

## Appendix 1 - Plan of mitigation measures

This Appendix to Environmental Management Plan for the Odra-Vistula Flood Management Project - Contract 3B.1 Flood protection Sandomierz, presents measures mitigating negative environmental impacts which constitute guidelines for the Contractor as part of the Contract 3B.1.

No	Issue	Place	Mitigation measures	Responsible entity
<b>01 - RULES CONNECTED WITH PROPERTY ACQUISITION</b>				
1.	<b>Land and landscape protection</b>	All work areas	Area of occupation must be limited to the necessary minimum as well as land surface transformation during the works carried out.	Contractor – Site Manager
2.	<b>Land and landscape protection</b>	All work areas	The stage of construction works must be preceded by preliminary works involving preparing the area for the Task. i.e. preparing the places for storing building materials, for site facilities, etc. and allocating and preparing (and consulting with the road administrators) of traffic routes for machines and vehicles.	Contractor – Site Manager
3.	<b>Land and landscape protection</b>	All work areas	It is necessary to limit as much as possible the area of temporary occupation.	Contractor – Site Manager
<b>02 - MEASURES TO BE PERFORMED PRIOR TO WORKS COMMENCEMENT</b>				
4.	<b>General conditions concerning nature protection</b>	All work areas	Before commencement of the works a survey of permanently and temporarily occupied sites should be carried out, intended for determining of an up-to-date positions of protected plant species and plant species placed on national and regional red lists of endangered species, as well as identification of places of potential presence of these species.	Contractor - phytosociologist/botanist
5.	<b>General conditions concerning nature protection</b>	All work areas	The Contractor (if necessary - in proportion to the results of the conducted survey) shall obtain all necessary permits for deviation from prohibitions in relation to the protected plant species issued by RDOŚ/GDOŚ (in accordance with Article 56, Paragraph 1 and 2 of the Act of 16 April on environmental protection).	Contractor - phytosociologist/botanist

No	Issue	Place	Mitigation measures	Responsible entity
6.	<b>General conditions concerning nature protection</b>	All work areas	Trees and shrubs not intended for felling, growing in the vicinity of the Task implementation area and at risk of being damaged due to vehicle traffic, equipment handling, etc. must be protected against damage, e.g. by covering with wooden planks around the tree trunks up to the minimum height of 1.5 m.	Contractor - phytosociologist/botanist
7.	<b>General conditions concerning nature protection</b>	All work areas	In the event of the necessity to transfer plant species, the Contractor is obliged to first – plan the activities, obtain relevant permits and then effectively carry out those activities, as well as implement other measures indicated in the permit (i.e. preparing reports and submitting them to permitting authorities).	Contractor – Contractor’s environmental team
8.	<b>General conditions concerning nature protection</b>	All work areas	In the event of damage to trees, the necessary maintenance measures to be introduced immediately by the Contractor under the supervision of Contractor’s environmental team to limit effects of the damage.	Contractor - phytosociologist/botanist
9.	<b>Protection of archaeological values</b>	All work areas	Prior to the commencement of works, the Contractor shall enable the qualified person to carry out all necessary archaeological survey in the places of discovered archaeological sites. This will ensure the protection and removal of valuable objects and other elements of historical value from the site and will enable the performance of specific works.	Contractor – Contractor’s archaeological supervision
10.	<b>Human health and safety protection</b>	All work areas	Before commencement of the works involving vibrations, which could cause inconvenience for the neighboring inhabitants or damage to the buildings located near the works areas there should be carried out a survey of existing buildings with particular focus on cracks and damages, and during the aforementioned works the condition of the buildings should be monitored.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
11.	<b>General conditions concerning nature protection</b>	All work areas	The Contractor's environmental team shall include the following experts: phytosociologist/botanist, herpetologist, ornithologist, chiropterologist, entomologist and water protection expert. The Contractor's environmental team will be responsible for the proper implementation of mitigation measures for the environment during construction works. Environmental team experts must be accepted by the Engineer before civil works execution.	Contractor – Contractor's environmental team
12.	<b>Sapper supervision</b>	All work areas	Prior to the commencement of works, the Contractor shall carry out a field inspection on the area of works in terms of the presence of unexploded shells.	Contractor - authorised sapper unit
13.	<b>General conditions concerning nature protection - prevention and elimination of invasive species</b>	All work areas	Prior to commencement of the construction works, the Contractor should carry out a site inspection of construction sites attended by phytosociologist/botanist in order to locate the presence and estimate population of invasive plants (except for Small balsam <i>Impatiens parviflora</i> ). After locating and visibly marking the places where invasive plants grow, the Contractor shall take preventive actions during the implementation of the Contract, which will reduce spreading of these plants, including, among others, removing humus layer along with invasive plants and transporting them from area of works to the composting plant or neutralizing in any other effective manner. It is unacceptable to mix this humus with topsoil overgrown with local native vegetation.	Contractor - phytosociologist/botanist

No	Issue	Place	Mitigation measures	Responsible entity
14.	<b>Rules of procedure for dredging channel beds</b>	Structures: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station, Flood protection within the area of the Struga A watercourse together with an alteration and expansion of the pumping station "Nadbrzezie", Construction of the water pumping station in Szewce, Expansion of the water pumping station in Zajeziarze.	Prior to the construction works in the areas of the planned dredging of channel beds, storage reservoirs and removing sediments from the channels, the Contractor shall carry out control tests and examine sediments and define their quality in accordance with applicable law (pursuant to the Act of 14 December 2012 on waste and relevant executive acts). Such tests shall be implemented by an accredited laboratory.	Contractor – water protection expert
15.	<b>Rules of procedure for dredging channel beds</b>	Structures: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station, Flood protection within the area of the Struga A watercourse together with an alteration and expansion of the pumping station "Nadbrzezie", Construction of the water pumping station in Szewce, Expansion of the water pumping station in Zajeziarze.	It is necessary to examine the quality of the excavated deposits (from channel beds and storage reservoirs). If contaminated sediments are discovered (exceeding values of permissible substance concentrations), they must be removed and handed over to entities holding adequate permissions for their further use. In case of finding slightly contaminated soil it is possible to restore them and hand over to natural person or to organizational units who are not contractors in terms of applicable rules, for further use.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
<b>03 - REQUIREMENTS CONCERNING THE ACCESS ROUTES TO THE CONSTRUCTION SITES</b>				
16.	<b>Human health and safety protection</b>	All work areas	The Contractor shall ensure access routes for rescue teams (ambulance, fire brigade, etc.) for the entire duration of the works, marking out roads, exits, passages for pedestrians and parking for vehicles used on the building site.	Contractor – Site Manager
17.	<b>Human health and safety protection</b>	All work areas	The Contractor will provide traffic arrangement design for the duration of the Works, in accordance with the provisions of Technical Specifications and requirements of Roads Department regarding transport and conditions of roads use.	Contractor – Site Manager
18.	<b>Human health and safety protection</b>	All work areas	It is required to ensure human protection against increased vehicle traffic along roads used during construction works. At the time of works execution, the Contractor shall supply, install and operate all temporary safety devices, ensuring the safety of vehicles and pedestrians.	Contractor – Site Manager
19.	<b>Land and landscape protection</b>	All work areas	The vehicle traffic should take place on the service roads preventing any damage to the near-by vegetation.	Contractor – Site Manager
20.	<b>Land and landscape protection</b>	All work areas	Access to the construction site facility and the work areas must take place along public roads, or if not possible, on reinforced concrete slabs provided for the Task purpose in the terrace area. After completing the works, it is necessary to remove reinforced concrete slabs and reinstate the area. Service roads shall be located outside of nature valuable areas as indicated by the Contractor's environmental team, paying special attention to the nature valuable areas located within the terrace area of the water courses and the SCI Tarnobrzeg Vistula River Valley PLH180049.	Contractor – Site Manager
21.	<b>Land and landscape protection</b>	All work areas	Earthworks which permanently deform the site are not allowed, except for the works executed as part of the Task.	Contractor – Site Manager
22.	<b>Noise protection</b>	All work areas (sections of the embankment where are located existing roads, which will be used by Contractor)	Paved surfaces (e.g. access roads) used for vehicle transport of aggregate should be maintained in good technical condition.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
23.	<b>Protection of tangible assets</b>	All work areas	The Contractor is obliged to provide photographic documentation the entire area of construction works with particular focus on the technical condition of roads and the buildings located in the areas close to roads used for transport of construction materials. Before commencement of the works the Contractor shall carry out, in the presence of road Operator, site visit on the basis of which roads condition protocol shall be drawn up. Based on this document, if necessary the Contractor shall be obliged to reinstate roads technical condition.	Contractor – Site Manager
24.	<b>Human health and safety protection</b>	All work areas	Proper marking of access roads. According to valid and relevant laws and agreements with Operators of the roads the Contractor shall mark the roads used for access routes. These marking shall be regularly controlled, in the case of destruction or theft of marking the Contractor shall promptly replace it or complete it.	Contractor – Site Manager
25.	<b>Protection of tangible assets</b>	All work areas	The Contractor shall be responsible for any damage to the structures, buildings, roads, drainage ditches, culverts, water supply and gas pipe lines, power poles and power lines, cables, land survey control network and any type of services as well as other types of facilities such as vertical and horizontal signs, navigation aids, information boards, cultural assets etc., caused by the Contractor or his Subcontractors during execution of works. The Contractor is also responsible for restoring the flow capacity of drainage ditches and drainage services in the area of conducted works and transport roads, in case of damage caused by execution of works and transport related to works implementation. The Contractor shall immediately repair any damage at his own expense and also, if necessary, shall perform other works ordered by the Engineer.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
26.	<b>Protection of tangible assets</b>	All work areas	The Contractor is obliged to agree with road management authority of the traffic arrangement and works security plan. The Contractor is obliged to organize traffic in accordance with the agreed plans (marking and securing the Site and marking of de-tours and recommended road signage related to change of traffic organization, etc.).	Contractor – Site Manager
27.	<b>Protection of tangible assets</b>	All work areas	During works performance the Contractor makes efforts to minimise the burdens for the vehicle traffic existing in the works area (among others by ensuring access to the properties, passages to the public utility places).	Contractor – Site Manager
28.	<b>Protection of tangible assets</b>	All work areas	Prior to commencement of works the Contractor will present to the Engineer for approval, traffic arrangement and works security plans as well as the Programme agreed with the road management authorities. Depending on the needs and works progress, the traffic arrangement plans shall be updated by the Contractor on on-going basis	Contractor – Site Manager
29.	<b>Protection of tangible assets</b>	All work areas	The Contractor shall respect the statutory limitations of loads per vehicle axle during transport of materials and equipment to and from the construction site. The Contractor shall also obtain any necessary permits from authorities, for transport of non-standard loads and shall constantly inform the Engineer about each case of such a transport.	Contractor – Site Manager
<b>04 - ORGANIZATION OF THE SITE FACILITIES, WAREHOUSES AND STORAGE YARDS</b>				
30.	<b>Land and landscape protection</b>	All work areas	Roads, construction sites and site facilities must be situated in the manner ensuring the protection of trees and shrubs growing beyond the places necessary for occupation for construction works.	Contractor – Site Manager, Contractor's environmental team
31.	<b>Land and landscape protection</b>	All work areas	Order should be maintained on the Site as well as proper works' management.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
32.	<b>General conditions concerning nature protection</b>	All work areas	The temporarily occupied sites (such as: service roads, works construction site facilities, construction material storage places, parking places etc.) must be located outside of the valuable in term of nature areas as indicated by the Contractor's environmental team, including outside of the wet lands and outside of the SCI Tarnobrzeg Vistula River Valley PLH180049 service roads. These places should be supplied with sorbents allowing for quick removal of the effects of possible fuel or oil derivatives leakage.	Contractor – Site Manager, Contractor's environmental team
33.	<b>Human health and safety protection, land area and landscape protection,</b>	All work areas	Temporarily occupied sites (service roads, sites, building site facilities, construction material deposits, parking, etc.) must be situated as far as possible, from areas under acoustic protection and at safe distance from watercourses.	Contractor – Site Manager, Contractor's environmental team
34.	<b>Human health and safety protection, land area and landscape protection,</b>	All work areas	Temporarily occupied sites (service roads, sites, building site facilities, construction material deposits, parking, etc.) should be located and provided in accordance with Contractor's environmental team instructions and approved by the Engineer.	Contractor – Site Manager, Contractor's environmental team
35.	<b>Soil, ground and surface water protection</b>	Structure: Expansion of the water pumping station in Zajeziarze	Rain water from the yard and access roads and places where the power-generating unit is located will be included in a storm water drainage system, equipped with coalescent separator integrated with settling tank, which should discharge the rainwater to the watercourse from Zajeziarze.	Contractor – Site Manager
36.	<b>Soil and surface water protection</b>	All work areas	Sites dedicated for cars and construction machines maintenance such as site facilities must have paved surface and be equipped with sorbents for the duration of works.	Contractor – Site Manager
37.	<b>Soil and surface water protection</b>	All work areas	In the vicinity of sites dedicated for fuelling up and parking vehicles and machines, it is necessary to place a stand with a sorbent for removing possible leakages and spillages of petroleum substances.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
38.	<b>General conditions concerning nature protection</b>	All work areas	Places of storage of construction materials, soil, construction equipment and vehicles parking etc. shall be located, if possible, beyond projection of tree crowns which were not cut down in connection with construction works.	Contractor – Site Manager
39.	<b>Human health and safety protection</b>	All work areas	Materials used during construction works should be stored in the manner securing them against damage and in the manner not posing a risk to the human and property safety, such as falling over, sliding down or falling down of products, devices, machines and other equipment.	Contractor – Site Manager
40.	<b>Human health and safety protection</b>	All work areas	If hazardous substances and materials are stored on the building site, they must be protected appropriately, preventing the access of unauthorized persons, and information on a hazard must be provided on warning boards.	Contractor – Site Manager
41.	<b>General manner of waste management</b>	All work areas	Waste management must be carried out in accordance with the Act of 14 December 2012 on waste. It is required to follow a rule of minimizing the amount of the waste generated. Waste generated during the Task implementation must be segregated and collected in containers or dedicated places, ensuring protection against the leakage of hazardous substances and it is necessary to ensure successive collection of waste by authorized entities.	Contractor – Site Manager
42.	<b>Hazardous waste</b>	All work areas	Hazardous waste to be collected only by authorized entities. Until the waste is collected by authorized entities it must be stored in a way which prevents penetration of the hazardous substance to the environment, i.e. in sealed containers, in roofed areas, on paved surface, protected from unauthorized access.	Contractor – Site Manager
43.	<b>Hazardous waste</b>	All work areas	Hazardous waste storage sites must be allocated beyond flood waters area. (Q1% - so called hundred years water).	Contractor – Site Manager

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44.	<b>Handling of household sewage</b>	All work areas	It is necessary to equip all construction sites with a required number of portable toilets and provide training to all the employees with regard to maintaining appropriate hygienic conditions within the area of the construction site and its direct surrounding. The Contractor's staff should only use toilets in designated places.	Contractor – Site Manager
45.	<b>Handling of household sewage</b>	All work areas	Household sewage from the construction site facility must be collected in sealed tanks and disposed by specialized companies holding relevant permit to the nearest sewage treatment plant (catchment areas).	Contractor – Site Manager
<b>05 - REQUIREMENTS FOR CUTTING OUT TREES AND SHRUBS</b>				
46.	<b>General conditions concerning nature protection</b>	All work areas	On the planned tree felling sites related to the rebuilding and construction of embankments, it is necessary to assess if there are not any protected beetle species. If trees inhabited by protected beetle species are found, it is necessary to secure the species and/or such beetles must be relocated to a different habitat of similar conditions. The works must be carried out under the supervision of an entomologist.	Contractor - entomologist
47.	<b>General conditions concerning nature protection</b>	All work areas	In order to reduce losses in the species of protected bats which may live in tree hollows, the felling of trees of circumference exceeding 100 cm ought to be preceded with a chiropterologist inspection for the purpose of assessing the actual presence of bats in the vicinity of respective types of trees. Tree felling must be carried out under the supervision of a chiropterologist.	Contractor - chiropterologist

No	Issue	Place	Mitigation measures	Responsible entity
48.	<b>General conditions concerning nature protection</b>	Structure: Expansion of the surrounding embankment protecting Glass Factory and a Housing Property against the flood waters in the town of Sandomierz together with an extension of the embankment of the Vistula River from the Lwowska Street to intersection of Koćmierzów embankment Protection the embankments of Koprzywnianka River – left embankment at km 0+000 ÷ 12+900, right embankment at km 0+000 ÷ 14+400 Construction of the water pumping station in Szewce Expansion of the water pumping station in Zajeziorze	Felling of trees and shrubs shall be limited to the scope necessary for the implementation of the Task and performed outside of the vegetation season and birds breeding season (within the period from 16th October to the end of February).	Contractor - ornithologist
49.	<b>General conditions concerning nature protection</b>	Structures: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station Flood protection within the area of the Struga A watercourse together with an alteration and expansion of the pumping station "Nadbrzezie"	Trees and shrubs felling, within the scope necessary for the Task implementation, must be carried out beyond the bird breeding season (from 16 October to the end of February). Felling the trees and shrubs can take place on different dates only if bird breeding habitats and protected animal species are not affected, which must be acknowledged in the field inspection carried out by the Contractor's environmental team.	Contractor – ornithologist, chiropterologist, entomologist
<b>06 - REQUIREMENTS AT THE STAGE OF WORKS IMPLEMENTATION</b>				
50.	<b>Land and landscape protection</b>	All work areas	Vehicle traffic should take place along service roads, preventing any damage to the near-by vegetation. It is necessary to minimize the use of heavy duty machines and equipment.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
51.	<b>Land and landscape protection</b>	Structure: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400	It is necessary to limit works in the inter-embankment zone only to required construction works (extension of the embankment, unpaved lane along the embankment, building other embankment structures).	Contractor – Site Manager
52.	<b>Land and landscape protection</b>	All work areas	Machines and vehicles should use service roads and vehicle circulation areas only. Machines, if possible, should move along the same routes.	Contractor – Site Manager
53.	<b>Soil, surface water and air protection</b>	All work areas	Construction equipment must be in working order which satisfies all legal conditions authorizing it for putting such equipment into service.	Contractor – Site Manager
54.	<b>Soil, surface water, groundwater and air protection</b>	All work areas	The type and working order of such equipment must ensure the protection of soil, surface water and groundwater against pollution, dust and gas emission to the air and noise emission. The Contractor should maintain the equipment, vehicles and plant and use all available resources to eliminate possible pollution of soil and water environment, in particular occurrence of spills of fuel, hydraulic oil and oil-derived substance during handling, fuelling, transport and operation of machines, equipment and vehicles.	Contractor – Site Manager
55.	<b>Soil and surface water protection</b>	All work areas	It is prohibited to repair equipment and machines or exchange oil within the Vistula River inter-embankment zone and the Koprzywianka River, or in the vicinity of areas of natural values, indicated by the Contractor's environmental team.	Contractor – Contractor's environmental team
56.	<b>Soil and surface water protection</b>	All work areas	It is prohibited to fuel up and store fuel within the Vistula River inter-embankment zone and the Koprzywianka River, or in the vicinity of areas of natural value, indicated by the Contractor's environmental team. All repairs must be conducted beyond the direct building site in a dedicated place.	Contractor – Contractor's environmental team

No	Issue	Place	Mitigation measures	Responsible entity
57.	<b>Soil and surface water protection, general handling of waste</b>	All work areas	It is not allowed to store on the building site of any waste connected with repairs and maintenance of equipment, machines and devices used for construction works. Any repairs of machines and servicing must be carried out by specialized companies or persons authorized to perform these works by the manufacturer (authorized service). Waste generated during these works (i.e. damaged parts, seals, filters, containers after lubricants and fluids, used oils, fluids, etc.) must be collected by contractors of repairs and services and they cannot be stored on the building site. They must be managed in compliance with applicable law.	Contractor – Site Manager
58.	<b>Air protection</b>	All work areas	It is necessary to apply required organizational and technical measures in order to maintain clean access routes.	Contractor – Site Manager
59.	<b>Air protection</b>	All work areas	It is necessary to apply required organizational and technical measures in order to limit dust emission at the time of transporting and storing of construction materials. Special attention shall be paid to effective limiting the dusting in case of performing works close to fruit orchards. (Structure: Protection the embankments of Koprzywianka River – left embankment at km 0+000 ÷ 12+900, right embankment at km 0+000 ÷ 14+400)	Contractor – Site Manager
60.	<b>Air protection</b>	All work areas	It is necessary to apply required organizational and technical measures in order to limit dust emission during construction works. Special attention shall be paid to effective limiting the dusting in case of performing works close to fruit orchards. (Structure: Protection the embankments of Koprzywianka River – left embankment at km 0+000 ÷ 12+900, right embankment at km 0+000 ÷ 14+400)	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
61.	<b>Air protection</b>	All work areas	Sand and aggregates to be used during construction works shall be secured against their blowing or excessive dusting from their surface both during transport and storage, as well as during construction works. Special attention shall be paid to effective limiting the dusting in case of performing works close to fruit orchards. (Structure: Protection the embankments of Koprzywianka River – left embankment at km 0+000 ÷ 12+900, right embankment at km 0+000 ÷ 14+400)	Contractor – Site Manager
62.	<b>Air protection (Protection against dusting)</b>	All work areas	Limit dust generated by the means of transport by: <ul style="list-style-type: none"> <li>• cleaning vehicle wheels before entering the public roads,</li> <li>• cleaning service roads surface,</li> <li>• using vehicles with tilts for transport of dusty materials or transport of packed powdery materials,</li> <li>• other activities preventing mud and dirt dispersion on local roads by vehicles,</li> <li>• sprinkling of surfaces of internal service roads.</li> </ul> Special attention shall be paid to effective limiting the dusting in case of performing works close to fruit orchards. (Structure: Protection the embankments of Koprzywianka River – left embankment at km 0+000 ÷ 12+900, right embankment at km 0+000 ÷ 14+400)	Contractor – Site Manager
63.	<b>Air protection</b>	All work areas	It is necessary to reduce the work time of powered machines and vehicles.	Contractor – Site Manager
64.	<b>Human health and safety protection</b>	All work areas	It is necessary to reduce speed limit of vehicles in the vicinity of the building areas.	Contractor – Site Manager

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65.	<b>Human health and safety protection</b>	Structures: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400, Expansion of the surrounding embankment protecting Glassworks and a Housing Estate against the flood waters in the town of Sandomierz together with an extension of the embankment of the Vistula River from the Lwowska Street to intersection of Koćmierzów embankment	Work of machines, devices and other equipment within the embankment must be carried out in a way that does not endanger the safety of persons and property, excluding their overturning, sliding or descent into the slope of the embankment.	Contractor – Site Manager
66.	<b>Air protection</b>	All work areas	It is necessary to adhere to the rule of switching off machines and appliances during breaks at work.	Contractor – Site Manager
67.	<b>Soil and ground protection</b>	All work areas	The Contractor should choose a place for storing humus which will secure it against pollution, being driven through and being tamped down.	Contractor – Site Manager
68.	<b>Soil and ground protection</b>	All work areas	Humus should be stored and protected in a way enabling its re-use.	Contractor – Site Manager
69.	<b>Soil and ground protection</b>	All work areas	Equipment, plant and vehicles used for construction works must be placed in dedicated parking spaces provided with protective measures against spillage of oil derivatives to the soil and water environment. If the equipment, plant and vehicles are not in use, they must be parked in these dedicated places.	Contractor – Site Manager
70.	<b>Soil and ground protection</b>	All work areas	Only vehicles, plant and equipment related to execution of works on the Task can be placed on Site and within site facilities.	Contractor – Site Manager
71.	<b>Land and landscape protection</b>	All work areas	Earthworks must be limited to a necessary minimum.	Contractor – Site Manager
72.	<b>Land and landscape protection</b>	All work areas	Grease and fuel to be stored at adequately prepared place with relevant sealing degree and equipped with sorbent to neutralize petroleum substance.	Contractor – Site Manager

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73.	<b>Land and surface water protection</b>	All work areas	The Task shall be implemented in a manner excluding penetration of any pollution, especially petroleum-based to the land and water. In the event of spillage of oil derivative substances, it must be promptly removed and contaminated soil layers must be immediately eliminated (by a specialized company) and managed in accordance with applicable law. Such places must be brought back to their initial condition.	Contractor – Site Manager
74.	<b>Land and surface water protection</b>	All work areas	For works performance, it is necessary to use only non-hazardous materials which are not burdensome to the environment.	Contractor – Site Manager
75.	<b>Land and landscape protection</b>	All work areas	It is forbidden to deposit soil in: cavities, old river beds, swampy areas and other areas of a natural value within the entire Task implementation area.	Contractor – Site Manager, Contractor's environmental team
76.	<b>Land and landscape protection</b>	All work areas	The manner of soil management must not change the water levels with detriment to the neighbouring soil.	Contractor – Site Manager
77.	<b>Land and landscape protection</b>	Structures: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400, Expansion of the surrounding embankment protecting Glassworks and a Housing Estate against the flood waters in the town of Sandomierz together with an extension of the embankment of the Vistula River from the Lwowska Street to intersection of Koćmierzów embankment	It is required to use uncontaminated soil from concession purchases for elevating the embankments, which satisfy the requirements of the regulation on soil quality standards and earth quality standards.	Contractor – Site Manager
78.	<b>Land and landscape protection</b>	Structure: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400	It is forbidden to gather soil intended for embankment formation, sowing and reclamation of land for the building site on swampy areas and within Natura 2000 site.	Contractor – Site Manager, Contractor's environmental team
79.	<b>Land and landscape protection</b>	All work areas	In the event of oil derivative substance spillage to surface water, the Contractor is obliged to ensure mechanical collection of the substance from the water surface.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
80.	<b>Groundwater protection</b>	All work areas	It is forbidden to deposit soil in areas of a natural value, indicated by the Contractor's environmental team.	Contractor – Site Manager, Contractor's environmental team
81.	<b>Land and landscape protection</b>	Structure: Construction of the water pumping station in Szewce	Soil formed during works must be managed for the needs of raising site levels and reconstructing the section of the embankment demolished.	Contractor – Site Manager
82.	<b>Noise protection</b>	All work areas	Construction works in the area and immediate vicinity of areas under acoustic protection must be carried out only during the day (from 6 a.m. to 10 p.m.). It is allowed to conduct works at night only in the event of a flood risk.	Contractor – Site Manager
83.	<b>Noise protection</b>	All work areas	It is necessary to use the technologies of construction works which are least burdensome in terms of acoustics, maintain good work management, correct equipment operation and ensuring correct technical order.	Contractor – Site Manager
84.	<b>Noise protection</b>	All work areas	It is necessary to locate parking sites for machines as far as possible from the areas under noise protection and at the same time as close as possible to the area of works.	Contractor – Site Manager
85.	<b>Noise protection</b>	All work areas	In the areas under acoustic protection and the working sites adjacent to these areas, in order to mitigate the nuisance for inhabitants and environment, it is allowed to use only soundproofed pumping engines.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
86.	<b>General conditions concerning nature protection</b>	All work areas	Works to be carried out in a way which will avoid animal mortality. All the excavations must be protected against animal access and regularly controlled in the period of conducting works. In addition, according to the recommendations of herpetologist, if necessary, it is recommended to protect the migration routes of amphibians to water (e.g. through making appropriate fencing), in order to limit a death rate among amphibians related to vehicle traffic. It is also necessary to protect all hollows formed in the location of works and within the building sites which are filled with water against amphibian access and breeding in this area – works must be carried out according to the recommendations of a herpetologist. If animals get to the construction site, it is necessary to ensure their safe relocation to substitute habitats.	Contractor - herpetologist
87.	<b>General conditions concerning nature protection</b>	All work areas	During construction works it is not allowed to destroy plants outside the Contract area.	Contractor – phytosociologist / botanist
88.	<b>General conditions concerning nature protection</b>	All work areas	The Contractor should provide the schedule for execution of works so that the dates and location of respective stages of construction works are in compliance with requirements of environmental decisions and EMP and so that they do not affect species under protection which are found on the Task implementation area and in its vicinity.	Contractor – Site Manager, Contractor's environmental team
89.	<b>General conditions concerning nature protection</b>	All work areas	No substance which could be lethal to animals can be used for execution of works.	Contractor – Site Manager
90.	<b>General conditions concerning nature protection</b>	Structure: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station.	It is necessary to secure an excavation for a reservoir against access and entrapment of small animals.	Contractor - herpetologist

No	Issue	Place	Mitigation measures	Responsible entity
91.	<b>General conditions concerning nature protection</b>	Structure: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station.	Due to animal species protection, it is recommended to carry out construction works on these sides of Struga A watercourse which enables leaving maximal area of intact tree stands as well as execute construction works in the periods of low water level. Felling of trees must be limited to the necessary minimum.	Contractor - ornithologist
92.	<b>General conditions concerning nature protection</b>	Structures: Construction of the water pumping station in Szewce, Expansion of the water pumping station in Zajeziarze.	Works within the Koprzywianka River bed must be performed best in the period from July to August. It is forbidden to conduct works in the fish spawning period (i.a. rainbow trout and grayling) which starts in September and ends in April.	Contractor - water protection expert
93.	<b>General conditions concerning nature protection</b>	Structures: Expansion of the water pumping station in Zajeziarze Construction of the water pumping station in Szewce,	Protective fences shall be provided to secure the construction site from the intrusion of animals.	Contractor - herpetologist
94.	<b>General conditions concerning nature protection</b>	Structure: Expansion of the surrounding embankment protecting Glassworks and a Housing Estate against the flood waters in the town of Sandomierz together with an extension of the embankment of the Vistula River from the Lwowska Street to intersection of Koćmierzów embankment	The works within the port channel's bed shall be conducted outside of the fish sprawling season (outside of the following month May-June), which shall minimize the negative impact on fish species.	Contractor - water protection expert
95.	<b>General conditions concerning nature protection</b>	Structure: Expansion of the surrounding embankment protecting Glassworks and a Housing Estate against the flood waters in the town of Sandomierz together with an extension of the embankment of the Vistula River from the Lwowska Street to intersection of Koćmierzów embankment.	Before performing a port gate, a cofferdam separating the canal from the Vistula River shall be placed.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
96.	<b>General conditions concerning nature protection</b>	All work areas	The Contractor will obtain required permits for deviations from prohibitions in relation to protected species of animals, plants and fungi, issued by RDOŚ/GDOŚ (pursuant to Article 56.1 and 2 of the Environmental Protection Act of 16 April) - if this will be necessary according to the findings of the Contractor's environmental team).	Contractor – Contractor's environmental team
97.	<b>General conditions concerning nature protection</b>	Structures: Flood protection within the area of the Struga A watercourse together with an alteration and expansion of the pumping station "Nadbrzezie", Expansion of the surrounding embankment protecting Glassworks and a Housing Estate against the flood waters in the town of Sandomierz together with an extension of the embankment of the Vistula River from the Lwowska Street to intersection of Koćmierzów embankment, Construction of the water pumping station in Szewce, Expansion of the water pumping station in Zajeziorze.	Before commencement of earthworks related to the Task implementation, it is required to remove a layer of humus from temporarily and permanently occupied sites. The period provided for works is planned from 15 August to 15 October. When it is necessary to implement these works in other time, the planned date should be agreed on with an expert herpetologist.	Contractor - herpetologist
98.	<b>General conditions concerning nature protection</b>	Structure: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station. Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400	Before commencing earthworks connected with the Task implementation, it is necessary to remove a layer of humus from permanent and temporary occupation areas. Works must be carried out from 15 August to 31 October. A humus layer taken from the reservoir must be stored separately from other soil layers and planted at the stage of site reinstatement. If it is necessary to perform works within inter-embankment zone of the Koprzywianka River, in other period, it is necessary to consult herpetologist.	Contractor - herpetologist

No	Issue	Place	Mitigation measures	Responsible entity
99.	<b>General conditions concerning nature protection</b>	Structure: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station,	It is necessary to build a canal in the inter-embankment zone, a bypass channel and slope of the Atramentówka watercourse and expansion tank in the manner enabling animal migration (e.g. it is necessary to consider appropriate slope falls and materials covering slopes).	Contractor - herpetologist
100.	<b>General conditions concerning nature protection</b>	Structure: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400.	In the closest vicinity to Natura 2000 Tarnobrzeg Vistula River Valley PLH PLH180049, it is necessary to reduce a scope of work which can theoretically affect the site.	Contractor – Site Manager, Contractor's environmental team
101.	<b>General conditions concerning nature protection</b>	Structure: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400.	It is forbidden to remove humus during heavy rainfalls and directly after the rain.	Contractor – Site Manager
102.	<b>General conditions concerning nature protection</b>	Structure: Protection the embankments of Koprzywianka River – left embankment in km 0+000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400	Earthworks in the Koprzywianka River inter-embankment zone should be limited to a necessary minimum, all trees and shrubs which do not collide directly with the area of works should be left intact.	Contractor – Site Manager
103.	<b>General conditions concerning nature protection</b>	Structures: Flood protection within the area of the Struga A watercourse together with an alteration and expansion of the pumping station "Nadbrzezie"	Works within the areas of a natural values, due to occurrence of species of amphibians (indicated by the Contractor's environmental team), should be conducted outside the period of March and April. This period may be prolonged if a herpetologist determined ongoing amphibians breeding.	Contractor – herpetologist
104.	<b>General conditions concerning nature protection</b>	Structure: Protection the embankments of Koprzywianka River – left embankment in km 0+ 000 ÷ 12+900, right embankment in km 0+000 ÷ 14+400.	Works on swampy areas will be carried out beyond the amphibian breeding season, i.e. beyond the period from March to April. This period may be prolonged if a herpetologist determined ongoing amphibians breeding.	Contractor – herpetologist

No	Issue	Place	Mitigation measures	Responsible entity
105.	<b>General conditions concerning nature protection</b>	Structures: Flood protection within the mouth section of the Atramentówka River, construction of a new pumping station "Koćmierzów" and of a gravity-type dam lock in Koćmierzów (in the right embankment of the Vistula River) and of a channel draining water from the Atramentówka River to the pumping station	A relief channel, a canal in the inter-embankment zone and the banks of the levelling tank and the Atramentówka river should be all done in a way enabling migration of animals (appropriate slope of banks, appropriate selection of covering materials).	Contractor – herpetologist
106.	<b>General conditions concerning nature protection</b>	All work areas	Where areas of the implementation of respective structures are adjacent, it is necessary to ensure correct work organisation in order to limit the accumulation of negative environmental factors.	Contractor – Site Manager
107.	<b>Limitation of impacts on the protected areas and facilities</b>	All work areas	During the construction works, the Contractor shall comply with standards, prohibitions and recommendations as well as respect limitations arising from the existence of areas and facilities formed under the Act of 16 April 2004 on environmental protection.	Contractor – Contractor’s environmental team
108.	<b>General findings concerning cultural heritage and monuments protection</b>	All work areas	If during construction works or earthworks the Contractor discovers an object likely to be a historical object, he/she is obliged to suspend all the works which could damage or destroy discovered object; furthermore, such a person is obliged to secure the object with available protective measures as well as a discovery site; in addition, this person is obliged to notify the Provincial Conservator of Historical Monuments, and if not possible, the Mayor of Sandomierz. The Contractor shall also inform the Engineer about the case.	Contractor – Site Manager, Contractor’s archaeological supervision
109.	<b>General findings concerning cultural heritage and monuments protection</b>	All work areas	For the purpose of implementing the above EMP conditions related to the protection of cultural landscape and monuments, the Contractor will also obtain the permit issued by the Provincial Conservator of Historical Monuments (PCHM) for the performance of archaeological rescue survey.	Contractor – Contractor’s archaeological supervision

No	Issue	Place	Mitigation measures	Responsible entity
110.	<b>Human health and safety protection</b>	All work areas	The Contractor is responsible for health and safety of people, including fire protection - development of SHPP, obtaining acceptance of the Engineer for implementation of SHPP, which will remain in force until construction works completion. Requirements with regard to fire protection included in SHPP should include also prohibition on bonfires and combustion of flammable materials within the construction site.	Contractor – Site Manager
111.	<b>Human health and safety protection</b>	All work areas	The Contractor shall ensure the preparation, implementation after the approval by the Engineer of Building site organization design.	Contractor – Site Manager
112.	<b>Human health and safety protection</b>	All work areas	The Contractor shall ensure the preparation, implementation after the approval by the Engineer of Quality assurance plan.	Contractor – Site Manager
113.	<b>Human health and safety protection</b>	All work areas	The Contractor shall ensure the preparation, implementation after the approval by the Engineer of The construction site's flood management plan for the time of the works.	Contractor – Site Manager
114.	<b>Human health and safety protection</b>	All work areas	Allocating dangerous zones which pose a risk to human health and life, and marking, with their use, warning boards, securing against unauthorized access.	Contractor – Site Manager
115.	<b>Human health and safety protection</b>	All work areas	Ensuring health and safety in terms of organization - the Contractor shall ensure and maintain the safety of the works conducted.	Contractor – Site Manager
116.	<b>Human health and safety protection</b>	All work areas	Ensuring health and safety in terms of organization - the Contractor shall assign the construction area, as far as possible from the residential development areas in order to eliminate excessive noise and vibration emission at the time of the Task implementation.	Contractor – Site Manager
117.	<b>Human health and safety protection</b>	All work areas	The Contractor shall secure and provide marking in the building site.	Contractor – Site Manager
118.	<b>Human health and safety protection</b>	All work areas	The Contractor shall mark traffic routes of the building site.	Contractor – Site Manager
119.	<b>Human health and safety protection</b>	All work areas	The Contractor shall prepare a traffic plan (evacuation plan) for the construction site and site in emergency (fire, accident, technical failure, etc.), which will be approved by the Engineer prior to the commencement of works.	Contractor – Site Manager

No	Issue	Place	Mitigation measures	Responsible entity
120.	<b>Human health and safety protection</b>	All work areas	Protection health and safety in relation to applied technical measures by the use of efficient machines and tools subject to periodic service in accordance with the manufacturer's requirements.	Contractor – Site Manager
121.	<b>Human health and safety protection</b>	All work areas	The Contractor is responsible for protection of health and safety in relation to applied technical measures by the use of machines and tools according to their intended use.	Contractor – Site Manager
122.	<b>Human health and safety protection</b>	All work areas	Machine maintenance and fuelling up must be carried out in separate place. These types of work must be carried out carefully in dedicated paved surfaces with adequate sorbents.	Contractor – Site Manager
123.	<b>Human health and safety protection</b>	All work areas	It is required to ensure ongoing monitoring of a technical condition of machines, correct performance of works and strict adherence to the OH&S regulations in order to eliminate an increased noise level within the works zone and in its immediate vicinity.	Contractor – Site Manager
124.	<b>Human health and safety protection</b>	All work areas	The Contractor shall ensure constant visibility conditions during the day and at night of such structures and signs which are obligatory for safety reasons.	Contractor – Site Manager
125.	<b>Human health and safety protection</b>	All work areas	The Contractor is responsible for the training (including test on completion) of his management and engineering staff supervising the works, regarding terms and conditions of EMP as well as protection during construction works, prepared with an aid of the Contractor's environmental team. The Contractor's personnel who will have to deal with fuel and diesel oil should be immediately trained on the principles of protection of soil and water, as well as the application of sorbents.	Contractor – Site Manager, Contractor's environmental team

No	Issue	Place	Mitigation measures	Responsible entity
126.	<b>Human health and safety protection</b>	All work areas	(Clause 6.7 of the General Contract Conditions) HIV-AIDS prevention. The Contractor shall implement training and programme of raising awareness of spreading HIV-AIDS through an approved service provider and shall take all other measures outlined in the Agreement (General Conditions, Clause 6.7) in order to reduce a risk of HIV transfer among the Contractor's personnel and local population and it shall promote early diagnostics and support for infected people. Such actions shall be conducted during the whole term of the Contract (including Defects Notification Period) at least every second month. These shall be information, educational and awareness campaigns concerning the threats in the scope of spreading HIV-AIDS.	Contractor – Site Manager
127.	<b>Developing Waste Management Plan</b>	All work areas	Within 42 days of the date of commencing works, the Contractor shall prepare and submit for the Engineer's approval Waste Management Programme, specifying management method for waste generated during works, considering, among others, guidelines within waste management contained in EMP.	Contractor – Site Manager
128.	<b>Contractor's environmental team</b>	All work areas	The Contractor's environmental team must be present throughout the whole construction works period.	Contractor – Contractor's environmental team
129.	<b>Tasks of the environmental team within the Task implementation period</b>	All work areas	The Contractor's environmental team provides the observations of the area of construction works prior to works their implementation and during such works.	Contractor – Contractor's environmental team

No	Issue	Place	Mitigation measures	Responsible entity
130.	<b>Tasks of the Contractor's environmental team within the Task implementation period</b>	All work areas	The Contractor's environmental team responsibilities include: <ul style="list-style-type: none"> <li>inspection of area covered by construction works prior to their commencement and inspections during construction along with preparing relevant reports, constituting documentation of proper performance of environmental team and at the same time informing about due implementation of mitigation measures,</li> <li>formulating and reporting to the Engineer requests with regard to the need actions (along with their execution) necessary to alleviate unfavourable effects of Task on natural habitats and species being the object of interest of the Community and subject to national legal protection (species protection) that were unforeseeable and/or impossible to disclose at the stage of agreeing on implementation terms of the concerned Task under the procedure aimed at issuance of the decision on environmental conditions, the activities may be implemented only after the Engineer's acceptance.</li> </ul>	Contractor – Contractor's environmental team
131.	<b>Tasks of the Contractor's environmental team within the Task implementation period</b>	All work areas	The Contractor's environmental team prepares required materials and motions for obtaining permission for deviation from the prohibitions connected with protected species of plants, fungi and animals under conditions and procedure specified in the Environmental Protection Act of 16 April 2004.	Contractor – Contractor's environmental team
132.	<b>Tasks of the Contractor's environmental team within the Task implementation period</b>	All work areas	The Contractor's environmental team submits to the Engineer periodical reports (monthly, quarterly, final), which must be approved by the Engineer.	Contractor – Contractor's environmental team
133.	<b>Sapper supervision</b>	All work areas	In the event of discovering unexploded shells the Contractor shall immediately stop the works and evacuate workers as well as notify the police and a licensed sapper unit.	Contractor – Site Manager, Contractor's sapper supervision

No	Issue	Place	Mitigation measures	Responsible entity
134.	<b>Sapper supervision</b>	All work areas	The Contractor shall ensure sapper supervision throughout the performance of earthworks, which will consist in on-going inspection and clearance of the terrain from hazardous objects of a military origin and their disposal.	Contractor – Site Manager, Contractor's sapper supervision
135.	<b>Protection of archaeological values</b>	All work areas	During the works, continuous archaeological supervision will be ensured.	Contractor – Site Manager, Contractor's archaeological supervision
136.	<b>Human health and safety protection</b>	All work areas	Contractor's OH&S supervision shall be responsible for adequate marking of building site according to applicable laws. This marking shall be regularly controlled, in the case of destruction or theft of marking the Contractor shall promptly replace it or supplement it.	Contractor – Site Manager
137.	<b>Environment, human health and safety protection</b>	All work areas	The Contractor and Contractor's environment team is responsible for training of the rules and conditions of the EMP for Contractor's management and engineering-technical personnel.	Contractor – Site Manager, Contractor's environmental team
138.	<b>Periodic meetings on implementation of mitigation and monitoring measures</b>	All work areas	During the implementation of the tasks arising from the EMP will take place monthly team meetings PIO, Engineer and Contractor to discuss and monitor the implementation of mitigation and monitoring measures.	PIO, Engineer and Contractor
<b>07 - REQUIREMENTS AFTER COMPLETION OF WORKS</b>				
139.	<b>Land and landscape protection</b>	All work areas	Places sowed with grass mix should be taken care of by means of mowing of flood embankments twice a year (in June and September) and removal of hard lichens. This activity includes also the Defects Notification Period.	Contractor – Site Manager
140.	<b>Land and landscape protection</b>	All work areas	Upon completing construction works, it is necessary to restore temporary occupation sites to their previous condition (original use). Humus shall be planted from the places where it had been removed and then sown with a mix of local grass species; the composition of the mix shall be agreed with the expert phytosociologist/botanist. After the completion of works the site shall be cleared and left in the condition as similar as possible to the original one.	Contractor – phytosociologist/botanist

