Installation of caravans is associated with insignificant emissions, which cannot be evaluated quantit atively.

During Exploitation

The technology for extraction of aggregates proposed in the project implies an insignificant impact on ambient air quality (AAQ). Sediments extracted from the river bottom are very moist and remain such even after the drying sieve. This level of moisture practically prevents dust emissions.

In the process of unloading of extracted ballast in the barge the solid phase precipitates at the bottom of the barge and the water remains above it. When the

amount of useful material increases, the water level rises and reaches the holes in the barge walls from where excess water flows back into the river. This means that dust emission is also not to be expected during the loading of the barges.

Sediments unloaded from the barges on the wharf are also characterized by maximum humidity. This means that if the aggregates are loaded directly on dumpers for transportation to the sorting and treatment facility, the cycle of production, unloading and transportation will not generate dust emissions from the extraction material.

Unavailability of dumper trucks on the wharf owned by the company will be compensated by the formation a separate site and buffer depot for unloading and temporary storage of about 17,000 tons of river alluvial deposits. Prolonged periods of storage of the alluvial deposits will continuously reduce the humidity of alluvial deposits, and especially their surface layer. Although the inside of the pile remains highly humid, the use of a front loader (loading of trucks from the depot) will create conditions for low-intensity dust emissions. Furthermore, part of the sediment material will be dispersed on the site, which in turn will cause secondary dust emissions by dust suspension in the air from the tires of trucks and loaders .

Besides the emissions of dust, dumpers and loaders will generate emissions of nitrogen oxides, carbon monoxide, carbon dioxide, nitrous oxide, volatile organic compounds, sulphur oxides, and soot typical for diesel engines. Their quantification will be done in the EIA Report.

4.2. Expected Waste

Waste generated during extraction of alluvial deposits from the river

Extraction of alluvial sediments from the river will not be associated with generation of technological waste. In the process of extraction, the entire amount of dredged sand and gravel will be loaded on barges and transported to the wharf for unloading.

Prior to reconstructing the wharf, the investor should provide the necessary documents relating to the waste management activities required by the Waste Management Act (SG86/30.09.2003, last amended and supplemented SG 53/2012.): entering into contracts for transport, utilization or disposal of waste with entities entitled to carry out such activities in accordance with Article 35 and possessing a permit issued pursuant to Article 67, para. 4 or Complex Permit issued pursuant to Chapter 7, Section II EPA.

Waste that is expected to be generated during preparation and operation of the wharf

Different types of construction waste will be generated during the demolition of existing facilities on the wharf and its preparation for unloading of extracted alluvial materials from barges and for temporary storage of about 17 000 tons of alluvial deposits. These wastes will be generated once during the reconstruction, which will continue for a maximum period of 6 months.

Construction waste will be handled by a company specialized in activities as per Article 35 and possessing a permit issued pursuant to Article 67, para. 4 or Complex Permit issued pursuant to Chapter 7, Section II EPA. Construction waste will be transported to a landfill for construction waste designated by the Municipality of Rousse with means of transport secured by the investors or by specialized companies. Expected quantity is 1000 t.

The table below summarizes types of waste expected to be generated with the relevant codes and designations pursuant to Ordinance No 3 of 1 April 2004 on Waste Classification (SG 44/2004) (*Table IV.4.2.-1*).

Table IV.4.2.-1 - Non-Hazardous Waste

Code	Name	Waste generation activity	Total estimated amount in tons
16 02 14	discarded equipment other than that classified as 16 02 09 to 16 02 13	external lighting, on site	0.2
17 01 07	mixtures of concrete, bricks, tiles, porcelain and ceramics other than those classified under 17 01 06	demolition of existing buildings on the wharf	1000
17 02 01	wood	Clearing the wharf	0.1
17 02 02	glass	Clearing the wharf and preparation for unloading of extracted alluvial deposits	0.1
17 02 03	plastic		0.3
17 04 05	Iron and steel		20.0
17 04 11	cables other than those classified under 17 04 10;		0.1
20 03 01	mixed municipal waste	Personnel hired to clean the wharf	Depending on the number of people engaged in construction works
Packaging waste			
15 01 01	paper and cardboard packaging	supply of materials and equipment, and staff	0.2
15 01 02	plastic packaging		0.1
15 01 03	Containers made of wood materials		0.5
15 01 04	Metal packaging		0.5
15 01 05	Composite / multilayer packaging		0.1

15 01 06	mixed packaging		0.5
15 01 07	glass packaging		0.05

Metal waste, such as shaped iron, construction iron and others that will be generated during the demolition of buildings, and preparation of the wharf for u nloading activities are expected to reach around 20 t. Waste will be collected and temporarily stored in a designated area until their transfer to natural persons or legal entities authorized to treat waste as per Article 35 and possessing a permit issued pursuant to Article 67, para. 4 or Complex Permit issued pursuant to Chapter 7, Section II EPA.

Municipal solid waste will be generated during clearing of the site and during exploitation of the facilities subject to the investment proposal. Solid waste f rom the dredger and barges will be stored on board of the vessels until its transportation to shore. Quantities will be insignificant and will be stored in containers on a specially designated area which meets the minimum technical requirements for tempora ry storage of hazardous and non-hazardous industrial and municipal waste. Generated waste will be transported to a depot specified by Rousse Municipality. The expected amount of solid waste to be generated is about 3.7 t per year.

Reconstruction and operation of the existing river port is expected to generate the following hazardous waste (Table IV.4.2.-2):

Table IV.4.2.-2 – Hazardous Waste

Code	Name	Waste generation activity	Total estimated amount in tons per year
13 02 05*	Non-chlorinated mineral-based engine, lubricating and gear oils	accidental spills occurring during machine operation	0.1
13 07 01;	waste diesel fuel	accidental spills occurring during machine operation	0.1
13 08 99	oil wastes not otherwise specified	accidental spills occurring during machine operation	0.1
15 01 10*	packaging containing residues of hazardous substances or contaminated by dangerous substances	from the supply of paint, oil, antifreeze, etc.	0.2
15 02 02*	absorbents, filtering materials	emergency	0.1

	(including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	repairs on site and staff	
16 06	Discarded accumulator batteries	Extraction site	0.2
20 01.36*	discarded electrical and electronic equipment other than that classified as 20 01 21 and 20 01 23 and 20 01 35	external lighting of the site	0.2
20 01 21	fluorescent lamps and mercury-containing lamps	lighting of the site	0.1

The amount of generated hazardous waste will be insignificant, given the relativel y small volume of construction work and the small number of machines and construction workers.

Hazardous waste generated on the premises will be collected in place of their formation, stored in steel drums and promptly transported to the site for temporar y storage of hazardous waste on the premises of the wharf. The site for temporary storage of hazardous waste is to meet the requirements of the relevant regulations, as follows:

● Ordinance on Packaging and Waste Packaging (SG. 19/2004);
● Ordinance on the Treatment and Transportation of Waste Oils and Petroleum Products (SG. 90/2005);
● Ordinance on the Treatment of Waste Motor Vehicles (SG. 104/2004);
● Ordinance on the Placing on the market of Electrical and Electronic Equipment, Treatment and Transportation of Waste Electrical and Electronic Equipment (SG. 36/2006).

Waste stored on the site for temporary storage of hazardous waste will be handed over to companies or physical persons possessing a permit issued pursuant to Article 67, para. 4 or Complex Permit issued pursuant to Chapter 7, Section II EPA. Transportation of hazardous waste will be carried out by specialized transport meeting the requirements of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). H azardous waste is to be accompanied by transport cards in accordance with the changed requirements of the Waste Management Act concerning registration documents for disposal of waste. Other waste will be disposed of following the terms of disposal of other hazardous waste.

Waste-related problems are not expected to occur on the sites subject to the investment proposal. Estimated quantities of waste that will be generated during reconstruction of the existing port and operation of the facilities are negligi ble, and therefore cannot have any significant impact on the environmental components.

Since activities will be carried out in the bed of the river, there is no immediate danger from direct contamination of these components on the extraction sites. Given the small number of machines and equipment for the extraction of aggregates

concentrated in certain sections of the river, such contamination would be limited, insignificant and short-term.

Likelihood of contamination of surface water exists in the event of disruption in the normal operating mode of the plant and equipment for the extraction of aggregates or natural disasters and emergency situations.

4.3. Hazardous Substances

Types of hazardous substances. Classification. Storage

According to the Protection against Harmful Effects of Chemical Substances Preparations and Products Act, (SG. 10/2000, amended SG 91/2002, SG 86/2003, SG 101/2005), the Act Amending the Protection against Harmful Effects of Chemical Substances Preparations and Products Act (SG 114/ 2003), and Government Decree No 316 with Ordinance on the Terms and Procedures for the Classification, Packaging and Labelling of New and Existing Chemical Substances and Products (SG. 5/2003, amended. suppl. SG 66/2004, SG. 50 and 57/2005), chemical substances and preparations are classified as hazardous if they provenly possess at least one of the following properties (Table IV.4.3. -1).

Table IV.4.3.-1
Properties of substances, preparations and products that define them as hazardous within the category of their classification

1. Explosive	8. Harmful
2. Oxidizing	9. Corrosive
3. Extremely flammable	10. Irritant
4. Highly flammable	11. Sensitizing *
5 flammable	12. Carcinogenic *
6. Highly toxic	13. Toxic to reproduction *
7. toxic	14. Mutagenic *
	15. Dangerous for the environment *

Chemicals classified as carcinogenic, mutagenic and toxic to reproduction (CMR) fall within Category 1, 2 and 3, which determine the degree of risk to humans and the severity of the measures to prevent potential harm associated with exposure of workers and the population (Government Decree No 130 of the Ordinance on Hazardous Chemical Substances, Preparations and Products Subject to Prohibition or Restrictions on the Marketing and Use (SG 69/2002, amended and supplemented issue. 62/2004) and Government Decree No 156 amending the Ordinance on Hazardous Chemical Substances, Preparations and Products Subject to Prohibition (SG. 62/2004).

The investor as employer is to comply with the requirements of health and environmental legislation and provide all required conditions for safe operation of their staff.

Demolition of existing wharf buildings and facilities requires use of construction machinery and equipment that may need to be serviced from time to time. There are a number of recommendations for the sites where such servicing takes place relating to the storage of oils, fuels and other hazardous substances.

It is recommended for construction machinery and equipment to be fuelled by diesel that complies with Ordinance No 17 on Standards for Content of Lead, Sulphur and Other Environmentally Harmful Substances (SG. 97/1999) (*Table IV.4.3. -2*).

Activities related to demolition and clearing of the wharf may cause spills of oil, insoluble substances or other mechanical impurities that will spread directly on th e site. The drainage system on site is to be revised and brought into working order before the start of demolition works in order to prevent any pollution of the Danube near the wharf.

Table IV.4.3.-2: Toxicological characteristics of the most commonly us ed hazardous substances

Chemical substance or preparatio n CAS No	**Hazard Symbol**	**Adverse health effects**	**risk exposure**
Diesel fuel 94114-59-7	Xn Harmful	Danger of cumulative effects. Allergen. It damages the nervous system, skin, blood formation, liver, kidneys. Mutagen. Dangerous for the environment - especially to aquatic organisms.	Development of chronic diseases if safety regulations are not complied with.
Cement	*Irritant* Allergen	Irritant to skin, eyes and respiratory tract. Allergen. Contains contaminants (Cr-VI, Cd, Co, Ni) and is controlled by Government Decree 156/2004). Causes inflammation and allergic reactions of skin and mucosae.	Development of chronic diseases if safety regulations are not complied with.
Paints, varnishes, adhesives, polymers	*Xi Irritant* *Xn Harmful*	Damage to the nervous system, liver, endocrine system, respiratory system, skin and mucous membranes. Allergic diseases.	Development of chronic diseases if safety regulations are not complied with.

Engines of machinery and equipmen t for the extraction of aggregates from the river are a source of contamination by hazardous substances.

Minimum fuel reserves stored on the extraction sites are to comply with the requirements for occupational safety and protection of river waters and aq uatic organisms.

Hazardous substances and mixtures are not expected to have any adverse effect on the populations of closely located settlements, either during reconstruction of the existing port or during operation of the sites object of the investment p roposal.

4.4. Quantity and composition of industrial, faecal and rain waste water. Treatment facilities.

Waste streams generated during implementation of the investment proposal

1) Industrial Wastewater

Applied technology of extraction, carriage and unloading of materials shows that no industrial wastewater will be generated.

2) Domestic Wastewater

- *Mishka Section*

Domestic wastewater will be generated on the dredger and transport barges hired from an outside company.

According to the projections of the investme nt proposal, the dredger crew will consist of 6 people, and the barge crew of 3. Three barges will be used to transport material extracted from Mishka area.

According to expert assessment the total volume of domestic wastewater will amount to about 0.75 m^3 per working day.

Article 9.03, item 1 of the Regulations for Navigation in the Bulgarian Section of the Danube River and the Specific Recommendations of the Danube Commission to the Competent Authorities of the Danube countries for the Implementation of Basic Rules of Sailing the Danube (supplement to SG. 55/2005)"prohibits discharge of domestic wastewater into the river.

Wastewater mixtures are to be discharged at specifically designated waste collection points in compliance with Art. 9.05 Item 4 of th e aforementioned Regulations.

Article 9.06, item 1 states that wastewater mixtures and domestic wastewater from ships are not considered contaminated in terms of protecting the waters of the Danube, if indicators of pollution fall within the following lim its:

- E.Coli Index - 1000;
- suspended solids - 50 mg / l;
- BOD5 - 50 mg / l;
- CCO-Cr - 150 mg / l.

These parameters can be reached after special treatment of the water; however, dilution with water during treatment is not allowed.

According to Article 9.07 discharge in the waterway of wastewater mixtures treated on board vessels is allowed if the maximum concentration of output residues they contain permanently without prior dilution comply with the requirements set out in Art. 9.06 of the Regulations, i.e. with the aforementioned values.

- *Wharf and unloading site*

Domestic wastewater generated by construction workers
The investment proposal does not provide for generation of domestic wastewater during reconstruction of the site. Chemical toilets maintained by a specialized company will be provided on site.

Domestic wastewater generated by workers and employees during extraction activities

Domestic wastewater will be generated during extraction activities in the administrative and residential facilities on site. Quantities shall not exceed 0.5 m^3 per working day given the small staff of 10 people.
The site is to be equipped with a small treatment plant type ACO Clara 5 -10 with hydraulic load of 0.75 to 1.05 m3 per day. Inflow and outflow of the plant is controlled by gravity.

Purified water will be discharged in the Danube owing not least to the certified parameters of the plant allowing a degree of water purification high enough for a first degree body of water (the Danube is a third-category body of water).

Implementation of the investment proposal requires obtaining of Permit for use of the Danube for extraction of river sediments under the Water Act, and a Permit for use of the Danube for discharge of treated municipal waste water.

3) Storm water

- *Mishka Section*

The extraction area is located in the bed of the Danube; therefore storm water streams will not be formed.

- *Wharf and unloading site*

As the site is situated on the river bank storm water streams will drain away in the surrounding land and the river.

4.5. Hazardous energy sources

Subject and purpose of the project is the extraction of sand and gravel (alluvial deposits) from the bed of the Danube. According to a notification submitted to the MEW extracted sand and gravel will be used as raw material in the production of

aggregates by GRAVEL AND SAND PITS BULGARIA EAD. Extraction as per this proposal will be done by using floating multi-bucket dredger. Extracted material will be loaded directly onto self-propelled barges for transportation to a wharf located in the Eastern Industrial Zone of the town of Rousse. Material will be unloaded on the wharf by a 15-ton grabbing jib crane.

The nearest site subject to protection against extraction works impact is the Mishka Island. According to layouts of sections for extraction of alluvial deposits with floating devices prepared by the Executive Agency for Exploration and Maintenance of the Danube the permitted extraction area will be situated at a minimum distance of 100 m from the north shore of the Mishka Island and a maximum distance of 250 m.

The dredger will be positioned on the extraction site with the help of a self-propelled barge that will tow the dredger to the required location. This operation will take place twice a year: at the start of extraction works and at the end of the season in order to put away the dredger for the winter.

All these activities will generate noise emissions in their surroundings and the environment. In order to assess these emissions the investor conducted independent measurements of the acoustic load of similar sources. The measurements were conducted in the month of August 2013. The measured noise level emitted from a floating bucket dredger is 86.5 dB (A). At a distance of 100 meters (the shortest distance to the Mishka Island) the level will be reduced by about 50dB(A)as per Appendix No 3 item 4 to Art. 6 of Ordinance No 6/2006 of the Ministry of Health and the Ministry of Environment and Waters, i.e. the noise level on the shore of the Mishka Island will be around 36,5 dB (A).This level is below the limit of 40 dB (A) specified by Ordinance No 6/2006 of the Ministry of Health and the Ministry of Environment and Waters for quiet zones outside agglomerations, although the Mishka Island is located in a water transportation corridor with heavy traffic at times and should not be classified as a quiet area outside agglomerations. Dredged material will be carried from the bucket dredger to the wharf at the Eastern Industrial Zone of Rousse by a barge according to the investment proposal. The noise emission of a similar barge that sets off fully loaded from the dredger is 79.5 dB (A). At a distance of 100 to 110 m (10 m is the width of the dredger) the noise level that will reach the Mishka Island is 29.5 dB (A). Upon simultaneous operation of the two sources of noise the total noise level reaching Mishka Island would be 37.3 dB (A), again lower than the aforementioned limit of 40 dB (A).

The noise emitted by the simultaneous operation of the dredger and a barge (or a passing vessel, which will be far enough from the dredger) sailing away will in no way affect the acoustic environment in the nearby residential areas of the village of Ryahovo and the village of Babovo, which are situated at a distance of 1 km to the south-west and 2 km to the southeast respectively of the extraction site on the Danube.

Other activities provided by the investment proposal will be carried out on the territory of the private production site situated in the Eastern Industrial Zone of Rousse, near the very busy transport corridor Danube Bridge 1. Noise emissions will be typical of port operations, reaching about 67 - 68 dB(A)according to the measurements cited above and usually within the limit of 70 dB (A) set by Ordinance No 6/2006 of the

Ministry of Health and the Ministry of Environment and Waters along the borders of the site. A new 15-ton gantry crane with grab powered by electricity and grab volume of 4.5 m^3 will replace the two grab bucket cranes with bucket volume of 2.5 m^3 that are currently under exploitation This replacement will improve the acoustic environment near the wharf as electrically powered cranes emit low noise.

Some additional noise pollution will occur during the planned reconstruction of the wharf. Existing buildings will be demolished and site for unloading of material and buffer depot for temporary storage of alluvial materials will be prepared. Caravans along the south fence will meet the housing and administration needs by providing a checkpoint, administration office, changing room with showers and toilets, accommodation for eating with kitchenette, and etc. This reorganization will provide additional shielding of ground noise emitted from the site. Generally, noise emissions from the proposed improvements will be short-term and will load insignificantly the overall acoustic environment of the Eastern Industrial Zone of Rousse.

The above cited noise emissions will not affect the acoustic environment in the residential area of Rousse due to the large distances and multiple screening objects.

Distance downriver from the extraction area to the bridge over the Danube in Rousse adjacent to the site of the investor is 29.5 km. Works on the excavation site will not affect the acoustic environment of the Mishka Island or the nearby residential areas of Ryahovo and Babovo.

The Investment Proposal for extraction of river sediments (sand and gravel) has no direct connection to any other approved development plan; therefore accumulation of noise emissions from the current development and any other developed or future projects is currently not expected.

Implementation of the investment proposal could be a source of vibrations generated by the floating dredger and self-propelled barges for extraction and transportation of aggregates from the Danube. Such vibrations could affect workers operating the equipment; therefore appropriate precautions should be taken. Regular system maintenance and support of machinery and equipment would prevent the occurrence of undesirable and dangerous vibrations. The possible occurrence of transient vibration will be limited to the platform of the floating facility. They will not reach Mishka Island situated close by, or the nearby residential areas of Ryahovo and Babovo.

Ground equipment operating on the wharf for unloading of sand and gravel could also cause temporary undesirable vibrations. Such vibrations will be limited within the area of the site and the Investor shall apply safety measures to prevent the occurrence of additional vibrations.

Powering of the wharf with electricity will be provided by existing technical communications, which comply with regulatory requirements for the construction of electrical networks and installations. Construction of new electrical facilities is not planned so occurrence of excessive electromagnetic radiation in the environment is not expected.

Implementation of the investment proposal includes extraction and carriage of natural resources, namely sand and gravel. These materials have a low content of natural radio nuclides that is typical of the region, so additional radiation load in the environment during their extraction and transportation is not to be expected.

II. ALTERNATIVE IMPLEMENTATIONS OF THE INVESTMENT PROPOSAL, INCLUDING A "ZERO" ALTERNATIVE

1. Alternative locations or technology

Extraction of aggregates from the riverbed of the Bulgarian -Romanian section of the Danube dates back more than forty years. Various Bulgarian and Romanian organizations and companies have been extracting alluvial deposits (mainly gravel and sand) for the production of concrete products and constructing embankments to improve the ground surface during various construction activities. Extraction of alluvial sediments (dredging) is performed periodically in the critical sections in order to maintain shipping (navigation) conditions in the Lower Danube. Dredging or extraction of inert materials from the bed of the Danube is coordinated and controlled by the Executive Agency for Exploration and Maintenance of the Danube.

The technology for extraction of sediment material from the Danube River is based on the use of floating multi bucket dredger type KS 250. It has no alternative in the given conditions, namely the presence of 150 mm boulders. The specific extraction process consists of removal of sediment material from the bottom of the river by scraper (250-liter) buckets.

Unloading of alluvial materials extracted by the buckets will be done directly on the drying sieve of the dredger. Dewatered alluvial materials will be transferred to the self-propelled barges via rubber belt conveyors and unloaded from the barges onto the wharf by a 15-ton grabbing jib crane. Completely drained materials will be loaded on dumper trucks by front loaders and transported to a nearby sorting and treatment installation for primary processing, which is not the object of the current investment proposal.

Given the above, the project has no alternative in terms of location or extraction technology.

There are alternatives in terms of frequency and deadlines for removal of alluvial sediments from the bed of the Danube. They will be organized to protect rare and protected species.

2. Zero Alternative

"Zero" alternative reviews the current elements of the environment and socio - economic conditions as if the investment propos al would not be implemented

The investment proposal provides for the extraction of sand and gravel through advanced technological solutions within a relatively small area of the Danube. All regulatory requirements for environmental protection will be comp lied with. Health of workers on site and the population of the nearby villages will not be jeopardized.

Extraction will not generate mining waste or emissions of hazardous and noxious substances. These circumstances give reason not to assume a "zero" alter native for the investment plan.

Furthermore, the so-called "zero" alternative would impede the improvement of navigation conditions. A "Zero" alternative would prevent the utilization of a natural resource which existence has been proven by exploration an d which guarantees a stable output owing to the sustainable sediment load of the Danube.

III. CHARACTERISTICS OF THE ENVIRONMENT OF THE INVESTMENT PROPOSAL SITE AND ENVIRONMENTAL IMPACT PREDICTION

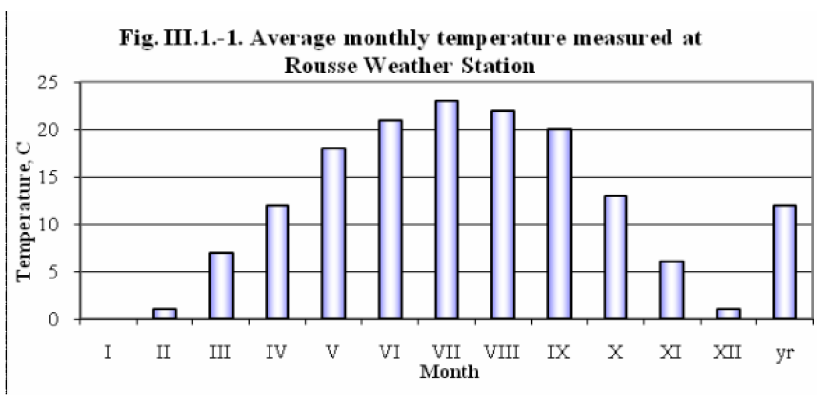
1. Air

Climatic and meteorological data

The area of Rousse falls within the temperate continental climatic zone, which is a continuation of the Central European temperate continental climate zone. The climate is formed under the influence of different moist oceanic air masses transformed by local topography, and by northeast continental air masses during the cold months. The Danube has a great effect on the local climate. Cold Arctic air masses coming from the north and tropical air masses from the south have a lesser effect on the climate.

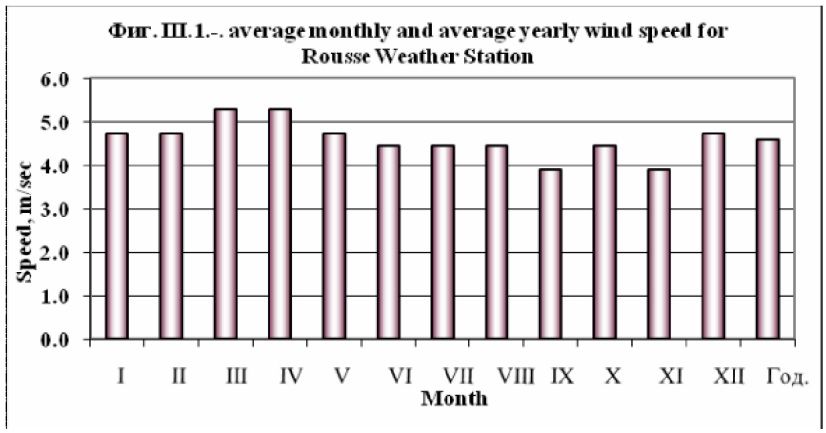
Temperature

Winters are characteristically cold (lowest observed temperature was -27.7°C in January), and summers are hot (highest observed temperature was +44.0°C in July). Diurnal temperature range varies from 6.0°C in December to 12.6°C in August. The annual average temperature is 12.0°C. Variations in average monthly temperatures are shown in fig. III.1. -1.

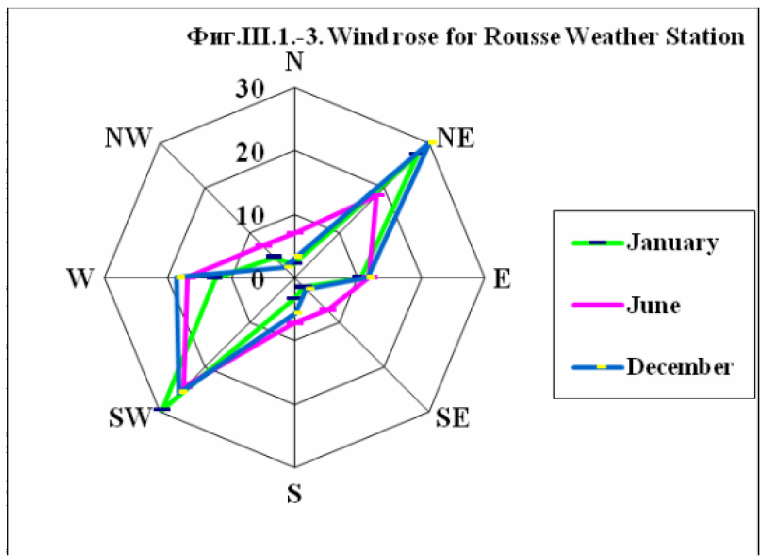


Wind

The average wind speed as per data collected by Rousse Weather Station is 4.6 m/s. It is highest in March and April (5.3 m/s) and lowest in S eptember and November (around 3.9 m/s). The share of windless periods is 24.4%.



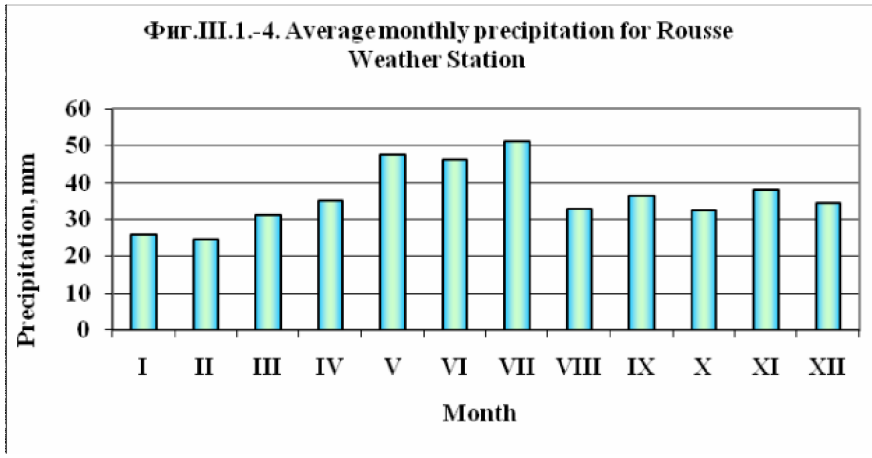
Wind Rose



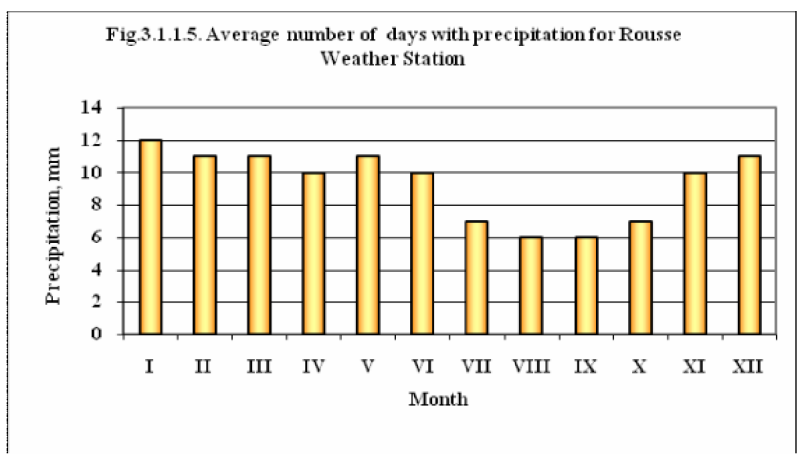
The wind rose for Rousse Weather Station presented in Fig. III.1. -3 shows that the main wind direction during most of the year is from northeast (about 23% of cases, mainly in the winter months) and southwest (about 23% of cases, mainly during the summer months). Winds blowing from the north and south are significantly lower in frequency and cover about 5% of cases. The main reason for the cited wind direction is the course of the Danube near the city, which coincides in direction (from southwest to northeast).

Precipitation

The amount of average monthly precipitation as per data collected by Rousse Weather Station is presented in Fig. III.1.4. The lowest amount of precipitation falls in January and February (about 25 mm) and the highest between May and July (up to 51 mm). The average annual precipitation is about 450 mm. In some years, these values range from 340 to 780 mm.



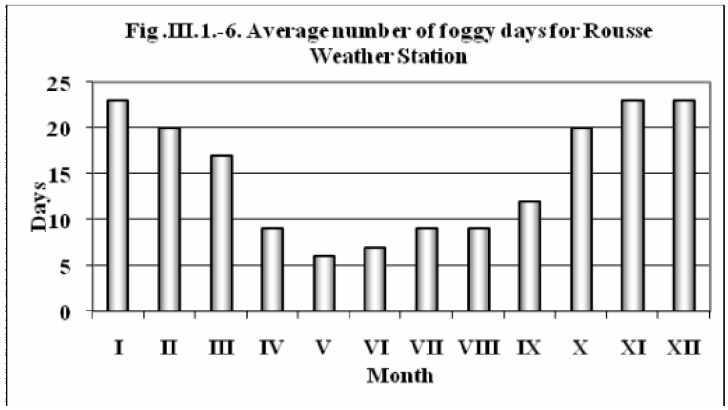
The average number of days with precipitation by month is shown in Fig. III.1. -5. The annual number of days with precipitation reaches 112, which is about 30% of the days in the calendar year. Both the amount of precipita tion and the number of wet days is directly related to ambient air quality (AAQ) in the area, particularly with regard to particulate matter (PM). Precipitation partially dissolves gaseous pollutants and causes co-precipitation of particulate pollutants. W et roads slow the process of PM suspension into the air until their drying -out. It is a known fact that days with precipitation exhibit a significant reduction in the concentrations of PM in ambient air of settlements. The opposite process occurs when road surfaces are dry. Poorly maintained infrastructure (sidewalks, lawns, illegal parking lots, etc.)leads to rainfalls washing down a significant amount of soil on the roadway forming unwanted depositions. After drying out such depositions are suspended in t he air by traffic and this often leads to excessive pollution.



Fog

Fig. III.1.-6 presents data on the average number of days with fog as per data collected by Rousse Weather Station. These data include all cases of fog, includin g mist and fog lasting more than one day. Thick fog lasting more than one day is most often formed in December (average 11.4 days) and January (average 10.8 days). Fog is produced by inversion conditions (highly resistant atmosphere). The wind speed is low and rarely exceeds 1 m / sec. The lack of turbulence worsens pollutant

dissipation and creates conditions for higher accumulation of pollutants. Fog lasting more than one day increases such tendencies.



Ambient Air Quality

Recent data on air quality in the region of Rousse may be obtained from the 2011 - 2013 Environmental Condition Report of RIEW Ruse.

Data coming from real-time automatic air quality control systems in Ruse show no significant change in air quality in comparison to 2012. The levels of primary pollutants sulphur and nitrogen oxides, carbon monoxide, benzene, and ozone remain low. The number of registered PM10 exceedences in Rousse in 2013 is higher by 14% than that in 2012, and the annual concentration is higher than normal - 46.62 mkg/m^3.

Implementation of this investment plan is not expected to significantly affect air quality in the city of Rousse. Expected emissions from the diesel-fuelled dredger and barges would be minor and separated by a considerable distance from the central urban area of the city of Ruse. Similar assumption can be made for emissions from diesel engines of the four dump trucks and the front loader operating on the wharf.

Construction works (demolition of existing buildings on the wharf) are expected to increase generation of construction dust. They are to be finished within one month.

The EIA Repost is to use the latest available official data on ambient air quality in the area. Special attention should be paid to particulate matter pollution(PM-10), as its concentration is higher in the town of Rousse.

2. Surface and groundwater

Surface water (hydrographical network)

The area of the investment proposal falls within the Danube River Basin, which is part of the international river basin of the Danube. Northern Bulgaria is part of the Danube watershed. The largest tributary of the Danube in the area is the Rusensky Lom River. Numerous gullies and ravines that descend towards the bed of the Danube in this section serve as natural drainage point of rain and snow water.

Discharge of the river changes in accordance with the existing physical -geographical conditions of northern Bulgaria and the adjacent lands of the Danube coast in Central Europe. The highest discharge of the Danube is in April and May and sometimes in June. Low discharge is most common during the period from September to November, reaching the minimum in October.

The Danube is the second longest river in Europe (after the Volga). It is the only major river in Europe that flows from the west to the east.

The Danube originates in the Baar plateau in the Black Forest of Germany (1078 m above sea level)at the confluence of two smaller rivers, Brigach and Breg situated at 1.4 km from the town of Donaueschingen; hence the name Danube. Beside the theory that the Danube originates in the town of Donaueschingen at the confluence of the rivers Brigach and Breg, there is also a theory that claims the origin of the Danube is the Danube spring, which originates on the premises of the castle Fürstlich Fürstenbergische Schloss near Donaueschingen. This karst spring was captured in the 18th century and its waterswere taken underground below the castle by means of pipelines. In 1895 Adolf Heer built a sculpture above the basin of the Danube spring that depicts mother Baar showing the way to the young Danube. A few hundred meters away the spring flows into the Brigach, which in turn flows into the Breg after a kilometre and a half thus forming the Danube. The Danube then flows southeast for 2,859 km. and empties into the Black Sea via the Danube Delta in Romania (bordering on Ukraine). Average river discharge before the Danube Delta is 6500 m^3/sec.

The Danube flows through 10 countries: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Moldova and Ukraine. The basin area of the river is 817,000 $km^{2.}$ The Danube branches into three main distributaries before emptying into the Black sea, Chilia, Sulina, and Sfântul Gheorghe (Saint George). The Chilia distributary is the northernmost and forms the border between Romania and Ukraine. Sulina, the middle distributary, is the deepest one.

The Danube was included on a list prepared for World Water Day 2007 as one of most endangered rivers in the world.

The Danube is the only major European river that flows from west to east. The Danube originates in the Black Forest of Germany, then flows for 2,852 km. and empties into the Black Sea via the Danube Delta (4300 km^2) in Romania and Ukraine.

The Danube's length, unlike that of most rivers, is measured from the mouth, specifically the old lighthouse in Sulina, not the source. That is why river length does not include the main branch of the delta and the river Breg, the source of the Danube. Catchment area of the river has an area of 802,266 km^2.

According to the definition of surface water bodies by the Danube River Basin Management, the River Danube is a water body code BG1DU000R001, name Danube RWB01, and length 650.65 km. from the border village of Novo Selo to the border town of Silistra.

Ground waters - hydrogeological conditions and factors influencing formation of ground water

The climate in Bulgaria and its main elements are essential for surface and groundwater balance. In terms of climate, Bulgaria, and the Danube River Basin Directorate in particular, is located at the southern end of the temperate continental zone, and is under the influence of the subtropical (Mediterranean) climatic area.

The relationship between groundwater with active water exchange, hydrographical network density and recharge is quite narrow and clearly demonstrated by annual water flow curves. Groundwater in many hydrogeological basins (valleys and karst basins) is formed mainly by stream flow that has infiltrated the ground, which is relatively well studied.

Rock formations involved in the construction of the crust in our country (and the Danube basin in particular) are of different age, mineralogical -petrographic composition and origin.

Extremely important factor in the chemical composition and quantitative accumul ation (water availability) of groundwater is precisely the structure of rocks and tectonic structure.

Based on the main physic-geographical and geological factors that determine the distribution, origin, quantity, regime and dynamics of different types of groundwater, Bulgaria is divided into three hydrological regions: Moesian, Balkanidean, and Rila - Rhodopean. The Danube River Basin Directorate manages the Moesian and Balkanidean hydrogeological region. The area of the investment proposal falls within the Moesian hydrogeological region.

It overlaps with the Danube Hilly Plain morphological area and the Moesian Plate tectonic area and includes the Kula area, i.e. parts of the Southern Carpathians. The northern Pre-Balkan fault serves as the southern bounda ry of the region.

The wide variety of rocks of different lithological composition, physical condition and structural position involved in the construction of the Moesian hydrogeological region has enabled the formation of different types of groundwater –porous, karst and fissure, pressure and non-pressure, divided into bodies of water that are reviewed as separate areas.

<u>Water in alluvial deposits</u>

These deposits are relatively small in area, but they have accumulated large amounts of fresh groundwater with important practical significance. These are the alluvial deposits of the Danube and its right-side tributaries.

Alluvial deposits of the Danube are the most widely spread in the Moesian region. They have accumulated in the old meanders of the river thu s forming the Danubian lowlands. The alluvium of these lowlands has formed unconfined or semi-confined aquifers. Groundwater has a hydraulic connection with the river, which affects speed and inflow.

The layer of alluvium of the Danube River rests above a substratum of varying lithological composition and aquiferous quality, allowing water from older aquifers to penetrate the alluvium.

Karst Water

Karst water in the Moesian hydrogeological region is connected to the carbonate sediments of the Sarmatian Stage, Senonian series, Aptian, Barremian, and Valanginian stage, and Late Jurassicand Middle Triassic epoch. The sediments differ in lithification and karstification, hence their varying aquiferous quality. Aquifers from the Sarmatian Stage, Aptian, Barremian, and Valanginian stage and upper Jurassic epoch have great practical significance. Unconfined and confined aquifers were formed depending on their location. Karstified carbonate rocks have huge water absorption and permeability capacity that contributes to the sharp decrease in surface runoff in some parts of the region, or its absence altogether.

Ground water is recharged mainly by rainwater. Ground water discharges into the hydrographic network of rivers, along the hills and valleys of which flow a large number of springs.

Late Jurassic and Late Cretaceous (Malmian -Valanginian) Karst Water

The Upper Jurassic-Valanginian carbonate complex covers a wide area within the Moesian hydrogeological region. East of the river Yantra the Upper Jurassic and Valanginian carbonate complex forms a common aquifer, which is represented by white, thick and strong limestone, greydolomitized limestone and dolomite. Limestone and dolomites are fissured and karstified by a number of caverns with good water storage capacity and output of 532 to 1240 m. The thickness and the water storage capacity of the carbonate complex contribute to the accumulation of a large amount of underground water into a general aquifer complex. There are confined and unconfined aquifers. Aquifers in the central part of the Northern Bulgarian anteclise where the complex touches the surface are unconfined, and the rest are confined. Late Jurassic and Early Cretaceous deposits develop to the north -northeast, forming radially divergent flow of groundwater to the river Danube and Romania. Therefore groundwater in this complex is transboundary.

According to the definition of ground water bodies by the Danube River Basin Management, the territory covers three groundwater bodies:

BG1G0000Qa1010 - porous waters in Quaternary Brashlyanska valley
- water body area - 217 km^2;
- type - confined;
- Lithological structure of the aquifer - gravels and sands and sandy clays
- average thickness - 9 m;
- Average rate of filtration - 139 m / day

BG1G0000K1b041 – karst waters in the Rousse formation
- water body area - 6592 km^2;
- type - confined;

- Lithological structure of the aquifer – fissured and karstified limestone;
- average thickness - 160 m;
- Average rate of filtration – 3 m / day

BG1G0000J3K051 - karst waters in the Malmian-Valanginian basin
- water body area - 13033 km^2;
- type - confined;
- Lithological structure of the aquifer – unevenly karstified and fissured limestone with dolomites and dolomitized limestone, siltstones, sandy marl;
- average thickness - 810 m;
- Average rate of filtration – 3 m / day

Name of the groundwater body (GWB,) coordinated with Romania, that is outside of the Investment Proposal area: karst and porous waters in Neogen – Sarmat – Dobrudzha;
GWB code:BG1G000000N049
GWB area in km²: 3308
GIS layer: 3
Type of collector: Karst;
Type of GWB: confined;
Lithological structure of GWB : limestone, sands, sandstones and clays;
Characteristics of layers covering GWB recharge area: loess, loam and clay;
Average thickness of GWB , m: 40.0 - 60.0;
Average water conductivity, m²/day: 200-250;
Average coefficient of filtration, m /day: 10-20 (to 40);
GWB recharge area, km²: 3308;
Average modulus of groundwater discharge, l/sec/km²: 2.0;
Natural GWB resources, l / sec: 1310;
Direction and degree of exchange with surface water: one direction;
Total GWB water abstraction, l / sec: 391;
Impact of human activity on the chemical status of GWB: 0;
Protective effect of coating layers: Favourable: 0%, Average: 50% Poor: 50%

Expected impact on surface and groundwater

Extraction of sand and gravel from alluvial deposits in the bed of the Danube will begin upon receipt of authorization for use of the water body under Art. 46, para. 1, item 4 and Art. 52, para. 1, item 3 of the Water Act.

The Investment Proposal provides for the extraction of sand and gravel through advanced technological solutions from a relatively small area of the water body, the Danube.

Negative impacts on the hydrology of the area or water quality are not expected. The site will not be supplied with water. Wastewater will not be generated. The Danube will not be polluted by the proposed activity for extraction of building materials.

Water Use on Site

The technology for extraction of sediment material from the Danube River is based on the use of floating multi bucket dredger type KS 250. The specific extraction

process consists of removal of sediment material from the bottom of the river by scraper (250-liter) buckets.

Unloading of alluvial materials extracted by the buckets will be done directly on the drying sieve of the dredger. Dewatered alluvial materials will be transferred to self-propelled barges via rubber belt conveyors and unloaded from the barges onto the wharf by a 15-ton grabbing jib crane. Completely drained materials will be loaded on dumper trucks by front loaders and transported to a nearby sorting and treatment installation for primary processing, which is not the object of the current investment proposal.

Drinking water source will not be used on the site for extraction of sand and gravel from Danubian bed sediments. Drinking water will be provided to workers on the dredger and barges from an external source by the company carrying out the extraction and transport. Required water quantities for domestic use will be stored in special tanks on the dredger and barges respectively. Tanks will be refilled at pre-defined spots as arranged by the outside company owner of the dredger and barges.

Necessary water quantities during wharf operation for staffing of 10 people will be about 0.5 m^3 per working day. Personnel's personal hygiene needs will be met at the housing and administration section of the site. Water will be supplied via the urban water supply system on the base of a contract with the water operator.

Amount, composition and method of treatment of generated wastewater

Implementation of the project is related to generation of the following waste streams: municipal waste mixtures and domestic wastewater that will be generated on the extraction facility (dredger) and barges. The dredger and transport barges will be hired from an outside company.

The investment proposal does not provide for generation of domestic sewage during reconstruction of the wharf. It envisages use of chemical toilets maintained by a specialized company.

The site is to be equipped with a small treatment plant type ACO Clara 5-10 with capacity from 0.75 to 1.05 m^3/day. Discharge of treated domestic sewage requires issuance of permit for use of water body, the Danube.

Other activities related to the implementation of the Investment Proposal are not envisaged.

Prediction and assessment of expected changes in the regime of watercourses and groundwater

In summary, implementation of the project will not cause surface water pollution. This is due to the project not including discharge of contaminated wastewater.

With regard to groundwater it can be concluded that the extraction of sand and gravel from alluvial deposits from the bed of the Danube will not cause contamination or deterioration, as:

• release of pollutants in surface and groundwater is excluded;
• disposal of priority substances that can lead to indirect discharge of pollutants in ground water is excluded;
• activities on the surface or in the groundwater body that can lead to indirect release of pollutants in ground water are excluded;
• use of materials containing priority substances in the building of structures, engineering and construction equipment and others that come or could come into contact with groundwater and contaminate it are excluded;
• mixing of groundwater of different quality through groundwater facilities is excluded;
• injection of natural gas or liquefied petroleum gas in groundwater is excluded.

3. Land and soil

According to the generalized classification of soils i n Bulgaria (as per FAO), the soils in the project area can be characterized as follows:

Orders - E - soils with appreciable accumulation of surface saturated with bases of organic matter.

Types: Chernozems, CH.
Subtype: gleyic, CHg.

Chernozems are known as calcium-humus soils widespread in continental and temperate regions of Europe, Asia and North America. They were classified as a separate soil type for the first time by the Russian soil scientist V. Dokuchaev in 1883. He called them "the king of soils , the major riches of Russia."

Wide variety of soils in our country is due largely to chernozems. They are distributed in North Bulgaria, where they occupy almost entirely the lower forest belt of the western and central part of the Danube (Moesian) Hilly Plain, southern Dobruja plateau and part of Ludogorie. These lands cover about 20% of the total area of the country. Chernozems are formed on loess, loess sediments, clays, marls and limestones in the presence of grassland-steppe and forest-steppe vegetation. The most favourable conditions for their development and formation are present in areas with forb and cereal grasses. These conditions and alternating wet and dry periods during the year support humification, saturation of humus with calcium and leachin g of carbonates.

Carbonates accumulate at different depths and range from 0 to 20%, as a result of which chernozems are divided into four subtypes: carbonate (brown), simple (leached), lessived (degraded) and gleyic (meadow). Depending on the thickness of the humus horizon or humus content chernozems are divided into the following types: weak (with humus horizon to 40 cm), average (40 -80 cm) and strong (over 80 cm).

Prediction and assessment of possible negative impact on soil

Processes, employed durin g extraction of sand and gravel are directly related to the physical and mechanical characteristics of alluvial materials subject to extraction.

Alluvial deposits are naturally precipitated relatively compacted and unconsolidated rocks classified as heavy soils of the earth. They can be extracted directly from their location using floating dredgers.

Transportation of raw materials will be done with specialized self -propelled barges for bulk material with load capacity of 1 000 t. Unloading of raw materi al from the barges on the coast will be done on the wharf by a jib crane with grabs.

Drilling and blasting methods will not be applied. Crushers will not be installed. The investment plan will be implemented on a relatively small section of the Danube, nearly 2.6 km in length.

4. Subsurface

The below cartogram of Bulgaria with scale of 1:100000 (Fig. III.4. -1) shows that the project area falls within the Gryaka and Vetovo map sheets.

Fig. III.4.-1: geological map with scale of 1:100000
★ - location of site

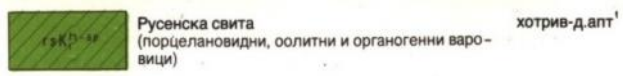
Stratigraphy of the area is as follows:

THE CRETACEOUS

Cretaceous system is widely developed and is divided into two groups - Razgrad, Rousse and an informal litho-stratigraphic unit –greensand-marl-sandstone formation. Along the coastal strip of the Danube River the study area revealed deposits of the Rousse group.

Rousse group

★



Porcelain-like, oolithic and organogenic limestones – Hauterivian and Early Aptean Age

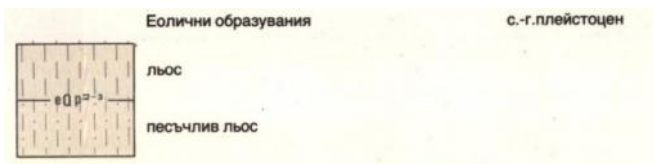
The name was introduced by Bonchev (1957) as "Roussel imestones." The rank was determined by Nikolov (1969), and the lectostratotype at the village of Basarbovo, Rousse Regionwas designated by Nikolov, Ruskova (1987).

The lower limit of the Kaspichan Group is lithologically sharp (P -1 Chereshovo). The limit of Razgrad Group is normal with wedged lateral contacts (C -1, C-2 and C-4 Kubrat). The upper border is merging with greensand-marl-sandstone and sand and kaolin formation. Such is its nature with the Neogen group and Quaternary formations.

Rousse formation consists of irregularly changing strong, solid, light brown to white porcelain and porcelain-like limestone, oolithic limestone and thick layers of organogenic limestone, composed of recrystallized corals, bryozoa, requiennii and others. In most cases, limestones are cracked, cavernous, with calcite precipitations.

The thickness of the Rouse formation reaches up to 490 m (P -1 Chereshovo). Its stratigraphic range, according to Nikolov and Ruskova (1987), is Hauterivian -Aptean.

QUATERNARY PERIOD
Aeolian Formations



loess and sandy loess Middle-Upper Pleistocene

Loess is a widely spread Aeolian formation. It is a gradual transition over Lower Pleistocene clays.
Loess is a pale yellow, friable, light, porous, slightly coherent clay aleurolitic rock. It i s calcareous and stands as angular grains, crusts or concretions of different shapes and sizes - "Loesskindchen" (“little loess kids”). Loess stands in either steep or vertical faces. Loess becomes gravy when saturated with water and forms steppe minor depressions.

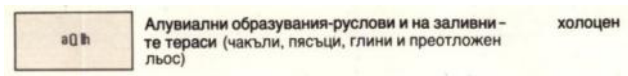
From north to south, the clay component is gradually increasing, and the aleurolitic and sand component decreasing respectively. Based on the ratio of sand, clay, and aleurolite there is true loess and sandy loess.

Sandy loess forms a narrow strip along the Pobrezhie which southern boundary follows approximately the line of villages of Nova Cherna, Malko Vranovo and Borisovo. To the south of this line there is true loess. Soil horizons buried in loess are

rich in humus, dark brown, loose soils or weathered clay horizons. There are five buried soils in the north coming to only two in the south.

The thickness of the loess complex increases from 10 m in the south to 40 m in the north along the Danube between the villages of Nova Cherna and Slivo pol e. We have adopted that the loess is Aeolian in origin. The main source of material has been probably formed by Danubian floods. The age of the loess complex is still undetermined, but may be taken to be Middle -Upper Pleistocene.

Alluvial formations



Mainstream and Floodplain Alluvium(gravel, sand, clay and redeposited loess) – Holocene

Pleistocene alluvium is found on the Danubian terraces in the Pobrezhie. Terrace deposits are formed primarily on the karstified and denuded limestone of Rousse Group and probably on sediments of the greensand-marl-sandstone formation in the vicinity of the town of Rousse. They consist of well smoothed gravel fragments of different size mixed with medium and coarse sand. Sediments on fluvial terraces are covered by alluvial red Aeolian clays and loess complex. With the exception of the first fluvial terrace, the other can be found only by drilling.

Thickness is limited within 3 to 14 m for the separate terraces. The first fluvial terrace is the most widely developed. It is composed of alluvial materials that can be found in separate sections near the village of Marten, Slivo pole, Babovo and Golyamo Vranovo. Porcelain-like limestone of the Rousse Groupnear the last village is covered by sands and gravels with thickness of 7 m. Sands are medium to coarse, grey-yellowish, among which appear streaks and lenses of gravel. Fragments are well smoothed with a size of 0.4 cm to 12 cm. Limestone, milky quartz, flint and rarely sandstone is present. The aforementioned materials are covered by 2-3 m of redeposited loess and loess sands.

Seismic Activity

According to the seismic zoning map of Bulgaria, SG 102/2005, the area under consideration is characterized by seismic intensity of the VIIIth degree on the Medvedev–Sponheuer–Karnik scale and seismic coefficient of 0.27.

Natural resources

There are no registered natural resources in the area of implementation of the investment proposal.

Prediction and assessment of possible negative impact on subsurface

Investment proposal for the extraction of sand and gravel deposits from the bed of the Danube will have no impact on the subsurface. Processes, employed during

extraction of sand and gravel are directly related to the physical and mechanical characteristics of alluvial materials subject to extraction.

Drilling and blasting methods will not be applied. Crushers will not be installed. The investment plan will be implemented on a relatively small section of the Danube, nearly 2.6 km in length.

5. Flora and Fauna. Protected areas and zones

5.1. Biodiversity

Flora

Vascular plants: According to the floristic zoning adopted in Flora of Bulgaria (vol. I – X, 1962-1995) the section of the Danube River (from km 462.0 to km 459.4) where extraction of sand and gravel will take place is the northern boundary of North-eastern Bulgaria floristic region.

According to geobotanical zoning (in Bondev, 1997) the project area falls within the Rousse region of the Danube district of the Lower Danube province of the European deciduous forest biome.

The area covers the territory between the lower reaches of the river Yantra and Tutrakan. It is characterised by residual forests dominated by oak species such as Turkey oak (Quercus cerris), pubescent oak (Quercus pubescens), Oriental Hornbeam (Carpinus orientalis), Field Elm (Ulmus minor), large-leaved lime (Tilia grandiflora), Silver Lime (Tilia tomentosa) and others. Eurasian smoke tree (Cotinus coggygria) is the predominant representative of shrubs. Typical steppe elements for the area are feather grass (Stipa lessingiana), Montpellierian Camphor-fume (Camphorosma monspeliaca), Danubian Clustered Broom, Crimean salvia (Salvia scabiosifolia) and others. Kovachev broom (Chamaecytisus kovacevii) is an endemic plant found in the westernmost part of the region. Significant areas along the Danube and the Danube islands are occupied by Riparian flooded forests dominated by white willows (Salix alba), almond willow (Salix triandra), black poplar (Populusnigra), white poplar (Populus alba), white elm (Ulmuslaevis), black alder (Alnusglutinosa), Desert Ash (Fraxinusoxycarpa), shrubs (Amorphafruticosa) and blackberry (Rubuscaesiusvar.aquaticus).

In many places, including the islands were created cultures of black locust (Robiniapseudoacacia) and Euro-American poplar hybrids (Populus x euroamericana).

***Phytobenthos*:** the expedition to study the water quality of the Danube organized by the International Commission for the Protection of the Danube River (ICPDR) registered 340 species of phytobenthos organisms (Joint Danube Survey, 2002). The most numerous among them are diatoms (Bacillariophyceae) - 264 species. The largest number of species is from the Navicula, Nitzchia, Achnanthes, Amphora, Cocconeis, Cymbella, Diatoma, Fragilaria, Gomphonema, Gyrosigma, Surirella genera. The number of phytobenthos organisms decreases after Kozloduy (685 rkm) due to a change in the type of substrate. The highest number of algae is in the rocky and hard bottom areas and the lowest in sandy and muddy areas. In the delta their

number is minimal. The number and abundance of species in the phytobenthos depends mainly on substances dissolved in water, and their ratios determine the diatom biotic index (DBI), which is an indicator of water quality.

Phytoplankton: The number of phytoplankton algae species identified in the seventies of the last century in different sections of the Danube is 91 (Naydenov 1966) to 186 (Says, 1978). Diatoms prevail in the phytoplankton with pronounced autumn maximum, and less pronounced minimum in summer. The damming of the "Iron Gate" lake saw intensive development of phytoplankton in summer. The results of research conducted on the Danube at the beginning of the century showed a total of 261 species of phytoplankters for the entire river. The number of species of phytoplankton increases in the middle and lower reaches of the Danube, which is on account of the Chlorococcales species and probably due to eutrophication process (Joint Danube Survey, 2002).

Diversity of phytoplankton and phytobenthos species and their quantity in the river bed depends on the concentrations of nutrients in the water, the flow velocity, the type of sediment, temperature and solar radiation.

All activities related to the implementation of the project would be implemented in the Danube River waters, on a licensed and operational river port handling general and bulk cargo and on an industrial site; therefore vascular flora in the area will not be affected.

Impact on flora

Vascular plants: extraction of sand and gravel from alluvial deposits in the bed of the Danube will take place entirely in the aquatic environment without affecting superior vegetation. Unloading of raw material will take place on an existing port where existing buildings will be demolished and a separate site and buffer depot will be constructed for the purposes of unloading of alluvium and temporary storage of nearly 17 000 t of alluvial deposits on the wharf.

Processing of raw materials will be carried out on an industrial site equipped with a sorting and treatment installation for the treatment of river sediment deposits from the Danube and a concrete plant located on plot of land nr. 63427.8.1076 of neighbourhood 1 as per the plan of the town of Rousse, Eastern Industrial Zone.

All onshore activities will be carried out at existing industrial sites, without affecting protected vegetation.

Phytobenthos: during extraction of the surface layer of alluvial deposits diatoms encrusted on gravel and boulders will inevitably be collected as well. Diatoms bloom massivelyin a favourable environment with availability of sufficient nutrients in the water and sunlight intensity, therefore the amount of diatoms extracted from the bottom will be negligible compared to the total mass of phytobenthos in the river. Most of the species are found in the periphyton communities (fouling on floating stationary equipment) and are periodically removed during repair of vessels.

Phytoplankton: dredging in the Danube does not influence phytoplankton (concentration of chlorophyll and phytoplankton) and the amount will continue to be determined by the quality of water discharged from each tributary and the presence of hydraulic structures on the river as confirmed by the results of studies made in the last two expeditions of the International Commission for the Protection of the Danube. In terms of species composition of phytoplankton of the Danube diatoms (Bacillariophyceae) will remain dominant, followed by green algae (Chlorophyceae) with a significant contribution from Cryptophyceae.

Fauna

According to the zoogeographic division of Bulgaria (Georgiev 1982) the territory of the investment project falls within the Danube region. Most wildlife species here are Euro-Siberian and European. Prevalent species among the others are of Holarctic and Palaearctic distribution. Endemic fauna is almost non-existent, only subterranean fauna is represented by 2 Balkan and 4 Bulgarian endemics.

***Mammals*:** The number of registered mammals in the area is 46. Faunistic research on the Romanian coast and islands from km. 838 to km. 383 (Murariu, 2005) reported 45 species of mammals belonging to 32 genera, 17 families and 6 orders. The majority live on land, on the south shore of the Danube, and 6 species of them are bats. Crossing between the coast and the land is only possible during low water and ice, which is why the number of mammals is very limited. Only aquatic species such as the otter (Lutralutra), water vole (Arvicolaamphibius), as well as wild boar (Sus scrofa), roe deer (Capreoluscapreolus) and jackals (Canisaureus) inhabit the area. Parts of the Danube islands that remain dry during high water, poplar forests, farmland and reeds are the home of the Common Vole (Microtusarvalis), Striped Field Mouse (Apodemusagrarius), Long-Tailed Field Mouse (Sylvaemussylvaticus), yellow necked mouse (Apodemusflavicollis) and Ural field mouse (Apodemusuralensis) (Murariu, 2005).

***Birds*:** 242 species of birds inhabit the valley of the Danube, Danube islands and territories south of the Bulgarian coast are identified (MEW, 2006).

The biggest group is that of waterfowl species, 71 in number. Areas overgrown with reeds, reed and cattail are inhabited by the Ferruginous Duck (Aythyanyroca), Black-Crowned Night Heron (Nycticoraxnycticorax), Little Egret (Egrettagarzetta), Squacco Heron (Ardeolaralloides), great bittern (Botaurusstellaris), Eurasian Spoonbill (Platalealeucorodia), Black-Winged Stilt, Common Tern (Sterna hirundo), Whiskered Tern (Chlidoniashybridus) and Black Tern (Chlidoniasniger), Pygmy Cormorant (Phalacrocoraxpygmeus), Greylag Goose (Anseranser), Red-breasted Goose (Brantaruficollis), White-Fronted Goose (Anseralbifrons) and others. Some of the birds are nesting; others like geese are migratory and only come for the winter.

Shrubs, sparse woods and agro landscapes are inhabited by small songbirds followed by birds of prey. The area is one of the few places in Bulgaria inhabited by Sea Eagle (Haliaeetusalbicilla). Significant numbers of white storks (Ciconiacico nia) and Glossy Ibis (Plegadisfalcinellus) gather in the area during migration periods.

***Reptiles*:** The number of established species is 11. The majority of them inhabit the territory south of the banks of the Danube. The river and the river islands are

inhabited by 3 species - Dice Snake (Natrixtessellata), Grass Snake (Natrixnatrix) and European pond turtle (Emys orbicularis).

***Amphibians*:** Water areas, wetlands and swampy areas provide conditions for greater abundance of amphibians. Of the 17 known species of Bulgaria 12 are only found in the Danube River basin. The wetlands, estuaries of the tributaries of the river, irrigation and drainage channels with clear water and abundant vegetation and the islands in the river are inhabited by the Danube crested ne wt (Triturusdobrogicus) and smooth newt (Lissotriton vulgaris).The Danube crested newt is included in the Red book of Bulgaria.

Frog species are represented by the edible frog (Rana kl. Esculenta), fire -bellied toad (Bombinabombina), common toad (Bufobufo), green toad (Pseudepidaleaviridis), European tree frog (Hylaarborea), Agile Frog, (Ranadalmatina), commonspadefoot (Pelobatesfuscus), eastern spade foot (Pelobatessyriacus) and Marsh Frog (Pelophylaxridibundus).

***Ichthyofauna*:** 83 Ichthyospecies inhabit the Danube, and 65 of them are found in the Bulgarian section (Busnita, 1967). Publications by Bulgarian ichthyologists have documented 58 species without the acclimatized ones. The majority of species inhabit the lower reaches of the river.

Objective indicator of the status of fish populations is the amount of harvested fish. According to NAFA the last few years witness a trend of stability of fish catches in the Bulgarian section of the Danube with an upward trend until 2011 and then decline. Total amount caught in 2012 was 111.1 tons, 102.7 tons of which were of freshwater fish, 2.9 tons of migratory fish and shad, and 5.5 tons of other fish (NAFA, 2012).

Harvested fish is of the following species: shad, Danube herring (Alosapontica), Northern Pike (Esoxlucius), roach (Rutilusrutilus), chub (Leuciscuscephalus), Orfe (Leuciscusidus), common rudd (Scardiniuserythrophthalmus), asp (Aspiusaspius), Danube bleak (Chalcalburnuschalcoides), bleak (Alburnusalburnus), common bream (Abramisbrama), bream (Abramis sp.) , vimba bream (Vimbavimba), sichel(Pelecuscultratus), common nase (Chondrostomanasus), common barbel(Barbusbarbus), Maritsa barbel (Barbuscyclolepis), common carp (Cyprinuscarpio), carp (Carassiusauratus), crucian carp (Carassiuscarassius), silver carp (Hypophthalmichthysmolitrix), bighead carp (Aristhichthysnobilis), grass carp (Ctenopharingodonidella), welscatfish (Sillurusglanis), Burbot (Lotalota), zander (Sander lucioperca) and perch (Percafluviatilis). The majority of the species caught are representatives of the carp family (Cyprinidae). Three types of silver carp (Hypophthalmichthysmolitrix), bighead carp (Aristhichthysnobilis) and grass carp (Ctenopharingodonidella) are introduced species object of industrial fisheries. They cannot reproduce naturally in European rivers.

Studies on the presence and abundance of sturgeons in the Danube and Black Sea have been carried out jointly by the Institute of Zoology of the Bulgarian Academy of Sciences, the Institute of Fisheries - Varna; Faculty of Biology of Sofia University and the Institute of Zoology of Bratislava. Over the past 10 or more years there have been no records of bastard sturgeon (Acipensernudiventris) or European sea sturgeon (Acipensersturio) caught in the Bulgarian section of the Danube, and these species

are considered extinct. Starry sturgeon (Acipenserstellatus) is also a rare catch in this section of the Danube and is also among the species threatened with extinction. European sea sturgeon (Acipensersturio) has been entering the Danube D elta and reaching the Bulgarian sector (Drenski, 1951) until the beginning of the XXth century. It has not been caught since 1963 and according to all ichthyologists engaged in research on sturgeon, it has already disappeared from the upper and middle Danu be, and probably from the Black Sea region. The presence of bastard sturgeon in the Bulgarian stretch of the Danube needs scientific confirmation.

Sturgeon species found in catches in the Danube are Starry sturgeon (Acipenserstellatus), Russian sturgeon (Acipensergueldenstaedti), beluga (Husohuso) and sterlet (Acipenserruthenus). The number of these species depends on the state of their breeding grounds, the physicochemical characteristics of the waters of the Danube, fishing regime and number of fish caug ht, and food availability.

Bastard sturgeon (Acipensernudiventris), European sea sturgeon (Acipensersturio) starry sturgeon (Acipenserstellatus) and Russian sturgeon (Acipensergueldenstaedti) spawn in deep areas with swift current and rocky and hard botto m. The extraction of sand and gravel subject to the investment project is not associated with destruction of spawning sites of either species as raw material will be extracted from an area with sandy silt deposits unsuitable for spawning of sturgeon specie s. Depths measured during preparation of the report on the geological, geomorphological and geometrical parameters of alluvial deposits along the Danube in the "Mishka-Vetovo" section (km 462.0 - km 459.5) were 2.20 to 4.30 m with a maximum depth of 6.30 m and river flow speed of 6 km per hour making the area undesirable to these species.

The beluga (Husohuso) spawns in the spring on rocky and gravely bottoms in the deep water. The beluga spawns every 4 to 6 years and feeds mainly on fish. In contrast to the migratory species the starlet (Acipenserruthenus) is a local, non-migratory freshwater species. It spawns in April to June on rocky and sandy bottoms.

Geological exploration of the "Mishka-Vetovo" section (km 462.0 - km 459.5) revealed presence of alluvial deposits, represented by gravel aggregate with layers and lenses of sand. Gravel content is in the range from 25% to 70%, about 50% average with fragments the size of 5 mm to 40 mm, the ones 5-20 mm in size predominating.

Data from the geological and hydrological studies reveals that neither the beluga nor the starlet favours the studied section of the Danube as spawning ground, therefore extraction of dynamic reserves of alluvial deposits from this stretch of the Danubewill not influence the populatio n density of either species.

Food availability in the river is of any significance only for the young of the migratory species for the period until their entering the Black Sea, where they grow up and return in the Danube only to spawn.

Invertebrates:

***Zoobenthos*:** In connection with the need to collect data on the composition and species composition of zoobenthos for the preparation of the EIS, the team working

on the report commissioned a study of the area of the Danube that is object of extraction of alluvial deposits. Samples taken from said area of the Danube showed an extremely poor demersal community. Samples were taken from three different sections of the extraction area. Two collections of samples conducted in the first section revealed only 7 taxa (species), of which only the Asian clam (Corbiculafluminea) and the river nerite (Teodoxusfluviatilis) is of greater importance due to massive development. The first species is one of the most rapidly expanding and growing in large abundances invasive species on the Danube (Hubenov et al., 2013). Shells of zebra mussel (Dreissenapolymorpha), Ponto-Caspian species, one of the most aggressive aquatic invasive species in the world (Van der Velde et al. 2010) were also found.

The coastal area of the Mishka Island (section 2) is also very poor in bottom invertebrate species. The study revealed eight taxa, including three species of molluscs, 4 species of insect larvae and the amphipod Dikerogammarusvillosus. The last species is Ponto-Caspian, quickly invading a number of bodies of freshwaterin Europe (Devin et al., 2001; Casellato et al, 2006, etc.) by spreading along the so-called "Southern Corridor" (Rhine-Main-Danube). Two other invasive species (Corbiculafluminea) and (Dreissenapolymorpha) have also been registered.

The coastal zone under the village of Ryahovo (section 3) outside the concession area was found to host 18 different taxa (species) as well as traces - shells, chitin carapace residues, etc. of 6 other taxa. Among them are the striped nerite (Theodoxustransversalis) and thick shelled river mussel (Uniocrassus), which are endangered species according to IUCN Red List and listed in App. 2 and App. 3 of the BDA, and Danube crayfish (Astacusleptodactylus), included in App. 4 of the BDA. Identified taxa are distributed as follows: five species of mussels, seven species of mussels, four taxa of shellfish, and eight taxa of insects.

Zooplankton: More serious studies of zooplankton in the Bulgarian section of the Danube were made after 1958. Studies on the effects of hydraulic structures on the Danube, quality and quantity of zooplankton were made in the seventies of the last century (Naydenov 1963; Naydenov, 1968; Naydenov, 1975). Rotifiers are a dominant species throughout the year. Predominant species are Brachionuscalyciflorus, B.Urceolaris, Keratellaquadrata, Asplanchnapriodonta. Second in number are copepods, which are found in greater quantity in the summer months and after construction of the "Iron Gate" dam they reach 84% of the total planktonic composition.

Between 1971 and 1973, over 70% of the zooplankton was produced in the spring and summer months. Following regulation of river flows, the reported reduction in average zooplankton abundance was 6-9 times, and in zooplankton biomass from 5.7 to 7.3 times. In the ten years of our century no major change in the relative share of the different groups constituting the planktonic fauna was observed. The number of registered species is 120, of which 79 rotifers, 27 cladocera and 14 copepods.

Impact on wildlife

All activities related to the extraction of sand and gravel deposits from the bed of the Danube, transporting and unloading of alluvium (sand and gravel) / aggregates / will

take place at nearly 100 meters from the Mishka island and at 200 m to 500m from the Bulgarian coast.

Mammals inhabiting the Bulgarian and Romanian shore will not suffer any negative effect from the extraction activities as processing will be done on an existing industrial site, which is inhabited only by small mammals found in residential and industrial buildings and warehouses.

Exploitation of the site and extraction activities will not threaten bat habitats, because the presence of bats is temporary. All activities will be carried out during the day when bats rest in their daytime roosts. Island shores will not be affected by activities and impact on forest bat species will be negligible. Extraction activities will be carried out within the prescribed area, and will not affect caves, mines or underground galleries inhabited by bats.

The majority of small mammals inhabiting the Danube islands is nocturnal and hides during the day in underground shelters. To them noise produced by the dredger will be similar to noises made by vessels navigating the Danube and activities associated with the cultivation of poplar plantations on the islands.

Birds: The observations on the behaviour of waterfowl inhabiting Mishka island during the passing of large convoys in the fairway indicate that birds inhabiting the Danube have adapted to vessels. Regardless of the significantly greater power of vessel engines, loud noises and vibrations produced during the passage of convoys, there was no change in the direction of flight departure or change in position of birds perched in the trees or on the shore or foraging in the water. A large number of bird species inhabiting the Danube were observed in the port facilities around the Danubian dredging fleet and the operating sorting and treatment facility. The EIA team has made observations on washing and sorting facilities operating in the Struma River and on areas of excavation works conducted with excavators in relation to investment projects similar to the current one. Great egrets and little egrets were observed at about 50 m from the facilities. Current shipping and fishing practice has shown that neither nesting nor migrating waterfowl founding the Danube valley is sensitive to the presence of vessels. On the contrary, birds often follow vessels or use their yards and masts to rest. Migrating Grebes and Mergansers keep a safe distance even though they show no effects of anxiety. Shorebirds feeding in the coastal zone keep a safe distance of 20-50 m from people and machines; therefore, it can be assumed that exploitation of the site will not chase away birds nesting in the nearby islands. As extraction activities will be carried out in the bed of the Danube the populations and habitats of bird species (Hen Harrier, Marsh Harrier, Levant Sparrowhawk, Black Woodpecker, Pern, Lesser Kestrel, Kestrel, Red-backed Shrike, Lesser Grey Shrike, Black Kite, Lesser Spotted Eagle, Short-toed Eagle, Eurasian sparrow hawk, Green Sandpiper, Lapwing, Eurasian Hobby, common buzzard, etc.)inhabiting territories to the north and south of the banks of the Danube and the interior of the Danubian islands will not be affected.

Impact will be reduced by keeping birds flying over the area at a safe distance from moving vessels without chasing them away.

Reptiles: there are three reptile species found in the bed of the Danube - dice snake (Natrixtessellata), grass snake (Natrixnatrix) and European pond turtle (Emys orbicularis).

The reptiles inhabit the coastline, still watersand areas with low-flow. They could enter the extraction area only by chance and remain there tempora rily, so that negative impact on them is not expected.

***Amphibians*:** realization of the investment project is not related to discharge of untreated sewage, pollution or drainage of swampland; therefore the habitats of amphibian species will remain intact and unaffected by any negative impact.

***Ichthyofauna*:** Any expected impact will occur locally, within the operationsite of the dredger. Fish have primitive nervous system; that is why effects such as anxiety and displacement are observed only in mammals and b irds. Responses in the lower classes of vertebrates are governed by reflexes. Observations made during dredging in the Vaya lake and the Mandra lake have shown that extraction of alluviumcauses increase in the amount of detritus and benthic organisms in the bottom water layer that attracts fish.

Expected impact on the ichthyofauna is mainly related to damage to bottom habitats in the river. Types of species caught during fishing have shown that the most common species are carp species (Ciprinidae). Their spawning and nursery grounds are located in flooded areas and shallow sections of the river.

Extraction of alluvium can affect primarily habitats of Demersal species inhabiting the river bed, such as fish in the Cobitidae family, White-finned gudgeon, both ruffe species, and several species of gobies. Re sults from sample collection seeking to establish the composition and quantity of zoobenthos in the extraction area have shown that it is extremely poor in terms of species composition and can serve as a food base for a limited number of fish. Four species of gobies may use the area as feeding ground, namely the monkey goby (Neogobiusfluviatilis), round goby (Neogobiusmelanostomus), Kessler's goby (Neogobius (Ponticola) kessleri) and Racer goby (Neogobius (Babka) gymnotrachelus). They have been exhibiting t heir invasive behaviour in recent years and from the Pontian basin they have already reached the Serbian and Austrian section of the river and the Baltic basin, and have therefore been included on the list of invasive species.

Sand and gravel deposits domina ting the extraction area make it undesirable as breeding ground for sturgeons. Dredging operations have been carried out in the Danube for the last 40 years, but the beginning of the century showed an increasing number of Sterlet in catches (Zhivkov et al. 2001), giving rise to claims that implementation of the project would not create negative impact leading to a reduction in the population of Sterlet in the Danube. On the contrary, the deepening rocky bottom would rather have a beneficial impact on sturgeo n as it leads to an increase in the number and size of locations suitable for sturgeon spawning.

After extraction of the dynamic reserves of alluvial deposits in one section the dredger will move to the next; however, deposits in the depleted section will begin forming again with the first high water. Benthic organisms, some of which are

invasive species, have a short life cycle and high reproduction capacity, so the food base of the ichthyofauna in the river will be restored quickly.

The process of extraction is not connected with discharge of untreated sewage and turbidity will be limited within the scope of operation of the dredger. The concentration of suspended particles in the water will be comparable to that during high flow or after precipitation. It does not have any effect on fish as they are adapted for life in the aquatic environment.

***Zoobenthos*:** a limited area of the Danube will be affected with only a small number of zoobenthos taxa.

After a scuba diving operation for surveying the demersal section of the river it can be concluded with a high degree of certainty that the high water flow velocity (besides the substrate) is the main factor limiting the development of stable bottom communities. It was found that bottom water layers (approximately 50 cm in depth) create turbulent vortexes that carry finer particles of the sand thus causing greater dynamic instability of the bottom substrate. The constant movement of sandbars probably has an impact on the psamophylic species of the Asian clam (Corbiculafluminea), constantly burying them. This claim is supported by samples collected using scuba equipment. These samples also show that the number of species is very low - 3 to 5 specimens per square metre while at the control section below Ryahovo the number of macro zoobenthos organisms is between 678 specimens per sq.m. in August to 87 specimens per sq.m. in September. Two of the species found in the area are invasive –the Asian clam (Corbiculafluminea) and Dikerogammarusvillosus.

Implementation of the investment project will include extraction of the surface layer of alluvium and the zoobenthos encrusted therein, with the amount of zoobenthos biomass determined mainly at the expense of invasive and widespread species.

Affected species are characterized by large reproduction capability and short lifespan, so benthic communities will quickly recover after cease in exploitation of each separate extraction section at the expense of watercourse organisms.

Zooplankton: implementation of the project will have only a negligible effect on the zooplankton in the extraction area. Both quantitative and qualitative zooplankton composition will continue to be determined by the seasonal dynamics, the concentration of substances dissolved in the water, flow velocity and the amount of phytoplankton. At river flow velocity of 6 km/h the amount of biomass of plankton in the water depends mainly on the quantities that come with water inflow from the upper stretches of the river and its tributaries.

5.2. Protected Territories and Zones

Protected Territories within the meaning of the Protected Areas Act

The Mishka Section (462.0 km. – 459.4 km.) within the area of the village of Babovo, Slivo pole Municipality, Rousse Region where extraction of alluvium from the bed of the Danube will take place falls outside protected territories within the meaning of the

Protected Areas Act. Extraction, transportation, and unloading of alluvium (sand and gravel) /aggregates/ will take place within the Mishka section of the Danube river (462.0 km. – 459.4 km.), to the north of the village of Ryahovo and the village of Babovo, to the north and north-west of Mishka Island (Golyam Mishka – 1 and Malak Mishka-2) and to the south of Mishka-3.

The closest protected territory within the meaning of the Protected Areas Act is Kalimok Brashlen protected by virtue of Order RD-451 of 4 July 2001 of the Ministry of Environment and Waters, SG 68/2001 and approved by virtue of Order RD-886 of 7 December 2007 of the Ministry of Environment and Waters, SG 17 of 19 February 2008.

The protected area is located along the former Tutrakanfloodplain, between Babovo and Tutrakan, within the municipality of Slivo pole and Tutrakan and includes all Bulgarian Danube islands in this part of the Danube: Mishka, Malak Bra shlen, Pyasachnik, Bezimenen, Kalimok and Radetzky.

The protected area was established to preserve the diversity of ecosystems and landscapes characteristic of the region and habitats of rare and endangered plant and animal species.

The following activities are prohibited with a view to safeguarding biodiversity:

● activities related to or leading to drainage or disturbance of the water regime of the existing wetlands designated as such by their long term use under the land division plans of the respective areas;
● conversion of grasslands from state and municipal land into arable land;
● reduction of forested areas;
● reduction of forests by changing land use;
● reduce of natural forest areas owned by the state and municipalities;
● felling in breeding colonies of endangered species;
● felling during the period from March to July (inclusive) at a distance less than 300 meters from the breeding colonies of endangered species;
● regulation of game resources in the period, from March to July /incl/.
● open-pit mining.

The extraction site is located about 100 meters to the north of Mishka 3 Island. Implementation of the project does not provide activities within the protected area or activities in conflict with its protection regime.

Expected impact on protected areas

Implementation of the project will not come in conflict with the Order declaring "Kalimok Brashlen" a protected area or the approved management plan of the latter. All activities related to the extraction of sand and gravel from alluvial deposit s from the bed of the Danube River (from km 462.0 to km 459.4) and processing of raw materials will be made outside of protected areas under the PAA. Any negative effects caused by operation of the dredger and the loading of barges will be short-ranged and limited within the operational area of the exploited section. Engine power required for operation of machinery and extraction of inert materials from the bottom

(500 kW) and for powering of self-propelled barges (820 hp) is much lower than that of pusher boats of Bulgarian River Shipping A D with engine power ranging from 1740 hp to 3150 hp. In view of the above it could be argued that the expected impact of the operation of the dredger and self-propelled barges will be much lower in intensity than that of ship traffic in the fairway of the Danube. Implementation of the project is compatible with the goals set in the "Kalimok Brashlen" Management Plan, namely improvement of the standard of living of local population without damaging the environment.

Natura 2000 protected areas – protection goals

The territory of implementation of the investment project falls outside the boundaries of protected areas within the meaning of the Protected Areas Act; however, it falls within BG0000117 "Kalimok Brushlen" Protecte d Area for conservation of natural habitats and of wild flora and fauna, as well as within BG0002030 "Kalimok Complex" Protected Area under the Conservation of Wild Birds Directive.

BG0000117 "Kalimok Brushlen" PA for conservation of natural habitats and of wild flora and fauna covers the former Tutrakan floodplain between Ryahovo and Tutrakan to the north of the village of Nova Chernawithin the municipality of Slivo pole and Tutrakan, the Bulgarian Danube islands in this part of the Danube: Mishka, Malak Brashlen, Pyasachnik, Bezimenen, Kalimok and Radetzky (Malak Kalimok) and the watercourse between the islands and the Bulgarian coast. As per Government Resolution No 122 / 02.03.2007, SG. 21/2007 the area is listed as protected and excluding settlements a nd settlement formations, territories with a master or detailed development plan by the date of issuance of the order of the Minister of Environment and Water for designation of the protected area, as well as concession areas for mining, and territories of paramount social importance within the meaning of the Biodiversity Act.

The area has been designated as protected in order to achieve the following objectives:

- protection of natural habitats and habitats of species and their populations subject to conservation within the protected area.
- Preservation of the natural state of natural habitats and habitats of species subject to conservation within the protected area, including species composition, characteristic species and environmental conditions.
- Recovery, if required, of the area and the natural state of priority natural habitats and habitats of species as well as populations of the species subject to conservation within the protected area.

Subject to conservation in the protected area are the followin g:

HABITATS
91E0 * Alluvial forests with Alnusglutinosa and Fraxinus excelsior (Alno -Pandion, Alnionincanae, Salicionalbae)
1530 * Pannonian salt steppes and salt marshes
3130 Oligotrophic to mesotrophic standing waters with vegetation of Littorelleteauniflorae and / or Isoeto-Nanojuncetea

3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.
3150 Natural euthrophic lakes with Magnopotamion or Hydrocharition -type vegetation
3270 Rivers with muddy banks with Chenopodionrubri p.p. and Bide ntion p.p. vegetation
6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
6440 Alluvial meadows of river valleys of the Cnidiondubii
91F0 Riparian mixed forests of Quercusrobur, Ulmuslaevis and Ulmus minor, Fraxinus excelsior or Fraxinusangustifolia, along the great rivers (Ulmenionminoris)

MAMMALS
European otter (Lutralutra)
Romanian hamster (Mesocricetusnewtoni)
Schreiber's Bat (Miniopterusschreibersi)
Steppe polecat (Mustelaeversmannii)
Long-fingered bat (Myotiscapaccinii)
Blasius's Horseshoe Bat (Rhinolophusblasii)
Mediterranean Horseshoe Bat (Rhinolophuseuryale)
Lesser horseshoe bat (Rhinolophushipposideros)
European ground squirrel (Spermophiluscitellus)
Marbled polecat (Vormelaperegusna)

AMPHIBIANS AND REPTILES
Fire-bellied Toad (Bombinabombina)
Four-lined snake (Elaphequatuorlineata)
European pond turtle (Emys orbicularis)
Spur-thighed tortoise (Testudograeca)
Danube crested newt (Triturusdobrogicus)

FISH
Whitefingudgeon (Gobioalbipinnatus)
Asp (Aspiusaspius)
European Bitterling (Rhodeussericeusamarus)
European weatherfish (Misgurnusfossilis)
Golden Spined Loach (Sabanejewiaaurata)
Spined loach (Cobitistaenia)
Striped ruffe (Gymnocephalusschraetzer)
Common zingel (Zingelzingel)
Streber (Zingelstreber)
Ukrainian brook lamprey (Eudontomyzonmariae)
Pontic Shad (Alosaimmaculata)
Sabre carp (Pelecuscultratus)
Balkan Loach (Cobitiselongata)
Balon 'sruffe(Gymnocephalusbaloni)

INVERTEBRATES
Large Copper (Lycaenadispar)
Stag beetle (Lucanuscervus)
Rosalia longicorn (Rosaliaalpina)

FLORA

Four Leaf Clover (Marsileaquadrifolia)

By now the protected area has no protection regime; its standard form, however, includes the following prohibitions:

- ban on felling with intensity below 5% in habitat type 91F0. In natural fores ts it is acceptable and normal for dead wood to form up to 5% of the fund. If dead wood is within 5% of the fund, sanitation harvesting is not allowed. In the cases of sanitation harvesting at least 15 m^3 of dead and dried wood should be left for each harvested hectare.
- Prohibition of all types of thinning in habitat type 91F0.
- Prohibition of all kinds of logging in habitat type 91E0.
- Prohibition of activities related to changes in the hydrological regime in habitat type 91F0 and 91E0.
- Prohibition of fodder collection in habitat type 91F0.
- Prohibition of fencing, including for the purposes of intensive breeding of wildlife in habitat type 91F0.
- Prohibition of livestock grazing in habitat type 91F0.
- Prohibition of change in use of land, except in the interest of public health and safety or other reasons of paramount social importance, including those having a very favorable impact on the environment in habitat type 91F0 and 91E0.
- thinning and retention of key elements of biodiversity –groups of old trees, hollow trees, etc. in habitat type 91F0.

Kalimok Complex BG0002030 Protected Area for preservation of wild birds: designated as protected area by virtue of Order of MEW No RD -831 of 17 November 2008, SG 108 of 19 December 2008. The total area of the complex c overs 9429.217 ha according to the MEW Order and falls within the grounds of the village of Ryahovo, Babovo, Brashlen, GolyamoVranovo, Slivo pole Municipality and Tsar Samuil Municipality, Nova Cherna, Staroselo and the town of Tutrakan, Tutrakan Municipality. This is also the territory of the former Tutrakan floodplain between Ryahovo and Tutrakan to the north of the village of Nova Cherna within the municipality of Slivo pole and Tutrakan, the Bulgarian Danube islands in this part of the Danube: Mishka, Malak Brashlen, Pyasachnik, Bezimenen, Kalimok and Radetzky (Malak Kalimok) and the watercourse between the islands and the Bulgarian coast. Territory south of the Danube includes the areas formerly occupied by large marshlands near the Danube converted int o fishponds, which were drained in the 1950s by building a dike and drainage channels.

The area is designated for protection of 101 bird species as per the MEW Order. The territory is inhabited by 188 bird species, 61 of which are included in the Red Book of Bulgaria (1985), and 85 species are of European conservation concern (SPEC) (Bird Life International, 2004).

Nine species are listed as globally endangered in category SPEC1, 18 species as threatened in Europe in Category SPEC2, and 58 species - in SPEC3. The area provides suitable habitats for 71 species listed in Annex 2 of the Biodiversity Act,

which require special protection measures. Of these, 64 are also listed in Annex I of Directive 79/409. Fishponds are of global importance for the Ferruginous Duck (Aythyanyroca) nesting here and are also a resting place for the Dalmatian Pelican (Pelecanuscrispus). Here is one of the two breeding colonies of Black -winged Stilt (Himantopushimantopus). During the breeding season Kalimok complex is one of the most important places for the European Union in the country for the Ferruginous Duck, Night Heron (Nycticoraxnycticorax), Little Egret (Egrettagarzetta), Squacco Heron (Ardeolaralloides), great bittern (Botaurusstellaris), Eurasian Spoonbill (Platalealeucorodia), black-winged Stilt, European Roller (Coraciasgarrulus), as well as three species of terns - the Common Tern (Sterna hirundo), Whiskered Tern (Chlidoniashybridus) and Black Tern (Chlidoniasniger). The Complex is a constant feeding ground for one couple of sea eagles (Haliaeetusalbicilla). Significant numbers of white storks (Ciconiaciconia) and Glossy Ibis (Plegadisfalcinellus) gather in the area during migration periods. During this period and in winter ponds are of global importance for the Pygmy Cormorant (Phalacrocoraxpygmeus) and Greylag Goose (Anseranser). They are important as winter home for the migratory Fieldfare (Turduspilaris). Large numbers of water birds, including the Red-breasted Goose (Brantaruficollis), Greater White-fronted Goose (Anseralbifrons) and others also gather in great numbers during the cold season.

Due to its small size, the area is susceptible to all kinds of disturbance by human activities such as hunting, fishing during the breeding season, collecting plants and animals, and others.

The area has been designated as protected in order to achieve the following objectives:

- Preservation and maintenance of habitats of birds referred to in item 2 of the MEWOrder to achieve a favourable conservation status;
- Restoration of habitats of species referred to in Item 2 of the Order that is necessary to improve the conservation status.

In the protected area shall be prohibited:

- destruction of landscape features (hedges, single trees and groups) in the use of agricultural land as such.
- afforestation of meadows, pastures, and their conversion into arable land and permanent crops.
- The use of pesticides and fertilizers in pastures and meadows.
- The destruction of island formations.
- Tree harvesting that leads to replacement of natural alluvial forests.
- Removal of vegetation growing along the banks of irrigation / drainage canals during the breeding season (March to August).
- Setting fire to reed beds and coastal vegetation;

By virtue of Order No RD-86/21.08.2013 of MEW the preservation regime of Kalimok Complex BG0002030 Protected Area is changed to include the following prohibitions:

- Use of non-selective means of pest control in agriculture;

- Mowing of meadows and pastures from the periphery to the center with mowing machinery or before July 15.

Expected impact on protected areas

Implementation of the project will not have a negative effect on the adjacent Natura 2000 protected areas because of the remoteness of the extraction area from the key elements that are important for biodiversity in "Ka limok Brushlen" BG0000117 Protected Area for conservation of natural habitats and wild flora and fauna and "Kalimok Complex" BG0002030 protected under the Conservation of Wild Birds Directive. Dredging will be carried out in a section of the Danube that is remote from any breeding or concealment grounds or habitats of species subject to conservation in protected areas of the National Ecological Network Natura 2000. The fairway (waterway) of the Danube is adjacent to the extraction area and barge convoys of different tonnage belonging to the shipping companies from all Danube countries pass by. The heavy river traffic, however, has not been found to have a significant negative effect on species subject to protection in the aforementioned areas. Any impact associated with implementation and operation of the project will be within the concession area and occurrence of negative effects on the specimens that are subject to conservation in the above protected areas will not be allowed.

6. Landscape

The geographical area of the Danube riverbed including the Mishka section for extraction of alluvial sediment deposits, the wharf and unloading platform falls within the lowland plain class. There are four basic types of landscapes encompassed by the lowland plain class: ridge (weathered alluvial), slope (transalluvial), sub aqueous and aquatic landscapes. The EIAR will make a complex landscape characterization of the investment project area. Assessment of the anthropogenic impact on the individual components and the complex continental and aquatic landscape will also be prepared.

Expected Impact

The changes in the transverse and longitudinal profile of the river bed, changes in biological, geological and water components, as well as the visual appearance of the river will be evaluated as a result of the planned extraction activities due to the presence of anthropogenic elements (equipment) in the natural riverbed.

Impact on Aquatic landscape will be classified as physical, local (short -term and medium-term) for the period of extraction.

The EIAR will assess the expected changes in the landscape of the surrounding area as a result of the activities.

7. Risk Energy Sources

<u>Noise</u>

Acoustic environment in the project area intended for extraction and transportation of aggregates from the bed of the Danube River is formed by the intensity of water transport traffic and the on-going operations in the area of the wharf in the Eastern Industrial Zone of Rousse and adjacent production and warehouse facilities.

The extraction area is located within the Bulgarian part of the river, at the mandatory distance (327 meters to the southwest to 194 m to the north-east) of the river's mainstream. This means that the noise-emitting water transport corridor is located at least 194 meters from the extraction area. Therefore, assuming that the noise emitted from the passage of a vessel is similar to that emitted by a passing barge - 79,5 dB (A), in accordance with Annex No 3, item 4 to Art. 6 of Ordinance No 6/2006 of the Ministry of Health and Ministry of Environment and Waters at a distance of 200 meters the level will be reduced by about 55 dB (A) and noise reaching the extraction area will reach about 24-25 dB (A). Small vessels passing accidentally at a shorter distance cannot create significant noise emissions for a long time; such emissions disappear with the passing of the vessel. Another source of noise in the area near the future site for extraction of aggregates could be another operational mining facility. At the moment we have no information about the presence of such, therefore we cannot make assumptions on the level of noise pollution.

The acoustic environment in the area of the wharf where extracted aggregates will be unloaded and dispatched will be formed by the activities carried out in neighbouring production and storage areas of other operators. Measurements performed on a bulk cargo wharf located in the Eastern Industrial Zone of Rousse, where the site of the Investor is located also, reported noise level of 67.7 dB (A). Noise level limits for such sites is70 dB (A) measured at the borders of the site in accordance with Annex No 2 to Art. 5 of Ordinance No 6/2006 of the Ministry of Health and Ministry of Environment and Waters. According to the 2013 Annual Report by RIEW Ruse, the analysis of the results of the test measurements and reported own periodic measurements of noise from industrial plants in the region has shown no exceedances of the limit values.

In general, the acoustic environment in the project area intended for the extraction of sand and gravel from alluvial deposits in the bed of the Danube at Mishka section is typical of a main transportation corridor, with periodic short-term noise exposure.

Implementation of the investment proposal of Gravel and Sand Pits Bulgaria E AD will generate noise emissions resulting from operating machinery (dredger and self-propelled barge). Extraction works will be carried out from east to west (upstream). Extraction sections will be divided into separate tracts, i.e. the dredger will continuously change its position. Thus the source of noise pollution will move away from the closest protected area – Mishka Island. Extracted sediments will be loaded on self-propelled barges and transported to the wharf. According to the investment plan three barges will be used to transport material, with each barge making one course per day or a total of 3 courses per day will be made in a 12 - hour working day. Therefore, noise generated during transportation will subside shortly. Moreover, extraction activities are seasonal.

According to the results of conducted own measurements of noise levels generated by sources similar to those in the investment plan extraction activities will not

exacerbate the acoustic environment in the nearest residential areas and sites. The same conclusion can be drawn for the noise levels emitted during performance of loading and unloading activities on the wharf based in the Eastern Industrial Zone of Rousse.

Vibrations

Operational floating extraction equipment and transport ves sels must meet the requirements set by the Bulgarian Register of Shipping and possess the relevant documents evidencing their fitness for normal and safe operation issued by the State Shipping Inspectorate. Proper maintenance of the aforementioned machiner y and vessels will secure avoidance of any additional abnormal vibrations that would affect the crew. Generated vibrations, if any, would not have a significant adverse impact on adjacent water areas or the nearby residential areas.

Electromagnetic Radiat ion

Transportation of extracted materials will be carried out by specialized self -propelled barges. The barge is a river vessel propelled by one screw propeller and equipped with a radar system, echo sounder, autopilot and course indicator, mobile communications and talkies, with an option for installation of a GPS system and an electronic card, which would increase shipping safety. All these systems are to comply with the relevant regulations in the field of radio and mobile communications, so as not to create excessive electromagnetic radiation in adjacent areas.

The site for unloading and realization of extracted materials will be powered with electricity from existing technical communications. All electrical equipment and command equipment is to be of a suitable class of performance and protection. All electrical equipment is to be in full compliance with the requirements of relevant legislation, so as not to create excessive electromagnetic radiation in adjacent areas.

Radiation

There have been no repo rted radiation incidents in the area of the future extractions sites opposite Mishka Island and the wharf at the Eastern Industrial Zone of Rousse property of Gravel and Sand Pits Bulgaria EAD.

In general, risk energy sources are not expected to have adve rse negative impact on the environment or closely situated residential areas during implementation of the investment project of Gravel and Sand Pits Bulgaria EAD.

The extraction area is 418 meters away from the Romanian border and 836 meters away from the Romanian coast in the southwest and 50 m and 310 m in the northeast respectively, therefore transboundary pollution from operating transport and extraction machinery and facilities is not expected.

8. Health and Safety

Health and Safety aspects reflect the harmful effect implementation of the investment proposal for extraction of alluvial sediments in the bed of the Danube River, Mishka section in the area of Babovo Village, Slivo pole Municipality, Rousse region may have on human health and the environment .

The scope encompasses sources of impact, the state of the environment and characterization of major pollutants, location of the site compared to the residential environment and objects of health protection and expected impact on human health, based on the analyses of the investment proposal.

Characterisation of risk factors. Impact on human health.

Toxic gases and particulate matter

Emissions of harmful substances in the air will be formed only by operating machinery for extraction and transportation of materials. These are harmful substances typical for the respective vehicles: nitrogen oxides, sulfur oxides, carbon monoxide, hydrocarbons and particulate matter.

Health effects of these toxic substances can cause inflammation of the lungs and decreased resistance to respiratory infections (influenza). Prolonged exposure to concentrations above the MAC may cause structural changes in the lung. All these contribute to respiratory problems, respiratory diseases, and increased sensitivity of people with chronic diseases such as bronchitis, emphysema, and cardiovascular disease. SO2 and NOx are the main components of "acid rain". And exposure to carbon monoxide reduces working efficiency and reacts rapidly with hemoglobin to form carboxyhemoglobin.

Respiratory diseases morbidity is highest as a result of generated particulates in general, PM10 and PM 2.5.

Atmospheric particulate matter is a major pollutant. Harmful health effects depend mainly on the size and chemical composition of the suspended particula te matter and the chemical compounds adsorbed on its surface. Particulates enter the body mainly through the respiratory tract, with coarse particles being retained in the upper part, and finer particles (particles on the order of ~10 micrometres or less) penetrating deeper into the lungs.

The harmful effect of PM is more pronounced in the presence of sulphur dioxide in ambient air. Such a combination leads to increased morbidity and deterioration in pulmonary function, increased non-specific lung diseases, mainly respiratory infections of the upper respiratory tract and bronchitis, which is particularly pronounced in children. The most vulnerable to the combined action of dust and sulfur dioxide are people suffering from chronic bronchial asthma and cardio vascular diseases.

Noise

Noise effect on human health corresponds to the degree and nature of its biological effect: Class I / 86-95dB / - noise with adverse effect on the functional state of the body; Class II / 96-105dB / - noise levels with pronounced harmful effect–deepening hearing loss; Class III / over 106dB / - especially dangerous to the body. Many authors offer scales for subjective evaluation of the impact of noise that encompass a wide range of intensity from 45 dB to 105 dB.

The main source of noise in the extraction area will be:

● floating multi-bucket dredger and its elements;
● Self-propelled barge for transportation of excavated material to the wharf;
● Standard machinery and equipment for performance of construction activities;
● equipment for unloading of materials from barges and subsequent loading for transportation to the processing site.

Noise emissions during construction will be highly variable. Construction site noise will be of production levels. Sound spreading in the environmen t decreases to safe levels within a distance of 100 m to 110 m. Overall noise pollution generated by the operation of the site will be brief and will not have an adverse effect on the overall acoustic environment on the borders of the residential environme nt.

Vibrations

The main source of vibrations during performance of construction works and operation of the site is outdated heavy machinery.

The effect such machinery has on human health includes damage to the vestibular system, musculoskeletal system, damage of parenchymal organs and the development of vibration disease that is often common occupational disease among workers operating such machinery. It is expressed by spasms of the small vessels ("white finger syndrome"), disorder of the peripheral sen sory and vestibular apparatus.

Health Risk Analysis

Impact on the health status of residents of nearby villages during operation of the production site is calculated on the basis of:

● assessment of emissions caused by operation of the site shows that th ey will be insignificant in power and will not have a significant impact on human health in the region;
● Expected concentrations of pollutants after dispersal show values below the MAC for settlements;
● Exploitation of the site will not result in a cha nge of concentration of particulate matter and harmful substances in the ambient air;
● excavation works will not affect the quality of groundwater and drinking water supply of adjacent settlements. The degree of impact is assessed as negligible.
● The existing urban environment noise level will remain within the MAC limits as the excavation area is sited far enough of the residential areas. Noise emissions during operation will be within the acceptable norms for production sites;
● exploitation of the site is not associated with harmful radiation;
● Production is waste-free; there will be no generation of industrial waste or hazardous substances;
● exploitation of the site will not contaminate the soil with toxic or organic substances;
● an emergency plan wi ll be developed for the prevention and elimination of accidents in risky activities related to exploitation of the site for the purpose of protection of local populace.

Impact-limiting measures

Adoption of objective measures and activities related the reto will significantly reduce the expected impact on human health and on the main components of the environment in the area of the site for extraction and processing and the urban environment subject to health protection.

Ambient Air

Ambient air quality in the area surrounding the extraction site should be monitored by the competent authorities. Monitoring of particle concentration in the air over the site via development of a monitoring plan including monitoring of particulate emissions will be required.

Measures for reduction of concentration of particulate matter in the environment will be applied by implementing appropriate solutions in the technological processes that reduce particle formation and dispersal into the atmosphere through strict adherenc e to the technology of extraction; loading and unloading will be kept at low height, minimizing dust; extraction will only be done from the river bed in order to maintain high humidity of the material; options for shortening of the technological path will be sought.

Increase in the vehicle fleet leads to a proportional increase in fuel consumption and traffic in the area. It should be expected that with the increase of the total number of vehicles in the area the emissions of harmful substances characteris tic of transport will increase as well. Operating machinery will also emit exhaust gas. For this purpose it is necessary to mark the routes for heavy equipment and machinery using existing roads and not to allow the construction of new roads. Permanent con trol and prevention of overloading of vehicles transporting extracted raw material will be required in order to minimize the risks to children and adults.

Water and soil

Expected additional negative impact during implementation of the investment plan on soils, surface water and groundwater is mostly associated with the transportation of extracted alluvium and waste, accidents with fires and transportation, accidents due to lack of marking, safety signs or warnings on dangerous intersections.

The assignment estimates such impact as one of low level and complexity. The following recommendations should be observed: extraction is to be carried out in separate tracts parallel to the water flow in the greatest possible height and length, starting from the inner part of the site towards the coast until planned elevation is reached; pollution of the water body and the surrounding areas with petroleum products is to be avoided.

Impact from noise

Noise emissions are assessed as ones of local nature. They will not ca use acoustic loading to residential areas and territories.

In view of the above, implementation of the investment plan for the extraction of aggregates from a limited area in the bed of the Danube is not expected to cause lasting acoustic disturbance to surrounding areas.

Measures aimed at minimizing the adverse impact of noise are: monitoring of the levels of noise produced from extraction activity in the areas surrounding the extraction site and compliance with strict technological discipline; use of personal protective equipment and performance of periodic medical examinations for health and safety in the workplace.

Working Environment

The following conditions will prevent risks to health and safety: good manufacturing practice; technological discipline; provision of personal protective equipment to workers and its continuous wear; development of fire safety program for workers and equipment and emergency plan.

Affected Population

Impact on the environmental components and factors may have a different effect on people who are more sensitive to changes in air quality or increased traffic, especially at certain times. This effect should be taken into account in the development of risk - reducing measures in the EIAR.

It is recommended to reduce outdoor physical activity in areas affected by extraction, landscaping of depleted pits, promotion of local biodiversity, and development of landscape development plan for protection against noise and particle emissions.

Cumulative Effect

According to the preliminary expert evaluation, the territorial scope of the impact preparation and implementation of the investment project would have on ambient air quality would be of a local character and would not affect nearby cities as per monitored indicators.

The open method of operation ensures minimal possibility of cumulation of the effects of gaseous pollutants, dust and noise. Existing factors do not have long -term effect on human health.

The cumulative impact of the development of the site can be hypothetically defined as negligible as the rare no other extraction sites in the area. Anthropogenic pressure, however, will increase slightly, and the negative impact will be permanent, yet local.

The EIA report will give a detailed analysis of the current health status of the population, the expected impact on human health of the stages of construction and implementation of the project, location and distance of the proposed site to closest settlements and other facilities and activities subject to health protection.

The impact of the extraction activities on the sanitary conditions of the surrounding countryside in view of PM pollution, contamination with harmful gas emissions and noise will be assessed.

Factors damaging to human health and related to implementation of th e project will be analysed and evaluated.

After comprehensive assessment of the possible health risks and impact on human health of the project measures for prevention, reduction and compensationof the expected negative consequences of the implementation of the project on the environment and human health will be put in place.

IV. SIGNIFICANCE OF ENVIRONMENTAL IMPACT; DETERMINING OF INEVITABLE AND LASTING EFFECT THE CONSTRUCTION AND OPERATION OF THE INVESTMENT PROPOSAL MAY HAVE ON THE ENVIRONMENT THAT MAY BE M ATERIAL AND IS TO BE DISCUSSED IN DETAIL IN THE EIA REPORT

The EIA Report will provide a detailed qualitative characterization of the potential effect the development of the investment proposal may have on people and the environment.

1. Impact on the enviro nment and health

Significance of the impact on the components of the environment and human health in the implementation of the project is to be determined in the EIA on the basis of:

- Up-to-date information on the state of the environmental components;
- information on the type and quantities of waste and emissions generated as a result of implementation of the investment proposal;
- expected changes in components and environmental factors in the implementation of the project;
- health aspects of expected impact
- proposed alternatives.

Likelihood of impact

Impact on the components of the environment and on human health caused by the activities provided for in the investment plan is evaluated based on the likelihood of occurrence of such effect for each of the pr oposed alternatives. Likelihood can be qualified as:

● expected to have a significant negative impact;
● not expected to have a significant negative impact.

Scope of impact:

The scope of impact is determined based on the grading, analysis and evaluation of information on:

● specific features of the site that is to be developed;
● proposed alternatives;
● territory, site boundaries, boundaries of sanitary -protection zone and administrative boundaries;
● proposed construction, activities and technologies;
● the significance of expected effects;
● results of consultations conducted with the affected community and the competent authorities;
● impact assessment with the relative documents.

The range of potential impact in the EIA report is to be noted as:

● impact only for wharf and area for extraction;
● local impact in the area of extraction;
● impact on urban areas;
● other;
● cross-border impact.

Type of Impact

The type of impact according to the available alternatives and the elements of the environment can be defined as:

● direct or indirect;
● positive or negative.

Degree of impact

The degree of impact according to the state of the environment prior to realization of the proposal may be defined as:

● low;
● average;
● high.

Duration of impact

Duration characterizes the timeframe of impact of specific investment plan activities on the environmental components, which may be significant and need to be detailed in the EIA Report. Depending on the duration impact can be defined as:

● short-term;
● durable.

Cumulative effect

When the territorial scope of the impact partially or completely overlaps with existing impact with the same physical parameters, there is a cumulative effect of impacts on the environment. The EIA Report is to assess the cumulative impact of concurrent operation of existing installations and new equipment.

2. Importance of the environmental impact of activities envisaged in the investment plan

Realization of the current investment proposal is expected to have the following effects on the environment, which should be examined in detail in the EIA Report:

- air;
- surface water;
- waste;
- natural resources;
- wildlife;
- physical factors;
- protected areas and territories.

The estimated probability of occurrence of effect is:

- during construction works conducted on the wharf;
- during operation – continuous occurrence.

3. Significance of effects on the population of the activities foreseen in the investment proposal

Assessment of the impact of the investment proposal on public health s hould be made based on an analysis of the demographics of the population and the state of health in recent years, as well as analysis of the possible effect of estimated contamination of the working and natural environment.

In terms of health and hygiene aspects and risks the EIA Report is to determine the population that would be potentially affected by identifying and characterizing the risk factors for exposure and damage to human health and assessing the opportunities for combined, complex, cumulative and delayed effects during realization of the investment proposal.

The EIA Report is also to include any additional activities related to the implementation of the investment proposal.

4. Cross-border Effects

Strict implementation of the technology for ext raction of alluvial materials and their unloading on the wharf will prevent cross-border pollution by noise, PM, suspended solids, as well as health risks and other negative effects. The Romanian protected area ROSPA0090 Ostrovu Lung-Gostinu, which is locat ed across from the town of Marten and the village of Ryahovo and covers two islands, water area and coastline 19 km in length and a total area of 2488.5 hectares and is located about 500 meters northwest of the investment proposal site is not expected to be affected. There will be no transboundary impact on habitat types as there are no habitat types subject to protection in the standard form of PA. Subject to protection in this protected area are 119 species of birds. The greatest importance for their pro tection rests with wetlands on both banks of the Danube that were once extensive marshes. The area of impact of IP on birds will be in close proximity to the equipment and will cover water area

with a radius of about 150 meters. The Romanian protected area ROSPA0090 Ostrovu Lung-Gostinu falls outside that area. Investment proposal is consistent with the purpose and object of protection of protected area ROSPA0090 Ostrovu Lung - Gostinu. Transboundary effects are also not expected on nearby wetland of international importance (Ramsar sites) ROSPA 0022 (Comana Natural Park) protected under the Birds Directive, which has a total area of 24,963 ha and is located 10 km from the IP. The same applies to area ROSCI 0043 (Comana) protected under the Habitats Directive with a total area of 26,481 ha, which also lies about 10 km from the extraction site.

The EIA Report will assess the possibility for accumulation of impacts on the islands and banks of the river, as well as on some groups of animal biota.

5. Assessment

Assessment made in the EIA Report will be summarized in a table following the model attached below per components and factors, and will offer concrete measures for prevention, reduction or compensation of negative impact:

Components and environmental factors	**Type of impact**									**measures for prevention, reduction or compensation of negative impact**
	Direct	*Indirect*	*Cumulative*	*Short-term*	*Long-term*	*Permanent*	*Temporary*	*Positive*	*negative*	
During construction										
Ambient air										
Surface water										
groundwater										
geological environment										
Land and soil										
Flora										
Fauna										
Protected zones and areas										
landscape										
Heritage										
waste										
Hazardous energy sources										
Health and hygienic aspects										

During operation										
Ambient air										
Surface water										
groundwater										
geological environment										
Land and soil										
Flora										
Fauna										
Protected zones and areas										
landscape										
Heritage										
waste										
Hazardous energy sources										
Health and hygienic aspects										

V. CONSULTATIONS CONDUCTED WITH THE RELEVANT DEPARTMENTS AND ORGANIZATIONS AND THE PUBLIC THAT WOULD BE AFFECTED FROM THE IMPLEMENTATION OF THE INVESTMENT PROPOSAL

Pursuant to Art.9, para. 2 of the Ordinance on the Co nditions and Procedures for Environmental Impact Assessment letters of advice were sent to institutions and organizations listed in Table V.-1.in relation to implementation of the Investment Proposal. Information obtained in response to the letters (letter s, statements, opinions, recommendations) (see Appendix) has been used in drafting the assignment.

Table V.1

No	**consultation (municipality/ department/ organization/other)**	**Expressed opinions / recommendations / comments etc.**	**Adopted/dismissed**
1.	consultations with the public held from 19.03.2014 to 04.08.2014 incl. – Notices published in the "24 Chasa" newspaper on 03.19.2014, and the "Trud" newspaper on 19.03.2014	No objections or comments (oral, telephonic, or written ones);no interest in IP shown	-
2.	Consultation with Danube region Basin Water Management - Pleven - Letter **ref. No 378/24.03.2014**	Letter with ref no 378/07.04.2014	Adopted; will be implemented in the EIA Report
3.	Consultation with the Executive Agency "Exploration and Maintenance of the Danube"- **Letter ref. No 369/24.03.2014**	-	-
4.	Consultation with the Museum of History, Nature Department, Ruse - **Letter ref. No 136/24.03.2014**	Opinion ref. No 169/04.04.2014	Adopted; will be implemented in the EIA Report
5.	Consultation with Ryahovo Municipality- **Letter ref. No 53/25.03.2014**	-	-
6.	Consultation with Babovo Municipality - **Letter ref. No 16/24.03.2014**	-	-
7.	Consultation with the Coalition for Sustainable Development, Sofia - **Letter ref. No 014/21.03.2014**	-	-
8.	Consultation with the Ministry of Health - **Letter ref. No IP-00-2/21.03.2014**	Letter ref. No IP-00-2/22.04.2014	Adopted; will be implemented in the EIA Report
9.	Consultation with the Municipality of	-	-

	Ruse- **Letter ref. No 30-423-1/24.03.2014**		
10.	Consultation with Slivo pole Municipality- Letter ref. No **SP 1519/21.03.2014**	Opinion ref. No SP-1519/26.03.2014	Adopted
11.	Consultation with "Friendly Support" Foundation, Rousse- **Letter ref. No 04/24.03.2014**	Opinions ref. No 036/28.03.2014	Adopted; will be implemented in the EIA Report and DIA Report
12.	Consultation with the Regional Forest Directorate - Rousse – **Letter ref. No940/23.04.2014**	Letter ref. No GF-88/19.05.2014	-

VI. Suggested structure of the EIA report

- **Home page**
- **Contents**
- **Authors of the report**

INTRODUCTION
- **Basis for development of EIA**
- **Development Process - participants, public discussions**

BODY
I. Annotation of the investment proposal

1. Location of the investment proposal - map of the area;
2. Current condition of the site
3. Description of the investment proposal - capacity, location of the individual elements
4. Description of infrastructure
5. Key materials, natural resources and energy required and used in the construction and operation of the facility
6. Social effects of the implementation of the project

II. Location and/or technological alternatives and reasons for their choice taking into account the impact on the environment, including "zero alternative"

1. location alternatives
2. technological alternatives
3. zero alternative

III. Description and analysis of components and environmental factors that will be significantly affected by the project and the interaction between them:

1. Ambient Air
    1.1. Summary of climatic and metrological factors, temperature, wind, precipitation, clouds
    1.2. Ambient air quality in the region (using all available data)

2. Surface and groundwater:
    2.1. Surface water
    2.2. Groundwater. Hydrogeological conditions and factors for the formation of groundwater
3. Lands and soils. Subsoil
    3.1. Characteristics of soil near the site
    3.2. Geological structure in the area of the site
    3.3. Seismicity
4. Flora and Fauna.
5. Protected natural areas. Protected zones.
6. Landscape
7. Heritage
8. Waste
9. Hazardous energy sources
10. Health and hygienic aspects

IV. Description, analysis and evaluation of possible significant effects on the environment and human health. Characteristics of sources of pollution specified in the project:

1. Ambient Air
2. Surface and groundwater:
3. Waste
4. Lands and soils. Subsoil
5. Flora and Fauna.
6. Protected natural areas and zones.
7. Landscape
8. Heritage
9. Waste
10. Hazardous energy sources
11. Health and hygienic aspects
12. Forecast for cumulative impacts
13. Cross-border effects
14. Summary of the potential impacts on people and the environment

V. List the sources of information used in the report

VI. Information about the methodologies used to forecast and evaluate the impact on the environment

VII. Description of the measures envisaged to prevent, reduce and where possible offset any significant adverse environmental impacts, and plan for the implementation of these measures

VIII. Statements and opinions of the public concerned, the competent authority for a decision on the EIA and other specialized agencies as a result of conducted consultations.

IX. Conclusion

APPENDIX

Annexes that are to be submitted:

1. Graphical material

2. A copy of the assignment approved by the competent authority;

3. Legislative and institutional framework;

4. List of the authors of the Report, each having signed the respective part drafted by them; written declarations under Art. 11, para. 3 of the Ordinance on the Conditions and Procedures for Environmental Impact Assessment signed personally by the experts.

4. Non-Technical Summary of the EIA

5. Degree of Impact Assessment Report (DIAR) on "Kalimok Brushlen" BG0000117 Protected Area for conservation of natural habitats and wild flora and fauna and "Complex Kalimok" BG0002030 protected under the Wild Birds Directive.

VII. LIST OF RELEVANT APPLICATIONS

The following documents are to be enclosed with the EIA Report: maps, location, photographs, written statements from conducted consultations, written statements of experts under Art. 11 of the Ordinance on the Conditions and Procedures for EIA a nd copies of diplomas.

VIII. ***STAGES, PHASES, AND DEADLINES FOR EIA REPORT PREPARATION***

The EIA report will be developed in phases in compliance with the Ordinance on the Conditions and Procedures for EIA

1. Draft To R for the scope and content of EIA by June 2014;

2. Consultation with the public and stakeholders on the proposed scope and content of the report by August 2014;

3. Approval of the proposed scope and content by the competent authority by August 2014;

4. Drafting of EIAR and DIAR –by August 2014;

5. Submittal of EIAR and DIAR before the competent authority by August 2014;

6. Public discussion of EIAR and DIAR by October 2014;

7. Provision of materials from conducted public discussions; opinion of the Assignor and the experts on the proposals, recommen dations, opinions, objections by October 2014;

8. Decision of the competent authority on EIAR and DIAR –by November 2014.