Public

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Environmental and Social Completion Sheet (ESCS)

Overview

Project Name:	AQUAFIN WASTE WATER TREATMENT X
Project Number:	2016-0398
Country:	Belgium
Project Description:	Construction of collector sewers, storm overflows and small and medium-size wastewater treatment plants, plus upgrading of existing wastewater treatment plants for tertiary treatment in the Flemish Region

Summary of Environmental and Social Assessment at Completion

EIB notes the following key Environmental and Social outcomes at Project Completion.

The main objective of the Programme was to increase the sewer connection rate in the service area of Aquafin, and to reduce the risks of sewer overflows and improve storm water management. The Programme also targeted compliance with EU Water Framework Directive 200/60/EC, Urban Wastewater Treatment Directive 91/271/EC), and relevant national legislation.

The Programme was environmentally driven and therefore had predominantly positive effects on the environment. It contributed to reducing aquifer pollution by increasing the sewer connection rate in the Flemish Region, and by repairing broken sewers and to lower the probability of traffic disruptions and subsidence of buildings by avoiding the collapse of sewer segments.

The Promoter confirmed in its Project Completion Report that it has complied with the requirements of EU EIA Directive 2011/92/EU, and obtained the required declarations of the Competent Authority under Article 6(3) of the Habitats Directive 92/43/EEC.

The Promoter carried out Environmental Impact Assessment (EIA) procedures where required by the competent authorities. More specifically, an EIA was required and carried out for 22 components. For each of these components, the annex to this ESCS provides an outline of the main environmental risks and the risk mitigation measures taken.

According to the Promoter's monitoring reports, there have been a small number of minor incidents related to compliance with EU regulations (e.g. exceeding of the noise standard, and exceeding the permitted amount of groundwater pumped up). These incidents had however no material impact on the environment and remediation actions were taken.

Summary opinion of Environmental and Social aspects at completion:

EIB is of the opinion based on reports from the promoter during construction that the Project has been implemented in line with EIB Environmental and Social Standards, applicable at the time of appraisal.

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Environmental Risks and mitigation measures – Projects EIB X

1. 21.939 RWZI Zwalm – Sint-Denijs-Boekel (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Rainwater will be removed in accordance with an approved drainage plan that was specially prepared for this component
Soil risk	Replace red gravel by grass troughs to speed up infiltration of rainwater and enable nature-friendly maintenance (no use of pesticides),
Biodiversity risk	Refrain from use of pesticides during maintenance Use low-noise machines during construction Monitor dewatering and mitigate by irrigation Minimize noisy construction activities during the breeding season
Noise pollution risk	Use low-noise machines during construction
Odor nuisance risk	Cover machine parts, extract and treat air
Anthropogenic risk	Re-route traffic and provide warnings to minimize adverse impacts on nature

2. 21.190 KWZI Grammene – Deinze (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality
Soil risk	Sheeting the construction pit of the sedimentation tank to reduce impact on groundwater level. Prevent drainage of the runway moat by the drainage Basins are made watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system
Biodiversity risk	Green zone with regional planting around the installation
Noise pollution risk	Use motors with limited power Use bubble aeration Limited overflow heights
Odor nuisance risk	Use of low-load activated sludge system with bubble aeration
Anthropogenic risk	See noise and odor measures Apply less nuisance program during constructions

3. 20.629 RWZI Ingelmunster – Ingelmunster (EIA Annex II)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of additional pollution load to reduce overflow.
Soil risk	Determine arsenic concentration in groundwater to choose discharge options Basins are made watertight Storage of chemicals is done in accordance with Vlarem
Biodiversity risk	Adjust the drainage so the water level in the spawning area is not affected
Noise pollution risk	Blowers set indoor Additional augers are positioned partly underground and are partly covered
Odor nuisance risk	2nd stage influent augers and recirculation augers are covered Aeration basin is covered at point aerators

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Anthropogenic risk	Apply less nuisance program during constructions

4. 20.944A KWZI Ingooigem – Anzegem (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality Buffering rainwater
Soil risk	Sheeting the construction pit of the sedimentation tank to reduce impact on groundwater level. Basins are made watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system
Biodiversity risk	Green zone with regional planting around the installation Compact arrangement of infrastructure with limited building height
Noise pollution risk	Set up the drainage equipment by the contractor that nuisance to local residents is limited Blowers have a soundproof housing Pumps, propulsion and mixers are installed submerged
Odor nuisance risk	Use of low-load activated sludge system with bubble aeration
Anthropogenic risk	See noise and odor measures

5. 20.668 KWZI Westrozebeke – Staden (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality Buffering and infiltration of rainwater
Soil risk	Basins are made watertight Limited storage of chemicals Roads on which spills can occur are connected to the site sewerage system
Biodiversity risk	Green zone with regional planting around the installation Compact arrangement of infrastructure with limited building height
Noise pollution risk	Set up the drainage equipment by the contractor that nuisance to local residents is limited Blowers and piping have a soundproof housing Pumps are installed submerged and the outflow is covered
Odor nuisance risk	Use of low-load activated sludge system Covering and air treatment in biofilter of influent pumping station, overflow, grid, selector, recirculation pumping station, sludge thickener and sludge buffer
Anthropogenic risk	See noise and odor measures

6. 22.251 Verbindingsriolering Eikveldstraat (EIA Annex II)

Environmental Risk	Risk Mitigation Measure
Surface water risk	The disconnecting of rainwater from the sewage infrastructure and the construction of storage basins for rainwater lead to a better performance of the water treatment plants and reduces the frequency of sewage overflow. Drainage water must be discharged over an iron plate. No soil stacking within flood prone areas.

Soil risk	Drainage works must locally be reduced in time and depth, for example by reducing the length of the drainage strips. While drainage is usually carried out to a depth of 50 cm beneath the bottom of the sewage pipe, this depth must be reduced to the extent possible. In certain sections, surface irrigation of the soil water is obligatory, aiming for maximum infiltration and replenishment of the groundwater table. Clay or loam plugs must prevent changes in groundwater flow patterns. Discharge of ground water may not cause flooding during periods of heavy rainfall.
Biodiversity risk	Surplus soil may not be stored where valuable vegetation grows The layout of the project was adapted to reduce the frequency and volume of overflow towards delicate vegetation (elimination of overflow OV03).
Noise pollution risk	None
Odor nuisance risk	None
Anthropogenic risk	None

7. 21667 KWZI Klein-Willebroek—West (EIA Annex III)

Environmental Risk	**Risk Mitigation Measure**
Surface water risk	Purification of domestic wastewater will contribute to the improvement of the water quality of the rivers.
Soil risk	Basins are constructed watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system. Where possible, the other roads are made of water impermeable pavement.
Biodiversity risk	Green zone with regional planting around the installation The plot was included in an approved forest management plan and part of the plot is in a buffer zone. The take-up is compensated by green plantings around the installation and a forest compensation proposal was also made for the 6 trees to be removed (maple and ash). This parcel could thus be left out of the forest management plan without compromising its objectives.
Noise pollution risk	Usage of motors with limited power The pumps are submerged. Limited overflow heights The manifold structure towards the reed beds is covered with a checker plate.
Odor nuisance risk	All structures that could cause odor nuisance are covered.
Anthropogenic risk	See noise and odor measures. Installation as compact as possible. Limit building height as much as possible. A green screen will be provided. The reed beds are planted on the view side of the residential area. The biorotor will be encased with an earthen berm on which planting is provided. Striking colours of the constructions are excluded. Lighting poles (max. 4m height) are kept to a minimum and are only switched when personnel are present.

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8. 20.981 RWZI Kluisbergen – fase 2 (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of additional pollution load to improve the water quality of the Schelde
Soil risk	Basins are made watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system.
Biodiversity risk	Green zone with regional planting around the installation
Noise pollution risk	The motors of the augers, sludgemumps en hydrophore are set up inside. Blowers set outdoor, but equipped with a sound enclosure and sound-absorbing walls. Mixers and pumps are submerged.
Odor nuisance risk	The influent augers are covered and the exhausted air is purified in a biofilter
Anthropogenic risk	See noise and odor measures. A green screen will be provided. Lighting poles are only switched on when staff is present.

9. 21.136 RWZI Bilzen – fase 2 (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of additional pollution load to improve the water quality of the Demer
Soil risk	By using water retarding shoring, sinking the construction and/or return pumping during the construction phase, the chance of settlement is reduced. Basins are made watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system.
Biodiversity risk	Green zone with regional planting around the installation is already in place and will be retained
Noise pollution risk	The motors of the augers, sludge pumps and hydrophore are set up inside. Blowers set outdoor, but equipped with a sound enclosure. Mixers and pumps are submerged.
Odor nuisance risk	Critical process components are grouped as far as possible from odor-sensitive objects, which are not present in the immediate vicinity
Anthropogenic risk	See noise and odor measures. A green screen is precent. Lighting poles are only switched on when staff is present.

10. 21.777 Renovatie RWZI Zemst – Hofstade (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of additional pollution load to improve the water quality of the Barebeek The site for the expansion is effectively flood prone. A rainwater buffer is provided as compensation
Soil risk	The impact of dewatering was calculated in advance, no significant impact is expected. The land on which the refurbished WWTP is planned will be elevated. Basins are made watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system.
Biodiversity risk	Green zone with regional planting around the installation is provided. Along the bank of the Barebeek a zone for wet bank development is planned
Noise pollution risk	Sludgepumps en hydrophore are set up inside. Aerators are set outdoor, but equipped with a sound enclosure, the turbulent water surface of the aeration is covered. Recirculation-augers are equipped with a sound enclosure. Mixers and pumps are submerged.
Odor nuisance risk	A biofilter will provide treatment of the airflow coming from odor-sensitive components, such as the sludge thickener and sludge buffer.
Anthropogenic risk	See noise and odor measures. A green zone is provided around the installation. Local residents will have a say in the type of planting. Lighting poles are only switched on when staff is present.

11. 22905 RWA-as Edegemsesteenweg (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality Realise buffer capacity for rainwater (in pipes and buffer pond – use of squeeze construction). The separation of rainwater and wastewater will prevent dilution of wastewater running to the RWZI (SWPP) and improving the quality of the effluent.
Soil risk	Pipes and constructions are made watertight.
Biodiversity risk	Natural engineering buffer pond in a recreative zone
Noise pollution risk	Positioning of the dewatering equipment by the contractor in such a way as to limit the noise to the local residents. Phased execution of the works.
Odor nuisance risk	None
Anthropogenic risk	Re-route traffic and provide road signalling Increase traffic safety The application of vertical shoring for the construction pit for the purpose of implementing the underground structures (overflows, inspection wells) will be provided

12. 21.537 Collector Molenhoek en sanering Dorpsbeek – Oostkamp (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality Use of toggle covers in flood area Realise buffer capacity for rainwater (in pipes and buffer pond – use of squeeze construction)
Soil risk	Pipes and constructions are made watertight Provide clay plugs to reduce disruption of groundwater flow
Biodiversity risk	Natural engineering buffer pond
Noise pollution risk	Set up the drainage equipment by the contractor that nuisance to local residents is limited Phased execution of the works.
Odor nuisance risk	None
Anthropogenic risk	Re-route traffic and provide road signalling Increase traffic safety (one-way street in Sportstraat near Riderfort)

13. 22.561 Collectering Oostkerke – Damme (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	In case of flood risk, adjust or shut down drainage A watertight sheeting is used at the crossing of the Zwinnevaart
Soil risk	No known contamination nearby Use of earth retaining screen near homes to limit settlement risk
Biodiversity risk	Simultaneous construction with RWZI (project 20.871)
Noise pollution risk	Set up the drainage equipment by the contractor that nuisance to local residents is limited Phased execution of the works.
Odor nuisance risk	None
Anthropogenic risk	Re-route traffic and provide road signalling

14. 22352B renovatie collector Sint-Amands (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	During the dewatering in the Sportlaan, Leerlooierslaan, Kapellaan, the contaminated groundwater was analysed and containing heavy metals was treated in a mobile water treatment plant. Renovating the collector and expanding the pumping capacity will contribute to more pollutant load arriving at RWZI Sint-Amands (WWTP). At the same time, the separation of rainwater and wastewater will prevent dilution. In case of flood risk, drainage was adjusted or stopped.
Soil risk	See surface water risk Pipes and constructions are made watertight
Biodiversity risk	The work zone will be limited to the public road so that there is no intake of Natura 2000 area. Surplus soil may not be stored where valuable vegetation grows
Noise pollution risk	Positioning of the dewatering equipment by the contractor in such a way as to limit the noise to the local residents. Phased execution of the works.
Odor nuisance risk	None
Anthropogenic risk	Re-route traffic and provide road signalling Increase traffic safety

15. 20448 RWZI Berlaar – fase 2 (uitbreiding tot 18.000IE) (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	More purification of domestic wastewater will contribute to the improvement of the water quality of the Nete.
Soil risk	Basins are constructed watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system. Where possible, the other roads are made of water impermeable pavement.
Biodiversity risk	Green zone with regional planting around the installation
Noise pollution risk	Usage of motors with limited power The pumps are submerged. Limited overflow heights The blowers are located far away from the houses, in the middle of the plant
Odor nuisance risk	Use of low-load activated sludge system
Anthropogenic risk	See noise and odor measures. Limit building height as much as possible. A green screen will be provided. Lighting poles (max. 4m height) are kept to a minimum and are only switched when personnel are present.

16. 21910 RWZI Duffel – fase 2 (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of domestic wastewater will contribute to the improvement of the water quality of the rivers.
Soil risk	Basins are constructed watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system. Where possible, the other roads are made of water impermeable pavement.
Biodiversity risk	Green zone with regional planting around the installation The roof runoff from the service building, pumping stations and sludge pump building as well as part of the paving will be collected in a WADI with a volume of 86.5 m³ and an area of 167 m², for infiltration. This complies with the rainwater ordinance.
Noise pollution risk	Usage of motors with limited power A number of devices are installed indoors and/or have noise protection covers (suppressors, aeration propellors, sluice sludge pump and sludge pumps, Archimedes pumps, SWA pumping station (SWA= storm water drainage) and sludge recirculation pumping station); Embedding of critical process components at the back of the site The pumps are submerged Limited overflow heights Green berm as a noise barrier on the NNO side.
Odor nuisance risk	Critical process components are grouped and covered and/or compartmentalized as far as possible from nearby odor-sensitive objects.
Anthropogenic risk	See noise and odor measures. A green screen will be provided. Lighting poles (max. 4m height) are kept to a minimum and are only switched on when staff is present.

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17. 23311 = HAC3014 Rioleringswerken langs de N21 – Haacht (EIA Annex II)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Disconnect rainwater from the treatment infrastructure to better return on the RWZI and create less overflow. *Reduce flood risk by construction of rainwater buffer*
Soil risk	*No working zone on plot 223H* *Surplus soil and material may not be stored on wet clay soils in nature reserve* *Carry out soil mechanical research to determine drainage and settlements risks*
Biodiversity risk	*No working zone on plot 223H* *Surplus soil and material may not be stored in nature reserve*
Noise pollution risk	Apply less nuisance program during constructions
Odor nuisance risk	*None*
Anthropogenic risk	Apply less nuisance program during constructions Increase traffic safety for cyclists

18. 23.051 Prioritaire riolering Gentstraat (tussen COLL 20265 en 22304) – Meulebeke (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Disconnect rainwater from the treatment infrastructure to better return on the RWZI and create less overflow. To avoid flooding, more rainwater is sent to Meentakstraat than to Zuid-Australiëstraat. Buffering rainwater in pipes or in buffer system (integrated in project 23.081)
Soil risk	Pipes and constructions are made watertight
Biodiversity risk	None
Noise pollution risk	Set up the drainage equipment by the contractor that nuisance to local residents is limited Phased execution of the works.
Odor nuisance risk	None
Anthropogenic risk	Improving road safety (limiting speed – adapt road curving – changing priority rules) Apply less nuisance program during constructions

19. 22.743 Collector Westkerkestraat en optimalisatie PS Westkerkestraat – Oudenburg (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	In case of flood risk, adjust or shut down drainage
Soil risk	No known contamination nearby
Biodiversity risk	None
Noise pollution risk	Set up the drainage equipment by the contractor that nuisance to local residents is limited Phased execution of the works.
Odor nuisance risk	None
Anthropogenic risk	Re-route traffic and provide road signalling

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20. 20.747 Plaatselijke zuivering Wijtschate – Heuvelland (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality Building the installation on the east side, given the risk of flooding on the west side of the terrain
Soil risk	Basins are made watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system
Biodiversity risk	Green zone with regional planting around the installation Avoid impact on VEN by discharging effluent to Diependaalbeek
Noise pollution risk	Use motors with limited power Stirrers and propellants are installed submerged Grid and press are encased Limited overflow heights
Odor nuisance risk	Use of low-load activated sludge system Covering influent pumping station
Anthropogenic risk	See noise and odor measures

21. 95202B RWZI Grimbergen : silo + slibontwateringsapparatuur (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	The sludge water will be treated in the purification installation, which was already dimensioned for this purpose in the original design. The small increase in discharged effluent due to the sludge dewatering will be able to be processed in the Tangebeek.
Soil risk	Basins are constructed watertight Storage of chemicals is done in accordance with Vlarem Roads on which spills can occur are connected to the site sewerage system. Where possible, the other roads are made of water impermeable pavement.
Biodiversity risk	Less transportation of sludge will lead to less air pollution.
Noise pollution risk	The sludge dewatering system will be located in an existing enclosed building.
Odor nuisance risk	Measures are taken to limit the odor nuisance by covering the influent pumping station, the grate pumping station and the sludge buffer, whereby the air is removed via ventilation and treated by means of a biofilter.
Anthropogenic risk	See noise and odor measures.

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22. 20.652 RWZI Slijpe – Middelkerke (EIA Annex III)

Environmental Risk	Risk Mitigation Measure
Surface water risk	Purification of pollution load leads to better water quality
Soil risk	Perform drainage by a recognized drilling company Sheeting the construction pit of the influent pumping station, the pre-settlement tank and the humus tank to avoid impact on peat in the subsoil. No known contamination nearby Basins are made watertight
Biodiversity risk	None
Noise pollution risk	Apply less nuisance program during constructions Use motors with limited power Covering motor blocks from biorotors and covering influent pumping station and pre-settlement tank Pumps are installed submerged Limited overflow heights
Odor nuisance risk	Covering influent pumping station, pre-settlement tank and the biorotors
Anthropogenic risk	See noise and odor measures