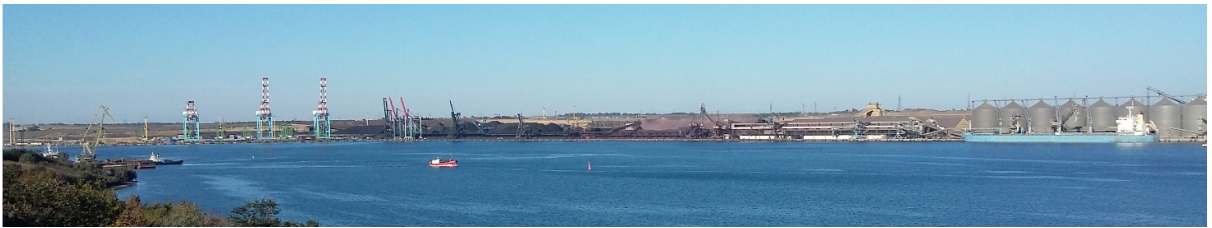


MV Cargo Ltd

Project: **Development of a new grain terminal in the Port of Yuzhny**



Non-Technical Summary of the Statutory Environmental Impact Assessment



August 30, 2016

1 Background

The Initiative

Two of the co-owners of the largest Ukrainian group of private port terminals, TransInvestService ('TIS Group') decided to develop a new private grain transshipment terminal (the 'Project') in the Port of Yuzhny, Ukraine. They have founded a new legal entity to this end, named MV Cargo ('the Company'). MV Cargo will construct the terminal facilities. The Project envisages the participation of Cargill (the 'Partner'), an international commodities trader, after completion of the construction works. The Terminal will be a multi-user facility open to third-party clients to the extent spare capacity is available.

Rationale of the Project

The role of agriculture in the Ukrainian economy has steadily increased within the past decade. In 2014 the share of agricultural production reached 16% of GDP. The volume of agricultural exports amounted to 16.6 billion USD (30.2% of total Ukraine's exports) including 6.5 billion USD attributed to grains. Out of 28.5 million tons of corn produced in Ukraine, 17.5 million tonnes (61%) have been exported. For wheat the share of exports amounted to 44% of total wheat production; for barley – 46%; for soy – 43%. These results have already made Ukraine the second largest grain exporter in the world¹.

Despite its current strong positions the Ukrainian grain exports is still expected to grow due to progressive increase in crops productivity and further globalisations of the agricultural markets. Therefore the need for efficient transportation of large amount of grain is relevant for Ukraine. The development of sea transshipment infrastructure with market-based access to its services promotes further growth of grain exports that is vital to the country's economy.

Project Financing and Due Diligence Assessment

MV Cargo approached the European Bank for Reconstruction and Development ('EBRD') and the International Finance Corporation ('IFC') for financing the Project. EBRD and IFC are assessing MV Cargo's application for financing. EBRD selected Tebodin Ukraine CFI (the 'Consultant') to assist with the Environmental and Social Assessment (ESA) as part the due diligence of the proposed Project. The Project

The NTS does not refer to the outcomes of the ESA conducted by the Consultant.

Objective of the Non – Technical Summary (NTS)

The objective of the NTS is to summarize the outcome of the EIA process performed in relation to the Project. This NTS provides an overview, in non-technical language, of the main findings of the EIAs performed for Berth N.25 and Terminal in accordance with Ukrainian legislation. It is important to note that this NTS does not, and is not intended to, convey *all* of the information relating to the Project and its potential effects on the environment. By necessity, the text provided herein is a summary of the detailed assessments discussed in the EIAs. Therefore, for fully detailed information pertaining to any part of this NTS, please refer to the EIAs, which is available at project construction site and via the MV Cargo website (www.mv-cargo.com).

The NTS is also presenting the set of environmental and social mitigation measures in line with the IFC Performance Standards MV Cargo is planning to implement and monitor its effectiveness.

¹ [Ukrainian Agribusiness 2015](#)

2 Project Description

General overview

The Project envisages the development and operation of a green-field private grain terminal with a handling capacity of up to 5 million tonnes of grain per year. The Project encompasses three main components:

1. Construction and operation of the grain Terminal (“the terminal”) ;
According to the recent available design solutions, the Project will consist of the following main facilities², to be developed by MV Cargo:
 - Rail intake facilities (2 unloading points for 2 wagons each with sampling);
 - Truck intake facilities (6 unloading points for trucks incl. trailer by means of truck tippers; 1 unloading point suitable for back unloading trucks / tipping cars; truck buffer area);
 - Grain storage facilities (14 silos and one flat storage);
 - Grain cleaning and drying unit;
 - Transport network of elevators and conveyors;
 - Ship loader for loading of bulk grain on ships;
 - On-site utilities (power supply, site lighting, gas supply, potable water supply, sanitary sewage, storm water, sewage, firefighting networks, security systems, communication networks);
2. Construction and operation of Berth No. 25 (“the berth”) ;
The design, construction and dredging works at Berth No. 25 aim to reach the depth of -16 m and operational length of 422 m. That will allow handling of vessels with the deadweight of up to 100 000 tonnes ‘TIS Gidrotekhnika’ is a general contractor for Berth No. 25 construction.
3. Dredging of the approach channel to the berth.
On 23 March 2016, the Company signed binding Agreement with the State Enterprise ‘Ukrainian Seaports Authority’ (USPA). According to the Agreement USPA will support the terminal development by designing, implementing and monitoring the necessary dredging works up to 16 meter depth for the connection of the berth to the inner channel of the Port of Yuzhny.

The location of the Project Site including the access roads is presented in Figure 2 Location of the Project Site Plots.

Project Construction phase

Onshore part of the terminal

Before the start of the main construction works the preparatory work are carried out. Vertical planning suggests the excavation of 152 thousand m³ of soil and fill of 19 thousand m³ at the sites of the storages;

Storage facilities are the major onshore structures to be developed. Construction of a flat storage with dimensions of 60.0x216.0m will require over 400 piles and 3.4 thousand m³ of concrete. The foundation of 14 silos storages will require 12.7 thousand m³ of concrete and 710 tonnes of steel.

It is expected that the project become operational within 2 years from commencement of construction.

Construction of access motor road and railroad is covered by separate design documents.

The berth

Before the start of the main construction works the following preparatory work are carried out:

² Besides the listed facilities the design documents cover development of the second flat storage and installation of the second ship loader with all the necessary equipment for grain transporting (referred as Construction Phase II). However these facilities are outside of the scope of the Project.

- arrangement of temporary access roads,
- arrangement of sites for storage (9.4 thousand m²) and assembling of structures and equipment;
- installation of temporary buildings (household, administrative and warehouse facilities with total area of 380 m²;)
- provision of temporary power and water supply (600 m power cable line and water pipeline connection to existing TIS Group's networks)

The implementation of the berth design solutions provides the following types of work:

- excavation of 715 thousand m³ from the pit under the berth No.25 at an area of 7.74 ha;
- dumping of the dredged soil at the authorised sea underwater dumping site located in 6.2 km from the Port entrance. The dumping site area is 150 ha;
- hammering of 492 metal pipe piles with total mass of about 11.5 thousand tonnes;
- installation of 841 metal sheets with total mass of about 3 thousand tonnes;
- filling pipe pile hollows and berth body with 313 thousand m³ of sand;
- reclaiming of 4.2 ha of the estuary water area for the berth body formation.

The onshore works will be conducted with a fleet of construction vehicles and machinery including 5 caterpillar cranes (25 and 50 tonnes), 4 truck cranes (16 and 25 tonnes), 1 bulldozer, 1 excavator, 18 welding machines; 3 mixers, 6 trucks (20 tonnes), 1 diesel hammer and other equipment

The aquatic part of the Berth construction will involve 1 Single-bucket dredger, 3 dumb barges, 5 tugs, 1 pontoon with caterpillar cranes (120 and 160 tonnes) on it, two cargo barges, and 1 floating crane (16 tonnes).

The expected duration of Construction phase is 2 years.

The project will be constructed by direct contracting of services, works and equipment supply and installation. MV Cargo contracted TIS Gidrotekhnika as general contractor for the berth and terminal construction in June 2016.

Project operational phase

The grain terminal facilities will be developed by MV Cargo and upon completion, Cargill Inc., a leading global agriculture commodities producer and trader, is expected to purchase 51% of stake of the company and become a major customer and start operation of the Terminal and Berth.

The terminal is designed for annual transshipment of 5 million tonnes of grain cargo (wheat, barley, oats, corn, sunflower seed, and canola). The operations will be carried out in the all year-round, non-stop mode. The key operations of the Terminal are presented on the Figure 1 Simplified layout of the key operations of the

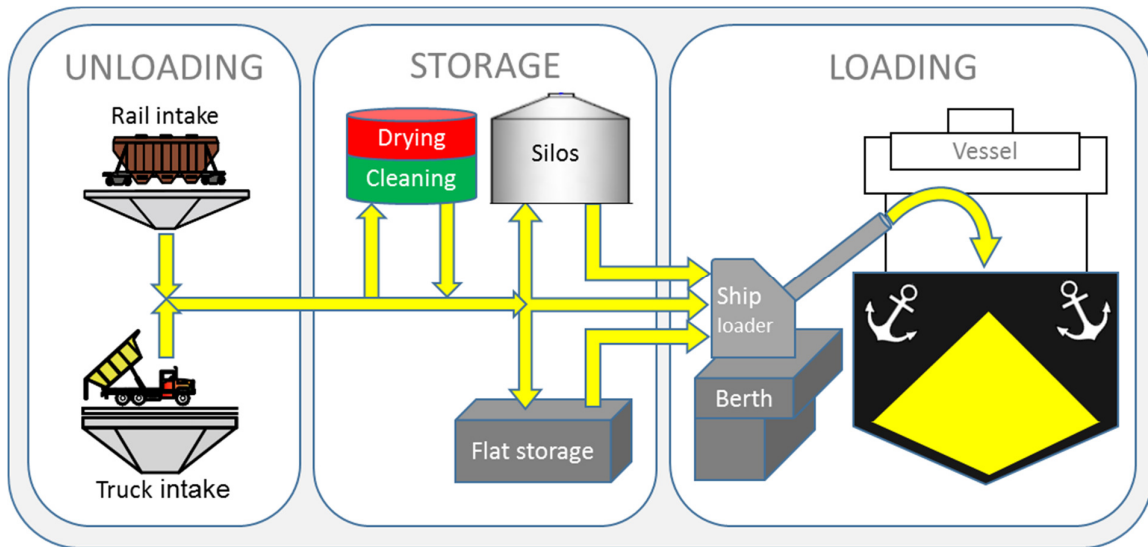


Figure 1 Simplified layout of the key operations of the Terminal

Terminal.

Unloading

The grain will be delivered to the terminal by road and railroad transports (1-2,5 million tonnes each). The unloading of trucks will be done via three streams. Two of them will have a capacity 550 t / h, and one - 700 t / h; the train cars will be unloaded via two streams 1500 t / h each

Storage

The unloaded grain will be transported by belts and drag conveyers to the temporary storage facilities. The silos type storage will have a capacity of 210 thousand tonnes. The flat storage will be able to accommodate 80 thousand tons at one-time.

To allow reception of substandard grain (by debris and moisture content) the drying and cleaning units are designed. The capacity of the drying unit is 150 tonnes per hour for reduction of moisture from 18 to 13 percent. Basic cleaning separator process up to 250 tonnes per hour.

Loading

A ship loader with the capacity of 2000 tonnes / hour will load the grain to sea vessels. The maximum parameters of a vessel are:

- Length - 245.0 m;
- Width - 43.0 m;
- Full capacity - 100 thousand tons;
- Net capacity - 95 thousand tonnes.

The terminal is expected employ ca. 98 women and 182 men.

The annual consumption of resources is expected at the following level:

- Electricity - 10 thousand MWh
- Water - 6.25 thousand cubic meters
- Gas - 1 987.2 thousand cubic meters

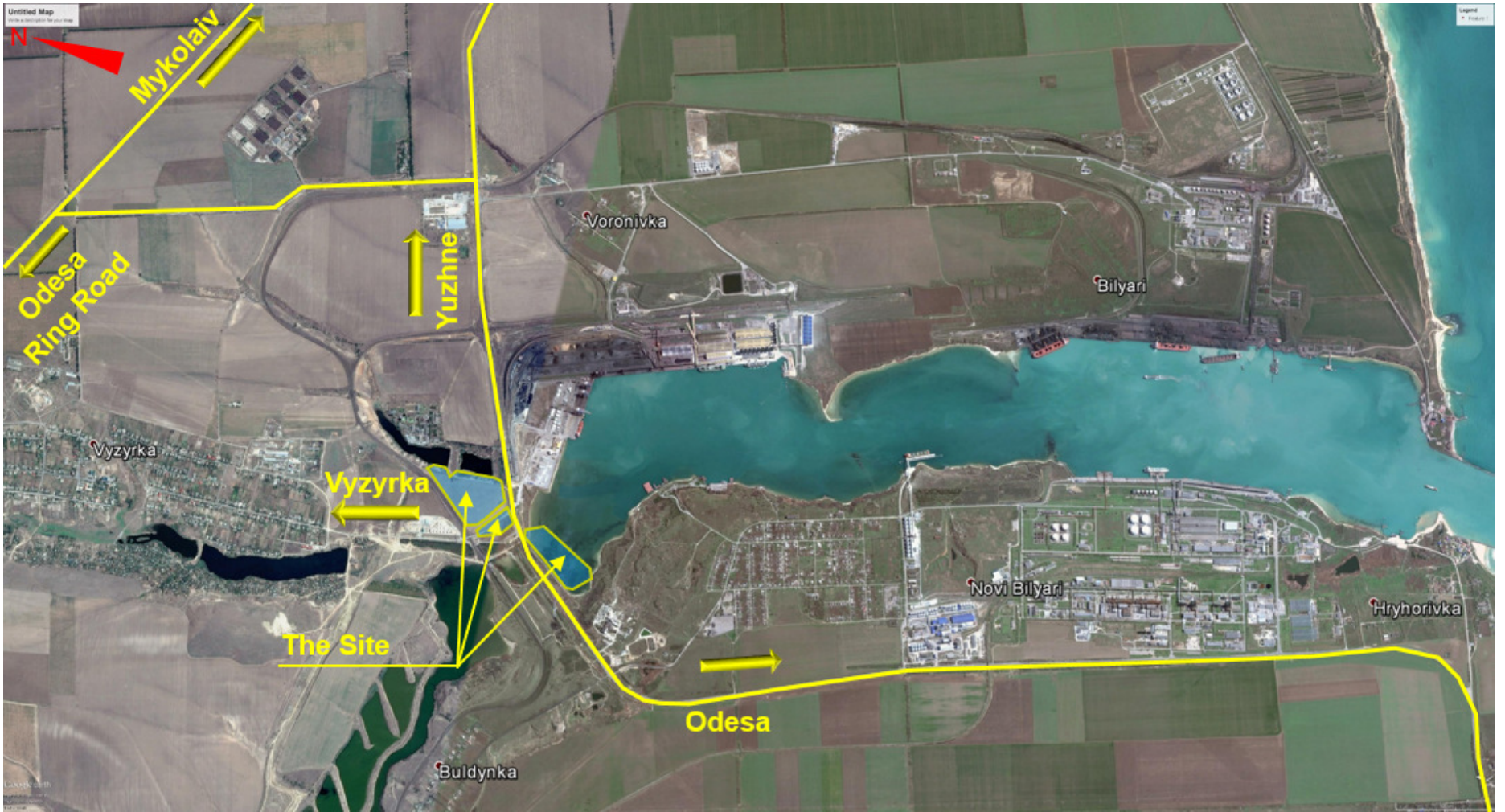


Figure 2 Location of the Project Site Plots.

3 Alternatives

'Do-nothing' alternative

Although the Project is associated with certain adverse environmental impacts (as described in Chapter 6), it brings opportunities social and environmental improvements as well.

First of all 'do-nothing' alternative is less favourable for the economic development of Ukraine and the Yuzhny area. Without the initiative of the Project, Ukraine will have less capacity to export grain that is its principal product. As described in chapter 3 national consumption can't be considered as an alternative. Besides that higher margins can be typically achieved by exporting.

Secondly, the Project operations will provide direct employment opportunities for the local residents as well as for qualified professionals from outside. The indirect employment is expected in service sector providing its services to the company and its employees. The construction phase requires the materials and services that can be mostly provided by local companies.

Finally, maritime transport is the most efficient in terms of fuel consumption and consequently in terms of CO2 emissions.

Alternative locations

Alternative locations have not been considered as the Project is located in a designated port area of Ajalyk estuary. The estuary creates favourable conditions for the safe navigation all around the year. The existing infrastructure of the port of Yuzhnyi (approach channel, navigation and bunkering facilities, etc.) will be used by vessels attracted by the Terminal. Thus the need for material developments is avoided.

The Project area has already a good rail and road connection. The nearby railway station "Khimichna" owned and operated by TIS Group secures accurate delivery of grain to the Terminal and thus its normal operations.

The location of other terminals belonging to TIS next to the Project area facilitates the access of the machinery and personnel, provides connection of the Terminal to utility networks.

The proximity of the selected location to the main agricultural areas of southern Ukraine allows to deliver the crops within a short time and with minimal fuel consumption.

4 Legal aspects and compliance with relevant environmental and social laws

The Company

MV Cargo Ltd is the legal entity for the construction of the terminal. MV Cargo is owned by a number of individuals of the owners of the TransInvestService Ltd (TIS). According to the agreement made with Cargill, Cargill will then acquire 51% of the shares and will operate the Terminal. The board of directors of M.V Cargo will adopt and implement Cargill's EHS policy in full after the terminal starts operations.

The Project Land Plots

The Project required acquisition of 11 land plots of total acreage of 28.01 ha. The company purchased nine of these land plots from its three private owners and two plots were acquired from the State Administration of Odessa region under the long-term (49 years) lease agreements signed in September 2011 and March 2010.

Relevant environmental and social laws

According to the Article 51 of the Law of Ukraine "On Environmental Protection" the EIA is a compulsory component of design documents. The content of the EIA is determined by the national construction standard

“Structure and Contents Impact Assessment (EIA) during design and construction of plants, buildings and structures” (ДБН А.2.2-1-2003).

According to the Article 31 of the Law of Ukraine “On regulation of urban development” the design documents of the developments of high environmental hazard are subject to the State Expertize that examines the sufficiency of the presented documents including EIA materials. A positive conclusion of the Expertize is a prerequisite for obtaining the Construction Permit.

According to the Decree Cabinet of Ministers of Ukraine “On Approval of the Issuance of Permits for Works on the Lands of Water Fund” the application should contain the EIA.

5 EIA Process

The current status of the EIA process related to the components of the Project is as follows:

The terminal

- The EIA section for the design of the onshore part of the Terminal has been prepared by the general design contractor Zernovaya Stolitsa ltd.
- On 26.03.2016 the Announcement of Intent (the Project summary) and The Statement of the Environmental Consequences (EIA summary) have been published in the local newspaper.
- On 31.05.2016 the report on examination of design documentation of the project “Construction of gain transshipment complex on the Berth No. 25 located the territory of Vizirka Village Council and the territory of Novobilyarskyi Settlement Council (outside of the settlement limits)” has been issued by the Odesa branch of the State Expertise. The compliance to the standards (including environmental) is stated.
- On 14.06.2016 the Construction Permit has been issued by the State Architect and Construction Inspection of Ukraine.

The berth

- Inros Lackner SE has executed the design for the Berth No.25. Subsequent adaptation to Ukrainian construction norms has been performed by Ukrainian contractor ‘GT Proekt Ukraina ltd’. The EIA section of the Berth design has been prepared by the chartered EIA developer S. Djedjora (certificate AP №009193).
- On 30.04.2016 The Announcement of Intent (the Project summary) and The Statement of the Environmental Consequences (EIA summary) have been published in the local newspaper.
- On 30.05.2016 the report on examination of design documentation of the project “Construction of Berth No.25” has been issued by the State Expertise. The compliance to the standards (including environmental) is stated.
- On 14.07.2016 the Construction Permit for the Berth No 25 has been issued by the State Architect and Construction Inspection of Ukraine.

Dredging works (Related to the berth)

- On 30.03.2016 the positive conclusion of the State Expertise was issued by the Ministry of Ecology and Natural Resources of Ukraine for the EIA section of the Dumping site design.
- On 16.08.2016 the Permit for Works on the Lands of Water Fund (soil excavation and dumping) has been issued by the Ministry of Ecology and Natural Resources of Ukraine.

Dredging of the approach channel

- The project is owned by Yuzhny Sea Port Authority. Feasibility study for the entire scope of dredging works in the port (that includes the approach channel to Berth No. 25) has been conducted by State Project Development & Research Institute of Marine Transport ‘Chernomorniiproekt’. The study encompass an EIA section.

- According to information from the Company the feasibility study has passed the State Expertise and was submitted to the Cabinet of Ministers of Ukraine (CMU) for approval. Upon the CMU decision, Yuzhny Sea Port Authority will be able to launch a tender for development of the detailed project design for dredging of the approach channel up to Berth No. 25.
- According to the Agreement between the Company and State Enterprise 'Ukrainian Seaports Authority' (USPA) tendering procedure will be conducted in August-October 2016 and dredging is expected to be started in November 2016 and completed by February 2018.

6 Summary Assessment of Environmental and Social parameters

Air Quality

Baseline

According to Hydro meteorological Centre of Black and Azov Sea, the ambient air quality monitoring results indicate that pollutant concentrations are significantly lower than the Maximum Allowable Concentrations (MAC) defined in the "State Sanitary Rules of Air Protection" adopted by the Ministry of Healthcare of Ukraine on 9.07.1997:

- Dust - 0.05 mg / m³ (0.1 of MAC)
- Sulphur dioxide - 0,02mg / m³ (0.04 of MAC)
- Nitrogen dioxide - 0.008 mg / m³ (0.09 of MAC)
- Carbon monoxide - 0.4 mg / m³ (0.08 of MAC)

Key construction impacts

A temporary nature of the impact on the environment occurs during construction of the facility. The following emissions sources will be present:

- Dust emission from excavation and loading works, interspersing of sand, crushed stone, asphalt,
- Emission of nitrogen oxides, carbon black, sulphur dioxide, carbon monoxide, benzopyrene, formaldehyde and kerosene, from operation of diesel generators;
- Welding works resulting in emission of iron, manganese, silica, inorganic fluorides, hydrogen fluoride, nitrogen oxides, carbon monoxide, suspended particulate matter;
- Emission of iron, manganese and their compounds, nitrogen oxides, carbon monoxide as a result of gas cutting operations;
- Dimethylbenzene (xylene) methylbenzene (toluene), butyl acetate, acetone, petroleum spirit and suspended solids from the paintwork;
- Emissions from transport and construction equipment (carbon monoxide, nitrogen oxides, and non-methane organic compounds).

Key operational impacts

There will be 103 sources that emit pollutants at the territory of the terminal.

Calculation of dispersion of harmful substances with due account of background figures and determination of the ground level concentration indicates that the concentration of polluting substances does not exceed the MAC for settlements in any point of the normative sanitary protection zone. Impact on atmospheric air will be within the MAC limits.

There are no emission sources of polluting substances in the territory of the berth.

Mitigation measures

MV Cargo will develop, implement and maintain a construction environmental and social management plan (CESMP) consistent with the project EIAs, Ukrainian legislated requirements, IFC PS requirements and which will include air emissions and dust management plan among other E&S plans.

As part of the air emission and dust management plan, MV Cargo will provide technical specification of air emission control measures included in the final design of the berth and the terminal and relevant for the project operational phase in order to achieve compliance with the Ukrainian legislated requirements.

During operation, in accordance with the Tax Code of Ukraine, the ecological tax on emissions to atmosphere will be calculated on the basis of actual works and will be paid according to the legally established procedure.

Noise and vibration

Baseline

There is no data on the background level of noise in the area of project, so the acoustic impact was calculated according to methodologies.

Key construction impacts

The calculated construction phase noise level at the territory of the berth would be approximately 95.6 dBA. Respectively, a noise level at the closest residential area that is located 980 m far away from the berth construction site would be approximately 52.6 dBA.³

In addition, calculated noise level at the territory of the terminal during construction phase would be approximately 95.6 dBA. A noise level at the closest residential area that is located 930 m far away from the terminal during construction phase would be approximately 68.2 dBA.⁴

A noise calculation in EIA for the project construction phase considers the worst scenario. However during construction works the following mitigation measures for the terminal and the berth construction would be carried out by the project general contractor as foreseen by EIAs:

- Installation of the equipment on vibration-damping grounds (reduce noise level to 3.0-4.0 dBA)
- Use of insulating covers on electric motors of equipment (reduce noise level to 2.0-3.0 dBA)
- Limit the traffic speed (reduce noise level to 5.0-6.0 dBA)
- Audio signal prohibition signs
- Installation of barriers on the perimeter of construction site (reduce noise level to 7.0-9.0 dBA)

Implementation of abovementioned noise mitigation measures according to EIAs would reduce noise level up to 22 dBA. As a result, after implementation of mitigation measures listed above the calculated noise levels from the territory of the berth during construction phase would be approximately in a range of 30.6 – 35.6 dBA; and from the territory of terminal during construction phase will be approximately in range of 46.2 - 51.2 dBA.⁵

Key operational impacts

The calculated operational phase noise level at the territory of the Berth designed would be approximately 82 dBA. Respectively, a noise level at the closest residential area that is located 980 m far away from the berth would be approximately 26.3 dBA

The calculated noise level at the territory of terminal during operational phase would be approximately 114.2 dBA, Related noise level at the closest residential area that is located 930 m far away from the terminal would be approximately 68.8 dBA. A set of noise mitigation measures has been designed by MV Cargo to address

³ EIA for Berth N.25

⁴ EIA for Terminal

⁵ According to the State Sanitary Rules of Planning and Building Of Settlements (adopted by Ministry of Healthcare of Ukraine on 19.06.1996) the maximum permissible sound levels in a residential area are 70 dBA at daytime and 60 dBA at nighttime.

noise levels compliance Ukrainian legislated standards.⁶ The sufficiency of the designed measures has been confirmed by the State Expertise. Thus, operation of the facilities will not produce a negative acoustic impact on the environment and social conditions of life and rest of people.

Mitigation measures

- MV Cargo will develop and implement efficient noise and vibration management plan in line with EIAs for berth and terminal, Ukrainian legislated requirements and IFC EHS requirements, that will address noise mitigation measures and monitoring procedures.
- MV Cargo will establish efficient grievance mechanism prior to construction commence

Soil Geology and Groundwater

Baseline

In structural-tectonic terms, the Project Site is located in the south-western part of the Black Sea Depression Geological structure of the Grain Terminal site, explored to a depth of 30 m, consists of quaternary eolian-diluvial loesslike loam and sandy loam, loam and clay, which are underlain with Meotian sand and clay deposits. The surface is covered with topsoil.

The first aquifer is encountered at a depth of 5.4-5.6 m in silt clay and loess like sandy-clay. In the middle of the slope, there is water table at a depth of 9.5-13.8 m, in the layer of loam. Relative aquiclude is clay. The groundwater is of chloride-sodium-magnesium nature, with a salinity of 10.5-10.6 g/dm³

The geological structure of the Berth's area is investigated to a depth of 40 meters and is represented by loams, marine sludge, light silty clay, limestone and coquina.

Ground water is slightly pressured, hydraulically closely associated with the waters of the Small Ajalyk estuary.

Key construction impacts

Grain Terminal:

- Soil excavation-172877 m³;
- Soil filling-19.340 m³;
- Soil excess: 81.563 m³.

Soil and vegetation (within fertile layer) to the extent required for amelioration works, reinforcement of slopes followed by herb sowing will be stored in the immediate vicinity of the work areas while the remainder will be carried out by trucks on the adjacent areas by agreement with the land users.

There is no impact on soil.

Berth No 25: The berth will be erected at the artificially reclaimed area on the estuary side and no allocation of additional land areas is required. There is no impact on soil.

Key operational impacts

Operations can result in the pollution with spilled fuel from operating transport and construction mechanisms.

Mitigation measures

The soil, excavated during construction, will be stored near the border of Project Site, to be later used for Site landscaping.

The following measures are planned:

- MV Cargo will prepare soil and groundwater management plan;
- MV Cargo will prepare oil and chemical spill contingency management plan;
- to cut soil and arrange an embankment out of sandy and clay loam soil;
- to arrange motor roads and accesses to all designed buildings and facilities;
- to plant trees and shrubs.

⁶ The sufficiency of the noise mitigation measures designed by MV Cargo has been approved by the Ukrainian State Expertise.

- to provide technological area of the grain terminal with solid pavement and a drainage and storm water removal systems.

Water and Wastewater management

Baseline

The Project area is located between the rivers Dniester and Dnipro, on the shores of Malyi Adzhalykyskiy estuary. Free broad connection of the estuary to the sea causes almost identical hydro chemical mode of these water areas. Long-lasting in situ observations show that the main hydro-chemical parameters have not changed significantly, and generally repeat the dynamics of hydro chemical indicators in the north-west part of the Black Sea, adjacent to the area of works. The surveyed area of the Black Sea can be classified as man-eutrophicated, and is characterized by a high content of nutrients with a predominance of organic forms.

Key construction impacts

During construction of the terminal, water will be required for the following purposes:

- industrial water – 15 m³/per shift;
- potable water for household use – 6 m³/per day;
- sewage – 6 m³/per day;
- fire-fighting water- 20 l/s.

During construction of the berth, the water will be required for process needs (1.97 l/s) and for house hold needs (0.37 l/s). Potential negative impact to the sea water can arise during construction works, only in case if the prescribed mitigation measures and procedures by the construction environmental and social management plans are not followed and/or in the accident or emergency situations.

Key operational impacts

During construction of the terminal it is planned to install a domestic and fire fighting water supply system, a system for collection and treatment of domestic sewage and a storm water system.

There will be no impact on groundwater and surface water as the whole territory used for operations (including 6.1 ha of premises and 4.8 ha of outdoor paved surface) will be covered by storm water collection and treatment system.

Operation of the berth will require 36 m³ per day of water for household and fire-fighting purposes. In the operation period, the impact to water environment is expected during annual maintenance works clean-up of the bottom sediment to maintain the depth at the berth.

Mitigation measures

To protect the sea water during construction, special attention must be taken to prevention of disposal of construction waste, oil, lubricants and sewage in the water

Reception of oily waste water, household sewage, and debris from the buoyant means and their subsequent removal from the construction site will be provided near the facility under construction.

In order to protect underground and surface waters against pollution the EIA requires to implement on the site the following engineering measures:

- project general contractor will:
 - arrange a wheel cleaning station with sludge collection unit at the exit from the construction site
 - provide construction site with portable toilets;
 - collection of household wastewater to leak-proof tanks during construction phase;
 - regular collection of the construction site sewage and wastewater by the licenced contractor;
 - arrange the storm water collection and treatment system.

- MC Cargo will prepare and implement a Water management Plan
- MC Cargo will prepare and implement a Wastewater Management Plan
- Connection of the Project facilities sewage operated by "TIS Container Terminal" and
- MV Cargo will prepare, implement and maintain a site specific groundwater management plan and wastewater management plan for the project construction and operational phases

Dredging works (for Berth N.25)

The volume of dredged material related to the berth at the end of construction is estimated to reach approximately 714 thousand cubic meters.

Key capital dredging impacts

- impact on plankton and benthos communities caused by soil removal and turbidity formation during pit excavation, soil disposal at sea underwater dumping site,
- impact on plankton communities caused by turbidity from driving of metal pipe piles, metal sheeting, filling pipe pile hollows and berth body with sand
- takeover of 4.2 ha of the estuary water area for berth body formation

The impact of hydrotechnical works on the marine environment is produced both directly - by destructing biocenosis in the dredged water area and in the soil dumping area, and indirectly – by disturbance of bottom sediments in the work zone and in the adjacent water areas. The latter leads to silting of bottom organisms, short-term reduction of plankton biomass due to lower illumination and higher content of pollutants in water caused by desorption from the surface layer of bottom sediments. The negative impact of the works on the ecosystem of the north-western part of the Black Sea and Small Adjalyk liman will reveal itself in a change of heat conductivity, optical properties of water, deteriorated breathing conditions for hydrobionts and mechanical damage, sometimes, mortality of a number of species.

The damage inflicted on the living aquatic resources in the course of the works will be associated with death of food organisms for fish resulting from:

- complete destruction of the bottom biocenosis within the dredged and soil dumping areas;
- partial silting of the bottom communities in the adjacent water areas;
- loss of phyto- and zooplankton within the zone of high technogenic turbidity which is formed in the course of the works;
- separation of a part of the estuary water area.

Key maintenance dredging impacts

In the operation period, the impact to water environment is expected during annual maintenance works – clean-up of the bottom sediment to maintain design depth at the berth. The expected volume of sediments is around 40 thousand m³/y.

Mitigation measures:

Dumping of the dredged soil should be concentrated, which significantly reduces the area of damage sustained by the bottom biocenosis.

To mitigate the negative impact, set of measures will be provided, including

- Preparation works (careful selection of dumping area, equipment, compliance with the dumping boundaries and procedure sequence);
- Safety measures (investigation of the bottom and to exclude the presence of explosive and dangerous items; following safety measures; restrictions on works during adverse weather conditions).

- MV Cargo will prepare a dredging management plan and dredging monitoring plan prior to commencement of dredging activities. The plans will adhere to the requirements of Ukrainian legislation and Dredged Materials section of the WBG EHS guidelines for Ports Harbours and Terminals. The plans will also define the implementation of mitigation measures to minimize impacts on water quality. The plans will define seasonal constraints if relevant, with specific reference to fish. Required monitoring and control measures will include plume monitoring and water quality monitoring, beach and banks, as well as navigational safety.
- Compensation measures (environmental tax for pollution of marine environment due to the formation of excess suspension during execution of hydraulic works);
- Complex environmental monitoring and development of measures to minimize the anthropogenic impact.

Solid waste management

Baseline

Not stated in the reviewed EIA.

Key construction impacts

During construction of the Terminal and the berth the following solid wastes will be generated (the amount is calculated for the whole period of construction):

Type of waste	Class of hazard	Volume, t
Waste reinforced concrete structures, metal and steel railings	4	2000
Combined industrial construction waste	4	780
Mixed household waste	4	437.332
Gravel, crushed stone, sand, dolomite flour, aggregates, gypsum cement	4	240
Crushed bricks, wall stones	4	20
Cleaning rags	3	13.98
Used metal containers	4	3.15
Waste and spoiled road emulsions	3	2.4
Sand used to collect oil spillages	3	1.4

Considering the classes of generated wastes and the fact that it is supposed to be transferred for disposal to specialized licensed companies, the wastes from construction will not have negative impact to environment.

Key operational impacts

In the course of operation of the terminal, the following types of waste will be generated:

Type of waste	Volume, t/year	Handling
Cleaning rags	3.92	Disposal by contractor
Waste from storm water treatment facilities	77.12	Transfer to landfill according to contract
Sand used to collect oil spillages	1	Disposal by contractor
Used or spoiled cloths	1.5	Reuse as cleaning rags
Glass containers and broken glass	0.06	Disposal by contractor
Scrap metal	50	Disposal by contractor
Used or spoiled shoes	0.194	Given away to employees
Mercury lamps	0.12	Transfer to specialized licensed company
Communal waste	473.746	Disposal by contractor
Waste office equipment, household appliances	1.6382	Transfer to specialized licensed company

Abrasive metal dust	0.0032	Transfer to specialized licensed company
Substandard remains of grain cargo	60	Disposal by contractor
Waste paper and cardboard paper	0.1	Transfer to specialized licensed company
Substandard cereal grains	10000	Disposal by contractor
Small waste plastic containers	0.1	Disposal by contractor
Waste wooden containers	0.5	Disposal by contractor
Abrasive materials	0.006	Reused as filler during road repair works

The only waste expected from the new Berth is waste from cleaning of the area – 82.426 t per year – which will be removed from the site by specialized contractor.

Mitigation measures

- MV Cargo will prepare and implement a waste management plan (for hazardous and non-hazardous waste) that will among others define:
 - Timely collection and disposal
 - Minimization of waste generation
 - Encouraging recycling of waste where possible
 - Procedures for safe waste removal and disposal
 - Control over waste storage areas to prevent its negative impact to environment and human's health
 - Handing over waste to specialized licensed companies for management and disposal.

Social & Economic

Social baseline

There are no objects of architectural or cultural heritage at the site.

Key construction impacts

The Project is estimated to create up to 350 temporary jobs during construction (around 2 years), to be available mainly for local residents.

Key operational impacts

Operation of the new facilities will not have a negative impact on housing, civilian objects, other structures, and elements of the man-made environment.

The positive impact on social environment is manifested by creation of new jobs, which reduces social tension and unemployment and improves social and welfare conditions of the working personnel.

Mitigation measures

- MV Cargo will prepare and implement a community health and Safety management plan

Traffic & Transport

Baseline

The primary risk to community health and safety identified is associated with traffic safety and dust generated by the transport of construction materials and equipment during construction and by an increased volume of truck and rail traffic during the operations phase. According to the terminal design approximately 140 trucks per day will be uploaded in the busiest months of the year. The road conditions affected by shipment of grain by trucks such as traffic safety, road condition, congestions, and availability of parking space for parking are concerns of the local communities.

Key construction impacts

Construction transport and equipment will be provided by the subcontractors. Both EIA reports include the list of transport, machinery and floating equipment, required for construction of the Grain terminal and the berth. Construction workers will be transported to and from the site by buses. The impact from transport during construction phase will consist of:

- emissions of carbon monoxide, nitrogen oxides, non-methane organic compounds and GHG in the air;
- oil spills to the ground;
- noise and vibration

Key operational impacts

Transportations during the operational phase will be provided by existing public and private transport network: rail carriage – by national railroads and rail facility owned and operated by TIS Group; road carriage – by existing roads.

Mitigation measures

- to install wheel washing point next to Project Site, to prevent the spread of dirt and dust out of the construction site
- Traffic and transport management plan

Community, Health Safety & Security

Key impacts

Risk assessment, conducted within Environmental Impact Assessment of the designed terminal showed that there is no carcinogenic risk of the combined action of carcinogenic air pollutants from operation of the facility. The risk of harmful effects of chronic exposure is extremely small.

Social risks of the proposed activity is defined as the risk for a group of people, which may be affected by the implementation of the object of economic activity, taking into account the peculiarities of natural and man-made systems. The level of social risk is assessed as conditionally acceptable.

There is no residential area in the vicinity of the project, so it is supposed that the facility will not impose any risk to health and security of the community.

Mitigation measures

The staff of the designed facilities must have appropriate qualification, knowledge of process and procedures, arrangement of equipment and safe methods of work. The personnel will be provided with welfare facilities and household premises. The workers, involved in the high-risk jobs, must undergo corresponding annual safety training and examination. The employees who will have harmful working conditions, as well as staff involved to works related to pollution or adverse temperature conditions, will be provided with free special clothing, special footwear, personal protective equipment, and wash-off and neutralizing agents.

7 Communications

The contact person of MV Cargo for the Project and his contact details are:

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