Regional Director
for Environmental Protection
in Wrocław

Wrocław, February 27th, 2015

WOOŚ.4233.8.2012.ŁCK.47

DECISION

Under Article 71 Par. 2 Subpar. 1, Article 75 Par. 1 Subpar. 1i as well as Article 82 and Article 85 of the Act of October 3rd, 2008 *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments* (Journal of Laws of 2013, item 1235 as amended) in connection with Article 104 § 1 of the Law of 14 June 1960 – *Code of Administrative Procedure* (Journal of Laws of 2013, item 267 as amended) as well as § 2 Par. 1 Subpar. 36 of the Regulation of the Council of Ministers of November 9th, 2010 *on determining the types of projects which may significantly affect the environment* (Journal of Laws No. 213, item 1397 as amended), after considering once again the application of the Director of the Regional Water Management Authority in Wrocław, submitted by an Attorney – Mr. Tomasz Wróblewski, a Designer at Hydroprojekt Wrocław Spółka z o.o. with its seat at ul. Wybrzeże Wyspiańskiego 39 in Wrocław – of August 29th, 2012, ref. No.: HP/B/11/2012, handed over to the present body in a letter of the General Director for Environmental Protection of February 12th, 2014, ref. No.: DOOŚ-oa1.4233.15.2013.IS. 18,

I determine

the environmental conditions for the undertaking entitled: "Construction of "Boboszów" – a dry flood control reservoir on Nysa Kłodzka River", according to scenario II.

I. I define

1. The type and location of the undertaking:

The undertaking in question entails the construction of a dry reservoir located in Boboszów and Pisary, Międzylesie Municipality, Kłodzko district, Lower Silesian Province.

2. Area use conditions during undertaking implementation, with special consideration for the need to protect valuable environmental qualities, natural resources and monuments and to limit disruptions to the adjacent areas:

2.1. The earthworks and the construction and assembly works shall be planned in such a way as to make them last as short as possible and performed only in the daytime, from 6:00 a.m. to 10:00 p.m.

2.2. Tree and shrub removal shall be performed from August 15th to March 15th only in the areas directly colliding with investment implementation, i.e.:

- in the area anticipated for dam body foundation, for construction of service roads and internal access roads to the dam and for overfall devices along the right dam head,
- on the land strip anticipated for temporary relocation of the Nysa Kłodzka river bed (at the construction stage),
- on the slopes subject to the Nysa Kłodzka river bed regulation,
- on the land strip anticipated for performing a new river bed connecting the outlet of the sluice devices with the existing river bed.

2.3. Trees anticipated for removal in the investment area shall be determined under environmental supervision (exercised by a botany-phytosociology specialist). This shall be aimed at preserving the biggest possible part of individual swathes of natural habitats, especially habitat *9180 – Tilio-Acerion forests of slopes, screes and ravines. The part of the swathe of habitat *9180 in the side erosive ravine entering into the Nysa Kłodzka River (the northern part of plot No. 70/1) shall be retained intact and the part of the habitat swathe on the slope next to the ravine estuary to the river bed (estimated surface area: 0.35 ha)

shall be retained as big as possible. The bank zones of the swathe on plot No. 70/1 which are not anticipated for removal shall be visibly marked (e.g. using poles and reflective tape).

2.4. Tree removal within the boundaries of the swathes of natural habitat 91E0* – riparian mixed forests of willow, poplar, alder and ash tree – growing in the area of the designed reservoir basin shall be limited to the necessary minimum (to the extent permitted by the location and technological possibilities, with the participation of a botany-phytosociology specialist); moreover, the biggest possible number of trees and shrubs with their branches hanging low above the Nysa Kłodzka river bed shall be retained.

2.5. The removal of trees with trunk circumferences exceeding 40 cm (except topped willows) and the demolition of buildings shall be performed under the supervision of a chiropterology specialist.

2.6. The construction of the reservoir dam with relief devices shall be performed in a continuous manner, with a reservation that those works should commence before the breeding season of birds, i.e. in the period from August 15th to March 1st. The remaining earthworks related to the construction of an access road to the upstream station, the demolition of the existing Boboszów-Psary municipality road with two related bridges and the demolition of all buildings with all technical installations of territorial development as well as the relocation of a medium voltage line shall be performed in the period from August 15th to March 15th.

2.7. The stubbing of roots of removed trees and shrubs growing on the river bed slopes on the sections to be regulated shall be performed in the period from June 1st to August 31st.

2.8. The works in the river bed shall be performed as "dry" works (i.e. water shall be removed from a given bed section before the works). "Wet" regulation works in the river bed are permitted only on a 70 m long river section (in the upper part of the section upstream of the dam, where adjustment and rip-rap protection of the river banks shall be performed). All works in the river bed absolutely have to be performed beyond the period from March 1st to May 31st and should be maximally reduced in the period from September 1st to the end of February.

2.9. The construction works in the river bed and on the river slopes shall be performed in stages so as to make the works move downstream, i.e. the section at the upstream station should be regulated first and the section at the downstream station should follow.

2.10. The first transfer of construction waters through the constructed dam tunnel and the newly constructed river bed section as well as directing them to the Nysa Kłodzka River downstream of the dam shall be performed in the period from June 1st to August 31st.

2.11. No construction works or tree and shrub removal shall be performed within the distance of up to 100 m from the nest of Black stork *Ciconia nigra* located in the south-western part of the designed reservoir basin and in the period from March 15th to August 31st the abovementioned activities shall not be performed within the distance of 100 to 500 m.

2.12. After the completion of the investment works, the natural character of the river valley microrelief shall be restored to the extent possible along the entire river section covered by the investment.

2.13. Local hollows on lower terraces shall be retained to allow water storage.

2.14. Before the earthworks begin, an approx. 0.2 m thick layer of fertile soil (topsoil) shall be collected from the surface of the area to be covered by earthworks and construction works. The topsoil shall be stored within the construction site backyard or in another location with a hardened substrate in the form of heaps not wider than 3.0 m and not higher than 1.5 m. The heaps should be protected against contamination and running over by vehicles.

2.15. The works related to topsoil removal shall be performed in the period from the middle of August to the middle of March.

2.16. After completing the works related to the construction stage of the designed undertaking, the entire area occupied for the investment shall be cleared, the access roads and the

construction site backyards shall be demolished and the roads slabs together with the collected sand coming from the subcrust shall be transported beyond the investment area to a previously indicated target location. The grounds left after the construction site backyard and the access roads as well as the grounds on the surface of which earthworks and construction works were performed, including the slopes of the constructed dam and the river slopes after performing the regulation, shall first undergo appropriate agricultural practices (ground scarifying, fertilization etc.) and then be covered with a layer of (previously collected) topsoil and sown with an appropriate mixture of grasses including only native species complying with the local habitat. The species used for sowing shall include Red fescue *Festuca rubra,* Meadow fescue *F. pratensis*, Perennial rye-grass *Lolium perenne* and possibly Smooth brome *Bromus inermis.* The sown area shall be covered with biodegradable biotextile fixed to the substrate using wooden pegs. Alternatively, biodegradable biotextile with sown-in grass seeds may be used.

2.17. The trunks of trees exposed to mechanical damage shall be covered with boards to a height of 3-4 m above the ground level (the bottom part of the boards shall rest on the substrate). An elastic material (e.g. thick straw mats) should be put between the boards and the tree trunk surface. The boards shall be fixed to the trunks in several places spaced 40-60 cm apart, using e.g. wire trims or a steel tape.

2.18. If tree boughs and branches are exposed to mechanical damage by working machines or moving cars, preventive cutting of tree branches exposed to breaking shall be performed. The cutting shall be performed under a dendrologist's supervision and must not disturb the natural tree shape (it can cover maximally 1/3 of the green mass of a tree). Tree stability and statics shall be preserved, i.e. the cutting scope must be even on every side of the crown. The ground level within a 1.5-2 m radius from the tree trunks shall not be changed and any height difference possibly created shall be protected with a local small retaining wall or a reinforced slope with a bigger inclination.

2.19. Construction works in the area of root clumps of trees shall be performed only manually. Skeletal roots (with a diameter exceeding 4 cm) must not be cut off. Excavations shall be performed no closer than 2 m from the trunks. The period of root exposure to drying shall be maximally shortened. In the event of damage, the roots shall be protected using an appropriate preparation with a fungicide admixture. If the roots remain unearthed for more than 3 days, they shall be covered with straw or jute mats, which must be thoroughly moistened with water if the temperature is positive.

2.20. Do not route service roads nor locate car parks or storage sites for construction materials or earth in the neighbourhood of trees within the distance of the crown projection area plus 1 m.

2.21. River bed regulation on the downstream station section, downstream of the performed new river bed section on a section of 100 m, should cover only the right slope of the existing river bed together with shaping the terrain on its right bank. The river bottom, the left bank and the left-hand side terrain on that section should be excluded from construction activities.

2.22. Before commencing the construction works on every working day, one shall inspect the excavations and other places which might constitute traps for animals – amphibians, reptiles and small mammals (with special consideration for the migration and breeding period, i.e. from March 15th to October 15th). Any animals found there shall be immediately caught and released beyond the investment area in locations appropriate for particular species. The last inspection of animal presence in the excavations shall be performed directly before backfilling the excavations. If snakes are found in the excavations, a herpetology specialist shall be employed to catch them.

2.23. The construction site backyard and access roads shall be completed before commencing the construction stage. The construction site backyard shall be used to store construction materials, park and fill up machinery, perform running repairs of machines and devices as

well as place staff and common use facilities (changing rooms, office, portable toilets) and waste containers.

2.24. The construction site backyard and all access roads to be used by machines and cars shall be paved with concrete road slabs on a subcrust layer. Every day, after completion of works, and in particular on non-working days, machines and cars shall be parked in a designated area within the construction site backyard.

2.25. The Contractor is obliged to regularly remove the dirt formed on the roads in connection with the traffic of cars and machines related to the implementation of the designed investment.

2.26. A part of the construction site backyard area designated for parking and filling up machines shall be insulated from the substrate.

2.27. The construction site backyard shall be located away from the reach of flood waters.

2.28. The technical state of the working construction and transport machines shall be checked regularly to eliminate leaks of hydrocarbon petroleum derivatives into the substrate.

2.29. In the event of any breakdown in the scope of contamination with petroleum derivatives, the ground contaminated as a result of the breakdown shall be removed immediately.

2.30. A station with a sorbent used to eliminate any leaks and spillages of petroleum derivatives should be located near the machinery parking and filling up site.

2.31. The construction site backyard shall be equipped with tight domestic waste-water holding tanks, the content of which shall be handed over to entities with appropriate permits to manage it.

2.32. The drainage duration times shall be as short as possible and one shall apply methods limiting the quantity of the water pumped out and protecting it against contamination.

2.33. Only means of transport in working order and devices with certified low sound emission shall be used. Defective devices which might cause increased noise levels in the surroundings shall be eliminated from the works.

2.34. During the course of construction works, one shall limit the consequences of secondary dust contamination by observing high standards of works and in particular by systematic clearance of the construction site, sprinkling dusty road surfaces and removal of contamination using mechanical devices (special purpose vehicles). In the places where heavy equipment exits the construction site, one shall install stations for preliminary cleaning of vehicle wheels by removing the ground and mud which might constitute a source of unorganized dust emission from road surfaces.

2.35. Waste generated during the implementation of the investment shall be segregated and selectively stored in containers or in designated and suitably adjusted locations, in conditions which prevent dust emission and prevent the wind picking up light fractions resulting in a negative environmental impact. One shall also ensure regular waste collection by entities authorised to manage it further.

2.36. Hazardous waste shall be segregated and stored separately in designated containers placed on hardened ground, secured against unauthorised access until handed over to entities authorised to manage such waste further.

3. Environmental protection requirements necessary during the undertaking operation stage:

3.1 Extensive pasture and meadow cultivation shall be conducted in the reservoir basin area. It is recommended to mow the area anticipated for mowing in an alternate manner: a half of the area in a given year and another half the next year. Meadows shall be mown in August, after grass flowering. Natural succession towards the forest shall be prevented.

3.2 Dam lighting use shall be limited to situations which require it (an increase of the amount of water, urgent works performed at night etc.). The lanterns shall feature low-pressure sodium-vapour lamps (SOX type) with low UV radiation emission values, which emit light of a clear yellow colour.

3.3 Domestic waste-water shall be discharged to tight holding tanks the content of which shall

be regularly handed over to entities with appropriate permits to manage it further.

3.4 Maintain the minimum acceptable flow on the Nysa Kłodzka River downstream of the dam.

4. Environmental protection requirements necessary to be taken into account in the documentation for issuing the decision referred to in Article 72 Par. 1 of the Act *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments.*

4.1 The dam shall have the form of an earth-fill dam.

4.2 The sluice devices shall be equipped with gates in the form of valves with an electrical drive and an emergency manual drive.

4.3 The tunnel opening through which the river bed waters are going to flow in the normal reservoir operation period shall be adjusted to the width of the Nysa Kłodzka river bed, i.e. to the width of approx. 4 m.

4.4 The banks and the bottom of the artificial bed created for the period of performing the tunnel under the dam body shall be protected with rip-rap. The bed bottom width should be similar to the natural river width, i.e. it should reach approx. 4.0 m. After constructing the facilities related to tunnel functioning, the 145.0 m long temporary river section shall be backfilled.

4.5 The bottom width of the regulated river bed section upstream and downstream of the dam shall be adjusted to the present width of the river bottom, i.e. minimum 4 m.

4.6 The new river bed section (connecting the tunnel outlet with the existing bed, approx. 75.0 m long) shall have an approx. 4 m wide bottom.

II. I find:

1. environmental compensation to be necessary:

1.1 After completing the undertaking construction stage, one nesting box appropriate for White-throated dipper shall be hung under each of the two new bridges on the newly constructed section of Boboszów-Pisary municipality road and under the bridge over the Nysa Kłodzka River along Kłodzko-Boboszów national road No. 33. Detailed location of the boxes shall be consulted with an ornithologist, who shall indicate the most appropriate places for the boxes and directly supervise their hanging.

1.2 After completing the undertaking construction stage, 42 nesting boxes for bats shall be hung in the investment area and its neighbourhood in early spring. The boxes shall be hung in 7 groups of 6 boxes each, with 3 Issel model boxes and 3 Stratmann model boxes in each group. Detailed location of the boxes should be indicated by a chiropterology specialist, who should also directly supervise their hanging as well as their maintenance at the investment operation stage. Box maintenance shall be limited to repairs consisting in improving the tightness and supplementing the missing elements (do not use any chemical agents for the maintenance) as well as cleaning the faeces off the boxes. If the boxes are more seriously damaged or destroyed, they shall be replaced with new ones. Inspection of the boxes shall begin one year after hanging them and be conducted once a year, in the period from the end of July to the end of August, for at least 5 years.

1.3 Planting shall be performed on a total surface area of at least 0.55 ha on the grounds owned by the Investor on both sides of the Nysa Kłodzka River, on free areas appropriate in terms of habitat for 91E0* – riparian mixed forests of willow, poplar, alder and ash tree. The following species which dominate that habitat shall be used for the plantings: trees – Black alder, Goat willow, White willow, Aspen, White poplar and Ash tree; shrubs – Bird cherry and Common hazel.

1.4 Tree and shrub planting shall be performed on both slopes of the Nysa Kłodzka River, on the areas anticipated for forestation outlined on the grounds owned by the Investor. The dendroflora composition shall resemble that of the existing tree stands found in the neighbourhood of those areas (the dominant tree species are: Common beech, Sycamore, Small-leaved lime and Norway spruce; additionally occurring tree species are: Mountain

ash, Silver birch, Silver fir, European larch, Norway maple, Pedunculate oak, Wild cherry, Wych elm and European hornbeam; the shrub species are: Common hazel, Bird cherry, Guelder-rose, Alder buckthorn and Red elderberry; additional species on the forest edges are: Dog rose, Alpine rose, Blackthorn and English hawthorn). The new tree stands should cover a total surface area of at least 3.5 ha on the left valley slope and at least 0.55 ha on the right valley slope. Those areas shall constitute an expansion of the existing forest complexes,

1.5 Tree and shrub planting shall be performed on a surface area of at least 1.5 ha along both sides of the new section of the municipality road. The following tree and shrub species shall be planted on the slope below the road on the reservoir basin side, on an approx. 10-20 m wide land strip (chainage km 0+100 to 1+200 of the road): trees – Sycamore and Small-leaved lime; shrubs – Dog rose, Alpine rose, Blackthorn, English hawthorn, Common hazel, Guelder-rose, Alder buckthorn, Red elderberry and Black elderberry. The abovementioned shrub species shall also be planted on the slope above the road, on a 3-10 m wide land strip (chainage km 0+000 to 0+900 of the road).

1.6 The *9180 slope forest shall be restored on a surface area of at least 0.2 ha on the Nysa Kłodzka valley slope, above the existing habitat *9180 – Tilio-Acerion forests of slopes, screes and ravines, in its direct neighbourhood. The composition of the new tree stand should comply with the one appropriate for a slope forest (dominant tree species: Sycamore; additionally occurring tree species: Small-leaved lime, European ash, Norway spruce and Silver birch; shrub species: Common hazel, Bird cherry, Alpine rose, Mountain ash and Black-berried honeysuckle).

1.7 Detailed designs of the tree and shrub planting referred to in clause II.1.3-II.1.6 shall be developed under the supervision of a dendrologist and an expert botanist as well as agreed with the relevant Forest District. The planting shall be performed in early spring or autumn, during investment implementation. The saplings shall be protected against biting by forest animals. Supervision over the tree stands shall be ensured during their growth and development (for at least 10 years).

2. The need to monitor the environmental impact of the undertaking

2.1 During the vegetation season (June or July) occurring after the first water damming (at least 4 m at the head dam) during the undertaking operation stage, one shall determine the conservation status of the 91E0 riparian mixed forest located in the reservoir basin area. The examinations shall be performed according to the monitoring methodology of the Chief Inspector for Environmental Protection for that type of habitat, with the participation of an expert botanist.

2.2 One year after investment completion, one shall assess the effectiveness of sowing with appropriate mixtures of grasses (the turf) on the reinstated grounds in the investment area, especially on reinforced slopes. Then, until the end of the second, third and sixth calendar year after completing the undertaking construction stage, one shall assess the performed works related to the compensation for habitat *9180 on a selected area, with the participation of an expert botanist. If the compensation process does not proceed correctly, one shall modify and prolong the monitoring period to the next years in order to observe the succession process in the restored swathe and to modify the compensation measures. A superior objective is the achievement of at least U1 (unfavourable inadequate) conservation status in the restored swathe of habitat 9180.

2.3 After constructing the dam, one shall check the functioning effectiveness of the dam body tunnel passing the waters of the Nysa Kłodzka River. The inspection shall be conducted directly after construction completion and in the spawning period with the participation of an ichthyology specialist and shall concern the passage of fish downstream and upstream. If defective functioning of the tunnel causing fish migration difficulties is established, making the tunnel an obstacle to fish and other aquatic organisms, its operation shall be improved immediately.

2.4 Information about the arrangements concerning the manner and scope of performing the measures referred to in clause I.2.3-I.2.5, I.2.18, II.1.1, II.1.2 and II.1.7 as well as documents confirming the participation of specialists (e.g. a protocol of the arrangements and/or a statement of the specialist confirming appropriate examination performance) and results of the monitoring examinations indicated in clause II.2.1-II.2.3 shall be submitted to the Regional Director for Environmental Protection in Wrocław within 60 days of making and/or implementing the arrangements.

III. I do not impose an obligation to conduct an Environmental Impact Assessment within the scope of the proceedings concerning issuing the decisions referred to in Article 72 Par. 1 of the Act *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments*.

IV. The Annex constituting undertaking characterization is an integral part of the decision.

JUSTIFICATION

Mr. Tomasz Wróblewski, a Designer at Hydroprojekt Wrocław Spółka z o.o. with its seat at ul. Wybrzeże Wyspiańskiego 39 in Wrocław, acting for and on behalf of the Regional Water Management Authority in Wrocław, submitted an application of August 29th, 2012, ref. No.: HP/B/11/2012, to the Regional Director for Environmental Protection in Wrocław for issuing a decision on the environmental conditions for the undertaking entitled: **"Construction of "Boboszów" – a dry flood control reservoir on Nysa Kłodzka River".** On January 31st, 2013, the Regional Director for Environmental Protection in Wrocław issued a decision on the environmental conditions for the undertaking in question. One of the parties appealed against the decision to the General Director for Environmental Protection.

The General Director for Environmental Protection issued a decision of December 6th, 2013, ref. No.: DOOŚ-oa1.4233.15.2013.IS.13, by which it overruled the entire decision of the present body and referred the case to re-examination. The documents were sent in a letter of February 12th, 2014, ref. No.: DOOŚ-oa1.4233.15.2013.IS. 18.

The subject of the undertaking is the construction of a dry flood control reservoir. The planned reservoir, due to its small volume (the maximum reservoir volume is approx. 1.418 M m^3), qualifies as an undertaking which might have a potential significant impact on the environment. Reservoirs which might always have a significant impact on the environment, referred to in § 2 Par. 1 Subpar. 35 of the Regulation of the Council of Ministers of November 9th, 2010 *on determining the types of projects which may significantly affect the environment*, hereinafter referred to as the EPA Regulation, include reservoirs intended for permanent storage or holding of at least 10 M m^3 of a new or additional water volume, i.e. those with a volume seven times bigger. The earth-fill dam implemented within the scope of the planned undertaking, with a maximum height of 17.0 m and designed periodic water damming of max. 15.7 m, in accordance with § 2 Par. 1 Subpar. 36 of the EPA Regulation, qualifies as an undertaking which might always have a significant impact on the environment.

The planned undertaking is a project in the scope of flood protection facilities as defined by the Law of 08 July 2010 *on specific terms of preparing for implementation of projects in the scope of flood protection facilities* (Journal of Laws No. 143, item 963 as amended). Pursuant to the statutory disposition of Article 75 Par. 1 Subpar. 1r of the Act of October 3rd, 2008 *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments*, hereinafter referred to as the EPA Act, the correct body for issuing the decision on the environmental conditions is the Regional Director for Environmental Protection in Wrocław.

The parties to the proceedings were identified by the body on the basis of a list of parties as well as land register maps, land survey and height maps and maps for design purposes, with the investment scope and impact areas marked, attached to the application. The parties include: the applicant as well as owners, holders of perpetual usufruct rights and administrators of real properties within the investment area and its impact zone, including the case of a serious breakdown, as well as within the

compensation area. In accordance with the information contained in the study entitled "Programme and Spatial Concept" (Tomasz Wróblewski, M.Sc., Eng., Piotr Trybuś, M.Sc., Eng., Paweł Bobrowski, M.Sc.), developed for the undertaking in question, as well as the results of a flood wave spreading simulation concerning emergency situations (a dam breakdown), the consequence of a dam catastrophe is the flooding of the city of Międzylesie. The number of people living in the flooded area exceeds 300. Thus, in the administrative proceedings in question the number of parties exceeds 20. In connection with the above, and pursuant to the statutory disposition of Article 74 Par. 3 of the EPA Act, the body has informed the parties to the proceedings regarding all actions of the public administration bodies pursuant to the principle set forth in Article 49 of the *Code of Administrative Procedure* by announcements. The announcements were placed for 14 days on the notice boards in the Międzylesie City and Municipality Office and the seat of the Regional Directorate for Environmental Protection in Wrocław, as well as in the Bulletin of Public Information on the website of the Regional Directorate for Environmental Protection in Wrocław: wroclaw.rdos.gov.pl.
In a notice of February 21st, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.25) and an announcement of February 21st, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.26), the body informed the applicant's attorney and the remaining parties to the proceedings about commencing a re-examination of the case concerning issuing the decision on the environmental conditions for the abovementioned undertaking.
In a letter of February 21st, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.27) and a letter of December 16th, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.40), the Regional Director for Environmental Protection in Wrocław informed the attorney of the appealing party, Ms. Anna Łabędź from the Legal Counsel Office, representing Ms. Katarzyna Wróbel, that all parties to the proceedings in question would be notified of all actions of the public administration bodies pursuant to the principle set forth in Article 49 of the *Code of Administrative Procedure*.
In the further course of the conducted proceedings, in reply to a letter of the present body of March 19th, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.28), which demanded adjusting the collected material in the scope of the issues touched upon by the General Director for Environmental Protection in a decision of December 6th, 2013 (ref. No.: DOOŚ-oa1.4233.15.2013.IS.13), which overruled the entire decision of the present body and referred the case to re-examination, on August 12th, 2014, the applicant submitted a consolidated study entitled: "The environmental impact report for the designed undertaking entitled: Construction of "Boboszów" – a dry flood control reservoir on Nysa Kłodzka River", developed by: Jerzy Krajewski, PhD, Tomasz Wróblewski, M.Sc., Eng., Grzegorz Chudy, M.Sc., Eng., with the participation of Wojciech Jankowski, PhD, Michał Smoczyk, M.Sc., Marcin Kadej, PhD, Eng., prof. dr hab. Dariusz Tarnawski, Jan Błachuta, PhD, Wojciech Grzesiak, M.Sc., Kamila Grzesiak, M.Sc., Paweł Kmiecik, M.Sc., Eng., Anna Kmiecik, M.Sc., Eng., Elżbieta Szopińska, PhD, Sylwia Wierzcholska, PhD, Angelika Kuśmierczyk-Jędrzak, M.Sc., Eng., and Anna Pochwała, M.Sc., Eng. (August 2014). The report was supplemented with a letter of November 18th, 2014. The supplementation concerned: the scope of watercourse regulation length, the type of the relocated power line, the method of internal road drainage, the provision of more detailed information about the location and functioning of the construction site backyard in the scope of minimising the hazards related to the possibility of freshets during a long-term construction stage, the undertaking influence on the bodies of water in the boundaries of which it is implemented and on which it has an impact, the cumulative impact assessment, the field study conducted in the investment area in the scope of confirming the presence or absence of macrophytes, phytobenthos and macrozoobenthos as well as the results of the supplemented nature inventory. Moreover, the construction of a municipality road was excluded from the application scope as the road is not a flood protection facility or a facility functionally related to the former as defined by the provisions of the Law of 08 July 2010 *on specific terms of preparing for implementation of projects in the scope of flood protection facilities.*
Pursuant to Article 21 of the EPA Act, the information on the application, the submitted report, the issued decision and the report submitted after overruling the previous decision was put on a publicly available list of data on the documents containing information about the environment and its protection, under their respective numbers: 563/2012, 564/2012, 95/2013, 865/2014.

Pursuant to the statutory disposition of Article 77 Par. 1 Subpar. 2 in connection with Article 78 Par. 1 Subpar. 2 in connection with Article 75 Par. 1 Subpar. 1i of the EPA Act, the Regional Director for Environmental Protection in Wrocław applied to the National District Sanitary Inspector in Kłodzko for an opinion before issuing a decision on the environmental conditions, informing the parties to the proceedings of that fact in an announcement of November 28th, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.6). The planned reservoir is not intended for permanent storage or holding of at least 10 M m^3 of a new or additional water volume, so the provision of Article 75 Par. 1 Subpar. 1a fifth indent of the EPA Act does not apply. It should also be pointed out that Directive 2011/92/EU of the European Parliament and of the Council of December 13th, 2011 on the assessment of the effects of certain public and private projects on the environment transposed to the EPA Regulation states that undertakings which are subject to an Environmental Impact Assessment (listed in Annex No. 1) include dams and other devices intended for holding or permanent storage of water if new or additional volumes of held or stored waters exceed 10 M m^3. In Annex 1, the Directive does not take into account reservoirs with smaller holding capacities, constructed in connection with the implementation of a damming structure more than 5 m high, such as is the case here. Therefore, the National District Sanitary Inspector in Kłodzko was the relevant body to issue an opinion before issuing the present decision.

The National District Sanitary Inspector in Kłodzko did not respond within the deadline prescribed by Article 77 Par. 6 in connection with Article 78 Par. 4 of the EPA Act, which the body assumed to mean a lack of any objections.

In accordance with Article 79 Par. 1 of the Act of October 3rd, 2008 *on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments*, the Regional Director for Environmental Protection in Wrocław, on the basis of Article 33 of the cited Act, by an announcement of December 12th, 2014 (ref. No.: WOOŚ.4233.8.2012.ŁCK.39), published information about the planned undertaking, i.e. about:

- the commencement of conducting an Environmental Impact Assessment for the undertaking in question,
- instituting the proceedings,
- the subject of the decision to be issued on this matter,
- the relevant body to issue the decision and the relevant body to issue the opinion,
- the opportunity to review the necessary documentation of the case and the location where it is made available for review,
- the possibility of submitting comments and applications,
- the manner and location for submitting comments and applications, at the same time setting out a 21-day deadline for submitting them,
- the relevant body to consider comments and applications.

In the announcement, the body indicated that the proceedings to issue a decision on the environmental conditions for the undertaking in question were conducted for the Regional Water Management Authority in Wrocław, on behalf of which Mr. Tomasz Wróblewski is acting, representing Hydroprojekt Wrocław Sp. z o.o. at ul. Wybrzeże Wyspiańskiego 39, 50-370 Wrocław. It clarified that the relevant body to issue a decision on the environmental conditions for the planned undertaking which might always have a significant impact on the environment, listed in § 2 Par. 1 Subpar. 36 of the Regulation of the Council of Ministers of November 9th, 2010 *on determining the types of projects which may significantly affect the environment* (Journal of Laws No. 213, item 1397) in accordance with Article 75 Par. 1 Subpar. 1i of the EPA Act, was the Regional Director for Environmental Protection in Wrocław. The body announced that it had applied to the National District Sanitary Inspector in Kłodzko for an opinion before issuing the decision (as the relevant body in the case). Additionally, it indicated that anyone might review the entire documentation collected for the case since the day of displaying the announcement publicly, in the seat of the Regional Directorate for Environmental Protection in Wrocław at Powstańców Warszawy Square 1, room No. 3018, from 7:30 am. to 3:30 pm. It announced the opportunity to submit, between December 19th, 2014 and January 8th, 2015 (incl.), comments and applications pertaining to the planned undertaking

in writing to the abovementioned address, verbally for the record or using electronic means of communication without the need to apply a safe electronic signature as referred to in the *Electronic Signature Act* of September 18th, 2001 (Journal of Laws of 2013, item 262 as amended). It indicated that the Regional Director for Environmental Protection in Wrocław was the relevant body to consider comments and applications. The society was informed that comments and applications submitted after the designated deadline would not be considered.

With reference to the disposition in Article 3 Par. 1 Subpar. 11 of the EPA Act, the information on the planned undertaking was published through:

- publication on a notice board in the seat of the body relevant in the case, i.e. the Regional Directorate for Environmental Protection in Wrocław,
- publication of the information on the website of the Bulletin of Public Information of the Regional Directorate for Environmental Protection in Wrocław (www.wroclaw.rdos.gov.pl),
- notification of the planned undertaking by an announcement in a manner customarily adopted at the implementation site of the planned undertaking,
- publication in the press – in an extra to the Lower Silesian *Gazeta Wyborcza*.

The above announcement was displayed from December 18th, 2014 to January 8th, 2015 (incl.) on:

- the notice board in the Międzylesie City and Municipality Office,
- the notice board in the Regional Directorate for Environmental Protection in Wrocław,
- the website of the Bulletin of Public Information of the Regional Directorate for Environmental Protection in Wrocław: www.wroclaw.rdos.gov.pl.

On December 18th, 2014, the announcement was published in an extra to the Lower Silesian *Gazeta Wyborcza*.

On January 8th, 2015, Ms. Katarzyna Wróbel applied for the provision of more details by sending all information about the announcements to an electronic mail address. The body complied with the party's application.

Moreover, one comment was submitted after the defined deadline for the submission of comments and applications. The person submitting the comment touched upon the issue of undertaking influence on the climate. The person reckons that wet and dry reservoirs with a rubble catcher might influence air humidity and, consequently, the perceptibility of low temperatures in winter and fungi and mould growth in summer. The person also mentioned the undertaking influence on the increase of mosquito proliferation. The body did not consider that comment. However, one should highlight that the planned reservoir is a dry one, for which the concept of rubble catcher construction was given up. The reservoir shall store water with a probability of occurrence of once every ten years and, in addition, shall store it for the period of approx. 7-8 hours. Dry reservoirs without a rubble catcher, as in the case in question, do not exert the abovementioned impact.

Therefore, pursuant to the principle defined in Article 10 § 1 of the *Code of Administrative Procedure*, the Regional Director for Environmental Protection in Wrocław, by an announcement of February 2nd, 2015 (ref. No.: WOOŚ.4233.8.2012.ŁCK44) and an announcement of February 2nd, 2015 (ref. No.: WOOŚ.4233.8.2012.ŁCK45), informed the parties to the proceedings that a complete set of evidence had been collected for the proceedings to issue a decision on the environmental conditions for the undertaking in question and that there was a possibility of submitting comments on the collected evidence and the reported demands.

Before issuing the present decision on the environmental conditions, no party submitted comments or applications to the proceedings within the above deadline.

Within the scope of the conducted administrative proceedings on the Environmental Impact Assessment, a set of documentation compliant with Article 74 Par. 1 of the EPA Act was submitted for consideration.

4 different scenarios for the undertaking were analysed at the undertaking stage (I, II, III, IV): scenarios I and II with the dam crest at an elevation of 500 m AMSL and the maximum damming level at an elevation of 499.70 m AMSL as well as scenarios III and IV with the dam crest at an elevation of 498.50 m AMSL and the maximum damming level at an elevation of 497.00 m AMSL. The difference between crest elevations in the first solution (scenario I and II) and the second solution

(scenario III and IV) is 1.5 m. The adopted dam crest level shall influence the obtained reservoir volume and, consequently, the flood wave reduction degree. Taking into account the reservoir reduction effectiveness, scenarios I and II proved the most effective. In that solution, it was possible to reduce a wave corresponding to the design water flow and a wave corresponding to the control water flow. Both solutions (a reservoir with the dam crest at an elevation of 500 m AMSL and a reservoir with the dam crest at an elevation of 498.5 m AMSL) reduce a design water flow on the level of approx. 70%. Concerning the control wave flows, the reduction shall reach 47% in a reservoir with the dam crest at an elevation of 500 m AMSL and 19% in a reservoir with the dam crest at an elevation of 498.5 m AMSL.

The next scenario selection criterion was structure safety. In all four scenarios (I, II, III and IV), the dam structure is designed as an earth-fill one with 1:3 slope inclination (in scenarios III and IV, slope inclination is locally reduced to 1:1 in the area of discharge structures). In scenarios I and II, the sluice devices are designed in the form of a tunnel equipped with channels, whereas the overfall devices are designed in the form of two overfall towers in scenario I and a sloped overfall in scenario II. In scenarios III and IV, the sluice devices are designed in the form of a tunnel equipped with channels, whereas the overfall devices are designed in the form of a head overfall. Scenario II with a sloped overfall proved to be the safest solution. A sloped overfall allows for constant monitoring and access along the entire structure length as well as is less vulnerable to possible clogging by logs or other elements carried by the river.

For all four scenarios (I, II, III and IV), a similar reservoir basin shape has been designed. The only difference entails a rock rubble catcher in scenarios III and IV within the reservoir basin.

The Regional Director for Environmental Protection in Wrocław considered the environmental impact of all the analysed scenarios and assessed the anticipated impact of the undertaking on particular elements of the environment.

After analysing the technical solutions of individual scenarios, while simultaneously paying attention to environmental and natural aspects, scenarios I and II prove to be the most favourable. In those scenarios, the width of one of the tunnel openings (through which the river waters shall flow in normal conditions) is approx. 4.0 m and corresponds to the river bed width on the section covered by the investment; the bottom shall be shaped in a manner similar to the natural state. Such a solution shall allow for the preservation of bed continuity on the entire river section running under the dam body, therefore enabling the aquatic organisms to move to a similar extent as they do now. In scenarios III and IV, the width of one of the tunnel openings, through which the river shall flow in normal conditions, is up to 2.0 m. Additionally, in scenarios I and II, two vertical reinforced concrete chimneys shall be built on the downstream section of the dam, facilitating sunlight access to the main part of the tunnel housing the river bed, which shall further contribute to obtaining conditions similar to the natural ones along this artificial section of the river. The solution from scenario II, in the form of a sloped overfall, is a safer one in terms of protection from possible clogging by trees and shrubs carried by flood waters. This scenario allows for retaining trees and shrubs growing in the reservoir basin area (except those directly colliding with the investment). Owing to moving the sloped overfall from the left side of the dam to the right one and leading it along the right dam head, the major part of protected priority habitat 9180 – Tilio-Acerion forests of slopes, screes and ravines (*Tilio platyphyllis-Acerion pseudoplatani),* situated on the left-hand side of the river next to the dam location, shall be preserved. Local removal of trees on an approx. 200.0 m long section along the Nysa Kłodzka river bed (upstream of the regulated section) in the reservoir basin area was also given up.

Based on an analysis of the above solutions, the Regional Director for Environmental Protection in Wrocław concurred with the Investor's application for implementing the undertaking under scenario II.

As part of the Environmental Impact Assessment, the body examined the anticipated impact of the undertaking on particular elements of the environment, especially on the conservation objectives of Natura 2000 sites.

The planned undertaking is located outside the boundaries of protected areas referred to in Article 6

of the *Environmental Protection Act* of April 16th, 2004 (Journal of Laws of 2013, item 627 as amended), including outside the boundaries of Natura 2000 sites (the nearest Site of Community Importance, PLH020016 – "Bialskie Mountains an Śnieżnik Group", is located approximately 2.2 km from the northern edge of the reservoir basin and approx. 3.2 km from the dam). The boundaries of the Śnieżnik Landscape Park are situated within the same distance, while "Bystrzyckie and Orlickie Mountains" protected landscape area is located approx. 2.8 km west of the reservoir dam.

The execution of "Boboszów" dry flood control reservoir on Nysa Kłodzka River (at chainage km 180+085 of the river, near Boboszów village, Międzylesie Municipality) shall include works concerning the following elements: construction of an earth-fill reservoir dam with a sloped overfall led along the right dam head, construction of internal roads and regulation of the Nysa Kłodzka river bed upstream and downstream of the dam. The dam shall be equipped with a sluice device in the form of a 135 m long reinforced concrete tunnel led under the dam body and split into three channels with the following widths: 1 x 4 m and 2 x 1.7 m (total width: 11 m). In normal conditions, waters flowing in the river bed shall pass through the 4 m wide opening which corresponds to the width of the Nysa Kłodzka river bed on the section covered by the investment. Two vertical reinforced concrete chimneys shall be built on the downstream section of the dam, facilitating sunlight access to the main part of the tunnel housing the river bed. The construction of sluice devices shall require temporary relocation of the Nysa Kłodzka river bed (together with implementation of a 145 m long temporary river section, which shall operate for approx. 1 year). After the performance of the works related to Nysa Kłodzka river bed, the river shall be shortened on the section where the works are performed. Approx. 170 m of the existing river bed shall be backfilled and a new, approx. 150 m long bed shall be constructed; moreover, a part of the existing river bed shall be regulated. Their shape shall be similar to that of the natural bed in terms of bed bottom width, inclination and bank slope shaping, which shall ensure the same flow as in the original bed. Owing to those measures, the dam shall not constitute an obstacle to the migration of fish and other aquatic organisms on the long profile of the river during the construction or operation stages. Since the implementation of so-called rubble catcher on the river section covered by undertaking implementation as well as upstream and downstream of that section was given up (in comparison with the previous design), there shall be no additional barrier limiting rubble movement downstream (there shall be a grating with a mesh size of 40 cm in front of the tunnel inlet, but it shall retain only bigger boulders, tree trunks and branches carried by the current during big freshets). The solution maintaining free movement of rubble shall ensure lack of habitat changes related to the river bottom and bed downstream of the reservoir.

The planned construction of the dry reservoir shall proceed within the boundary of a Body of Surface Water (BSW) *"Nysa Kłodzka from the source to Różanka"*, code PLRW60004121169, within the Odra river basin district (Middle Odra water region). The project impact range associated with a change in the frequency of flooding along the Nysa Kłodzka River section and the impact range associated with a major breakdown of the reservoir shall also affect the BSW with code PLRW 60004121169 and a BGW with code PLGW6220110. The *Nysa Kłodzka from the source to Różanka* BSW is of type 4 (a highland silicate stream with a coarse-grained substrate). In accordance with provisions of the *Odra river basin district river basin management plan* published on May 27th, 2011 (M. P. No. 40, item 451) (ORBD RBMP), the *"Nysa Kłodzka from the source to Różanka"* BSW with code PLRW60004121169 is a part of the Unified Body of Surface Water (UBSW) code SO0901. The Body of Surface Water was classified as a natural part of waters and its status was assessed as bad, at risk of failing to achieve the environmental objectives of Odra RBD RBMP. Derogation 4(7) – 1 has been determined for it on account of the planned actions within the scope of investment implementation, resulting in changes to the physical characteristics of the BSW serving a higher social purpose, i.e. flood protection.

Since the investment shall be implemented during a new urban planning cycle, the identification of the bodies of waters and their objectives was also updated with a current assessment of those bodies of waters within the boundaries of which the project shall be implemented and which it shall impact. According to the updates, the *"Nysa Kłodzka from the source to Różanka"* BSW constitutes a natural body of water the environmental objective of which is to maintain a good ecological status of waters

and to achieve a good chemical status of waters. Due to the planned activities in the scope of implementing investments which cause changes in BSW physical characteristics and serve a higher social purpose, i.e. flood protection, derogation 4(7) – 1 (an exemption from the achievement of environmental objectives) was determined for that body of water in the present status. During the 2015-2021 urban planning cycle there is no justification for the need to maintain hydromorphological changes (in accordance with Article 4 Par. 3 of Directive 2006/60/EC of the European Parliament and of the Council of October 23rd, 2000 establishing a framework for Community action in the field of water policy (OJ EU L 327 of 22.12.2000, p. l; OJ EU Polish special issue, chapt. 15, vol. 5, p. 275 as amended), referred to as the "Water Framework Directive"). The protection objective of the Body of Surface Water under analysis is to achieve, by 2021, a good ecological status and a good chemical status of the waters.

Furthermore, it is indicated in the presented documentation that the BSW in question lies within an area featuring water intended for water uptake for the purposes of providing the population with water for consumption. Thus, the provisions of the Regulation of the Minister of the Environment of November 27th, 2002 *on the requirements for surface waters for consumption purposes* (Journal of Laws No. 204, item 1728) shall be applicable.

In order to assess the undertaking impact on achieving the environmental objectives, a study which was submitted with the Report, entitled: "*An expert report – An assessment of the influence/impact of the planned undertaking on the water protection objectives stemming from the Water Framework Directive for the planned undertaking: "Construction of "Boboszów" – a dry flood control reservoir on Nysa Kłodzka River"* by Michał Błachuta, Jan Błachuta and Michał Smoczyk, as well as the supplement, analyse the undertaking impact on the ecological status of that body of water by assessing the impact of the project on particular water quality indicators defining the biological elements (impact on fish fauna and possible impact on phytobenthos, macrophytes and benthic macroinvertebrate fauna), the supporting hydromorphological elements (hydrological system, river continuity, morphological conditions), as well as the supporting physical and chemical water quality elements (temperature, oxygen levels, salinity, water acidity, biogenic conditions, specific contaminants). The analysis was preceded by an assessment of the current ecological status of the waters.

The current status of particular biological elements which are decisive when it comes to BSW ecological status is varied; however, the ecological status of the waters of the entire BSW was assessed – based on the results of surface water quality monitoring performed by the Provincial Inspectorate for Environmental Protection (WIOŚ) in Wrocław in 2012 – as good, also meeting the requirements of protected areas. Quality indicators, including indicators not tested by WIOŚ defining the ecological status of fish fauna, benthic macroinvertebrate fauna and macrophytes, were supplemented with results of own research performed by specialists for the needs of the Report, according to GIOŚ research methodologies (fish fauna research in 2012, macrobenthos research in 2013, macrophyte research in 2014). Sampling stations were performed on the section covered by the investment on the Nysa Kłodzka River (Potoczek and Smeryczna stations) and partially downstream, on the Goworówka Stream (stations: the intake and Goworów), as well as on the Różanka Stream (Różana station). According to the authors of the Expert Report, BSW ecological status along the section subject to the application qualifies for class two (the boundary value of the parameter is in accordance with the class assigned to biological elements defined by WIOŚ). Such a status was primarily dictated by the quantity and species status of fish fauna and macrophytes. The presented research results indicated that fish fauna at the 4 researched stations within the boundaries of the BSW in question was in class II. The ecological status of the river within the scope of macrophytes on the tested section varied from moderate (2 stations), through good (6 stations) to very good (3 stations). The average for the entire tested section is good. This means slight changes in biological element composition and number; the hydrological regime and morphological conditions are slightly affected and allow for achieving good values for the biological quality elements.

The Body of Surface Water achieves a good ecological status when all the water quality indicators associated with biological elements achieve a good status. Physical and chemical as well as

hydromorphological elements, which are supporting elements, make it possible for the biological elements to achieve a good status. If biological elements meet the good status conditions, this means that the hydromorphological conditions of a given body of water are good enough to allow the biological elements to achieve a good status. Further, in order for the body of water status to be considered as good, both the ecological as well as the chemical status have to be good.
The core component for the assessment of the ecological status of waters is biological elements. Hydraulic undertakings exert a direct impact on the hydromorphology of waters, and every change to the hydromorphological as well as physical and chemical parameters entails changes to the biological elements which are dependent on hydromorphology. Thus, on the basis of the submitted evidence, it was assessed how hydromorphological as well as physical and chemical parameter changes in a BSW would result in changes to the dependent biological elements.
Taking the above into consideration, the determined potential impact factors include:

- short-term contamination of water with suspension during the works;
- degradation of a river section upstream of the dam as a result of periodic decrease in the flow speed during reservoir damming; change to sediment grain size at the undertaking operation stage;
- direct destruction of habitats and organisms during the project implementation stage;
- unfavourable impacts associated with regulating the river bed and river banks (deterioration of the natural quality of the riverside natural habitat or habitats of species that live in the river, periodic sludge accumulation or other disruptions to habitats as a result of works, destruction of species that live on or in the river bottom, disruptions to fish fauna spawning, migrations of fish fauna and other aquatic organisms if the works are carried out during the wrong period).

The analysis submitted in the Expert Report and the supplement of November 18th, 2014 unambiguously demonstrates that the undertaking shall not impact the hydrological conditions, i.e. the water flow dynamics and the connections with Bodies of Ground Water, within the scope of normal flows, as the reservoir is to reduce only catastrophic flows, with flow rates not less than Q10%. During implementation, if great flows do not occur, no significant impact on the size or dynamics of the flows is anticipated, whereas the impact during operation shall be short-term, conditional upon the river flow rate, which shall be reduced on the outflow, and limited to the duration of the wave with an occurrence frequency of at least once every 10 years (during the most frequent freshets occurring once every 10 years to once every 100 years, the reservoir basin shall be filled for less than 1,5 days; after that time, the water held in the reservoir basin shall flow out into the river downstream of the dam). The increase in the flow dynamics during the periods of water damming in the reservoir shall be limited to the time when water is held in the reservoir, and thus the impact shall be short-term and reversible.
During the investment implementation period a dam shall be constructed, with its relief devices designed in the form of a reinforced concrete tunnel. In normal conditions, waters flowing in the river bed shall pass through the 4.0 m wide opening. The assumed channel width corresponds to the width of the Nysa Kłodzka river bed on the section covered by the investment. This shall make it possible to shape a bed in the channel which shall be similar to the natural one and thus to ensure correct conditions for the migration of fish living in the river. Thus, watercourse continuity shall not be broken. The length of the regulated bed sections related to the designed undertaking shall be small: 510.0 m. The new river bed and the regulated sections shall be shaped similarly to the natural bed – this concerns bed bottom width, inclination and bank slope shaping. The previous river bed width and longitudinal fall on the regulated sections shall be preserved. The banks along the majority of the regulated sections shall be covered with rip-rap. The regulation shall shorten the river only by 20.0 m, thus ensuring that the size and speed of water flow through the new bed and the regulated bed shall be similar to those in the natural river bed. Water dynamics may locally increase during the works, but that phenomenon shall occur only on the sections where the bed shall be slightly narrowed to enable wet works implementation when reinforcing the banks. Thus, the water flow size and dynamics shall change to a minimal and insignificant extent.
Along the regulated and new watercourse sections, rip-rap and paving stone shall be used in most

places. An application of retaining walls is planned, to an insignificant extent and on one side. Thus, it may be considered that the hydraulic connectivity with Bodies of Ground Water shall not be broken.
Changes to the watercourse morphological structure shall concern a short section of the bed, including the river section under the dam, where river depth and bed width variability shall be unified and the bottom structure shall be simplified. Apart from transformations of the watercourse, there shall be interference in the river banks. These regulations shall cover the section upstream and downstream of the constructed dam. When assessing the scale of the undertaking impact on the physical characteristics of the body of water within the scope of morphological indicators based on the methodology used to identify bodies of water which have been significantly altered, contained in the study entitled: "Verification of indicators for an assessment of the quantitative and morphological status of bodies of surface waters together with a change to their threshold values to support the initially identified significantly altered bodies of waters" (Błachuta J., Jarząbek A., Kokoszka R., Sarna S.; KZGW, Warsaw, 2006), it should be stated that investment implementation shall impact the water regulation indicator only to a small extent, but not to an extent which threatens the achievement of the defined environmental objectives. The used method makes it possible to assess the scale of the undertaking impact on the physical characteristics of the body of water. The methodology is based on four morphological indicators: total length of embankments of watercourses significant for the catchment area of the body of water compared to the total length of significant banks (M1 – threshold value: 60%), total height of inventoried damming structures compared to the total level difference of watercourses significant for the catchment area of the body of water (M2 – threshold value: 15%), total length of watercourses cut off by perpendicular structures with a defined level difference compared to the total length of all significant watercourses (M3 – threshold value for permanent damming structures: 30%) and total length of river sections along which regulation works were performed (M4 – threshold value: 50%). The presented indicators make it possible to characterise the spatial scale of the undertaking. The analysis demonstrates that approximately 2% of the length of watercourses significant in the BSW have been physically transformed – which, after adding to the existing transformations, assessed at approx. 19%, yields an M4 regulation indicator of approx. 22% (with the threshold value equal to 50%). Physical transformations of the BSW which change the morphological conditions are not significant enough to cause lowering of the ecological status assessment result. Therefore, in this respect, undertaking implementation does not cause a hazard to the achievement of environmental objectives in the next planning cycle (the year of 2021). The M1, M2 and M3 indicators shall not change, as the investment does not entail embanking the watercourses, water damming is only periodic (the dam is not a facility which dams water permanently) and the overall length of watercourse parts cut off by perpendicular structures with a given level difference shall not change either. To sum up, it should be stated that undertaking implementation shall result in only a small change of the M4 indicator, which measures regulation: it shall be approximately 22% with a threshold value of 0.50 (50%). Despite an increase, the value of the M4 indicator is still below the threshold value, which indicates that the undertaking shall not fundamentally alter the functioning of biological elements and shall not prevent the achievement of environmental objectives.
Once the impacts affecting the achievement of environmental objectives and the impacts causing status deterioration as defined by the Water Framework Directive were identified, and taking into account the scope of hydromorphological changes, it was determined that the potential negative impact on biological elements would be most profound during the undertaking implementation stage. These pertain to a short (several hundred metre long) river section constituting less than 2% of the length of watercourses significant in the BSW. After the implementation period the impacts shall be limited to morphological transformations insignificant for the entire BSW, resulting from regulating a short watercourse section. Undertaking construction and operation shall not cause lowering of the BSW ecological status. It is also anticipated that the undertaking shall not impact the hydrological conditions within the scope of normal flows. The reduction of flood flows shall not cause direct negative impacts, as the reservoir is only anticipated to reduce catastrophic freshets, which are

harmful even to biological elements. Catastrophic freshets cause a destruction or carrying downstream of entire complexes of benthic macroinvertebrate fauna, phytobenthos and fish as well as a significant reduction of macrophytes. After catastrophic freshets, those complexes are restored in the rivers. Depending on the biological element, the restoration period lasts from 2-3 months (phytobenthos) to 2-3 years (macrophytes, fish fauna). Water dynamics may locally increase during the works, but, as indicated above, that phenomenon shall occur only on the sections where the bed shall be slightly narrowed to enable works implementation when reinforcing the banks. Works in the river bed and along its banks shall entail direct destruction of aquatic plants and plants growing in the riparian zone as well as macrobenthos and fish fauna habitats and feeding grounds; however, compared to the significant length of the Nysa Kłodzka River itself (44.73 km) in the BSW in question, possible losses (occurring along the 170 m long backfilled river section, approx. 230 m long regulated sections and an approx. 70 m long partially regulated section) shall be insignificant in relation to phytobenthos, macrophytes, benthic macroinvertebrate fauna and fish fauna. Concerning fish and other organisms, it is highly probable that their habitats and food base shall restore themselves in the new river bed and on regulated sections.

The impact on physical and chemical elements shall be short-term, occurring only during the works performance stage. It may apply to physical and chemical parameters, such as general suspension or oxygen dissolved in water. The level of suspension on the section subject to the application is marginal under normal flow, which is associated with the type of watercourse and the structure of its bottom (a highland silicate stream with a coarse-grained substrate). The designed works in the river bed shall be a source of suspensions penetrating to the water to an insignificant degree and shall not constitute a threat to the achievement of the environmental objective. Reinforcing the river banks with rip-rap along a 70.0 m section may constitute a source of a small quantity of suspensions in the form of deposits from the bottom (the bottom is a coarse-grained substrate) and soil from the slopes during tree removal and stubbing. The new bed section shall be constructed via "dry" works, so, apart from a short period of connecting it to the existing river bed, this activity shall not generate contaminants in the form of suspension, even more so because its bottom shall be lined with a coarse-grained material. In fast flowing submontane watercourses (such as the discussed section of the Nysa Kłodzka River) with cold, oxygen-rich waters, suspensions which penetrate into the water during the performance of works shall not significantly affect the existing oxygen conditions or aquatic organisms downstream of the performed works. Undertaking implementation shall not affect water salinity, acidity or temperature.

The implementation and operation of the undertaking shall not deteriorate the water quality indicators used to assess its chemical status. With correct use of machinery and devices, there should be no river contamination with petroleum derivatives. Furthermore, parking sites hardened and insulated from the soil have to be designated within the construction site backyard. They shall be used for filling up, servicing, repairing and parking the machines and devices. The construction site shall be located away from the reach of flood waters. A dry reservoir does not generate or emit chemical substances. The cleanliness of the reservoir as well as the river and groundwater depends on the cleanliness of the catchment area and its anthropogenic use. Reservoirs with permanent damming feature mechanisms which facilitate deposition of contaminants. Long-term stagnation of water in a reservoir facilitates the deposition of contaminants, and thus an increase in the thermal condition of the held water, phytoplankton growth and deposit sedimentation. Municipal waste-water discharged into the river and agriculture (through fertilisation management and erosion processes) are a source of nitrogen and phosphorus compounds which accelerate phytoplankton growth and in general are a cause of eutrophication of permanently damming reservoirs. A dry reservoir is free from all of the above defects. Due to stagnation of water limited in time (the reservoir shall only reduce ten-year flows), temporarily held water has a thermal condition similar to that of the river as well as turbulent flow, the water is oxygen-rich and as such makes phytoplankton growth difficult, and constant outflow prevents the contaminants from depositing. The dry reservoir basin shall be excluded from intensive agricultural production, which shall reduce the inflow of agricultural type biogenes. Limiting the removal of trees and shrubs shall intensify the action of water purification systems (the plants shall

act like filters). There shall be no recreational use of the reservoir. Furthermore, it should be pointed out that the reservoir is implemented on the upper Nysa Kłodzka River section, the anthropogenic transformation of which is slight. The Nysa Kłodzka National Monitoring conducted in 2012 showed that the waters of that BSW achieved a good chemical status. Most of the area is occupied by semi-wild mountain meadows situated mainly of the slopes of hills, as well as by farmlands. Tree stands are found on the slopes of hills and along watercourses. In the use structure of the designed reservoir area, green areas constitute approximately 86.1% of the reservoir surface area and forests occupy approx. 13.9%. Therefore, these are not particularly industrialised areas, constituting a risk of significant water contamination. Thus, taking into account the good chemical status of this body of water and the fact that the reservoir is implemented in an area with slight anthropogenic transformation, it can be ascertained that short-term water stagnation in the reservoir does not carry a significant risk of contaminating surface waters and consequently a deterioration of the chemical status of this body of water.

The project shall not have a negative impact on environmental components determining the BSW state, and thus shall not contribute to a failure to achieve a good BSW ecological and chemical status in the current and the next planning cycle. The investment shall not alter the requirements for surface waters designated for consumption.

The undertaking lies within the boundaries of Body of Ground Water (BGW) No. 110, code PLGW6220110, which, according to the provisions of the *Odra river basin district river basin management plan*, is characterized by a good quantitative status and a good chemical status. In 2008, a review of the BGW boundaries set out in 2005 took place and as a result of those works a new BGW division of Poland was established. It shall be binding in the ORBD RBMP from the next planning cycle (the end of 2015). According to those data, the dry reservoir lies within the boundary of BSW No. 125, code PLGW6000125. The quantitative and chemical status of this body of water has not changed.

In accordance with the binding legal regulation, the environmental objective for a Body of Ground Water is:

1. prevention or limiting of introducing contaminants;
2. prevention of deterioration of its status and improvement of that status, and thus, in the present case, maintenance of a good BGW quantitative and qualitative status;
3. protection and repair activities as well as ensuring balance between water uptake and feed, so as to achieve a good water status.

The implementation and operation of the investment should not affect the quantitative and chemical status of this Body of Ground Water. During the investment implementation and operation stages, contaminants which could change the chemism of the waters shall not be generated. The works performed during the undertaking construction stage shall not generate any negative impacts of a qualitative character on the groundwater. They may only cause short-term, temporary lowering of the groundwater table level during the performance of the necessary excavation drainage. Nonetheless, in order to fully eliminate the potential of groundwater contamination, all locations designated for servicing vehicles and working machines shall be periodically (till the end of the construction period) covered with insulation materials. Domestic waste-water shall be discharged to tight holding tanks and regularly collected by authorised entities. The works shall be performed with the use of construction equipment in good working order. In the event of uncontrolled penetration of petroleum derivatives into the ground or soil in connection with using heavy construction equipment, appropriate measures shall be taken with the aim of removing the contaminants from the ground and the soil so that groundwater and surface waters are not contaminated.

The groundwater status in the area of a dry reservoir also depends on the cleanliness of the catchment area and its anthropogenic use. As mentioned above, the chemical status of the Nysa Kłodzka River on the section subject to the application was assessed as good. The possibility of contaminant transfer together with rain waters from the terrain surface to the groundwater largely depends on the layer thickness of low permeability formations insulating the aquifer. The Quaternary aquifer is predominantly covered with low permeability grounds. The threat concerns only the locations where

outcrops of cracked rocks of the Cretaceous stage are uncovered as well as areas consisting of permeable alluvial layers in the direct neighbourhood of the Nysa Kłodzka River.
However, the reservoir shall only reduce ten-year flows, temporarily stored water shall have a thermal condition similar to that of the river as well as turbulent flow, the water shall be oxygen-rich and the constant outflow shall prevent the contaminants from depositing. The dry reservoir basin shall be excluded from intensive agricultural production. Tree removal shall be limited. As mentioned above, the reservoir is implemented on the upper Nysa Kłodzka River section, the anthropogenic transformation of which is slight. In the use structure of the designed reservoir area, green areas prevail. Thus, taking into account the good chemical status of this body of water and the facts that the reservoir is implemented in an area with slight anthropogenic transformation and that the aquifer is predominantly covered with low permeability grounds, it can be ascertained that short-term water stagnation in the reservoir does not carry a significant risk of contaminating the groundwater and consequently a deterioration of the chemical status of this body of water.
The works related to reservoir construction may cause instances of short-term, transient, local lowering of the groundwater table due to the necessity for performing the necessary drainage during the earthworks and the construction works. This mainly applies to ground excavations for the dam body foundation, excavations associated with the construction of sluice devices and excavations associated with the construction of a temporary and a new bed of the Nysa Kłodzka River.
The main utility reservoir of groundwater with the biggest range in the area of the designed "Boboszów" dry flood control reservoir is Cretaceous stage formations. The aquifer thickness in the Quaternary aquiferous stage is small (0.2 to 1.0 m). The water table is mainly free; it was determined in the boreholes in the bottom and edge of the Nysa Kłodzka River Valley at a depth of 1.2-4.5 m BGL. The water table was confined only on the northern and southern edges of the reservoir, where it was locally present under loams. The aquifer overburden and simultaneously the top layer in the valley consists mainly of silty and sandy loams with a thickness of 1.0-4.5 m. These are low permeability formations. The second aquifer in the Quaternary formations is related to Cretaceous rock eluviums dominated by a silt fraction which forms an insulating, non-water-bearing layer for the Quaternary stage. Conditions favourable to water flow may appear in the weathered sandstone zones and the lower edge zones. In such conditions, water penetrates into deeper layers, supplying the fissure water levels in upper Cretaceous rocks. Aquifers determined within the upper Cretaceous aquiferous stage are related to the shallowest water-logged pore-fissure and fissure horizons in upper Cretaceous sedimentary formations, mainly marls, mudstones and sandstones. Deeper aquifers of fissure waters are located at a depth of over 50.0 m in fine-grained sandstone inserts. It stems from the Report that a characteristic feature of the rock substrate zone is tectonic and weathering engagement which has led to the formation of fissures and cracks. The Report also indicates that in most boreholes, water was determined at a depth of 4.0 to over 22.0 m. In that zone, marls, mudstones and claystones are usually cracked. The second water-logged zone was determined in boreholes at a depth of approx. 26.0 m in cracked sandstones. The Cretaceous aquifer is supplied on Cretaceous formation outcrops, directly via infiltration of rain water and meltwater as well as through a Quaternary eluvial and alluvial layer. In the designed reservoir area, one can observe hydraulic contact of the Quaternary aquifer with the upper aquifer of the Cretaceous stage.
The most important factor influencing the environmental changes in the surroundings of a flood control reservoir is the reservoir type. The designed "Boboszów" reservoir shall be a dry one, filled with water only for a short time and, in addition, only in the periods of bigger freshets. The most intensive reservoir operation shall take place only in summer. The assessment presented in the Report indicates lack of a significant impact for flood waters with a probability of occurrence smaller than p=10%, i.e. rarer than once every 10 years, because the reservoir shall not store flood waters. The impact on groundwater shall be limited, periodic and short-term. At that time, the reservoir shall be filled to a maximum level of 2.7 m for approx. 7-8 hours. Significant damming of water in the reservoir which may influence groundwater shall take place during flood flows with the probability of occurrence equalling p=l%, i.e. once in 100 years. At that time, the water in the reservoir shall reach a maximum level of 9.2 m for approx. 31.4 h and for the maximum water damming in the reservoir

(approx. 14.0 m), and shall occur during the flow of flood waters with the probability of occurrence of once in 500 years (p=0.2%). Thus, surface water damming shall be a periodic and short-term phenomenon. The influence of water damming manifests itself mainly in elevating the groundwater drainage base in the reservoir basin area. At that time, the hydrogeological conditions in the immediate vicinity of the reservoir may change. Such changes include: groundwater table location change, decrease of the hydrodynamic gradient of waters drained by the watercourse and creation of a new hydrodynamic situation in the aquifer around the dam. In the remaining period, the reservoir dam shall pass low and medium levels as well as a part of high levels without changing the flow size. As a result of water damming in the reservoir, the water table elevation increases. The groundwater flow directions (presently towards the Nysa Kłodzka River) change for each layer and after dam construction and water damming, a part of groundwater shall flow around the dam and the flow speed in the immediate vicinity of the dam shall increase. Artificial blocking of groundwater, caused by dam construction, shall force groundwater drainage under the dam, through a layer of cracked upper Cretaceous formations. The impact related to the reduction of water flow through the dam body shall be limited mainly to the layer where that exchange is possible. The dam shall not exert any influence whatsoever on the depletion of water resources because the aquifer remains supplied first and foremost via infiltration of rain water.

One can assume that the hydrodynamic system of waters in the first aquifer shall change in the reservoir area only in the periods of freshets occurring once in 100 years and rarer, as a result of damming the waters of the Nysa Kłodzka River. However, due to the probability of occurrence of such situations and the flood water retention time in the reservoir (maximally approx. 48 h), the changes to groundwater flow dynamics taking place in the reservoir area shall be short-term and insignificant to the BGW amount beyond the designed facility. Thus, one can state that the influence of flood water damming in the reservoir on groundwater is not permanent and is limited in time, and thus poses no hazard to the quality of those waters. Moreover, it must be highlighted that the overburden deposited in the reservoir basin is first and foremost cohesive soils (77.4%). If they are retained in the location of their deposition, they shall ensure reservoir basin tightness.

Therefore, one can assume that the undertaking should not influence the chemical status or the quantitative status of the BGW, so it shall not contribute to a failure to achieve the environmental objectives defined for that BGW.

The discussed undertaking has not been included in the draft Odra river basin district river basin management plan. The investment influence on environmental objectives was assessed and included in a document passed at the session of the Council of Ministers on August 26th, 2014, entitled: "MasterPlans", in Annex No. 2, on List No. 1: "Investments which do not have a negative influence on achieving a good water status and do not deteriorate water status". Since the undertaking has not been included in the draft ORBD RBMP, one can assume that, as a result of the previous assessment, it was considered as a project which does not cause changes in physical characteristics of bodies of water.

The closest acoustically protected facilities in the dam vicinity are homestead residential buildings in Boboszów village. Those are two farms located within the distance of approx. 300 m and 280 m respectively (approx. 240 m and 220 m from the dam body). The sources of noise at the investment implementation stage shall be the work of heavy equipment, construction works and transportation. The noise emission shall be mainly related to dam construction. The construction of that facility shall be executed in a continuous manner (subject to the hours and deadlines specified in clause I.2.1 and I.2.6), so machinery work and soil delivery and disposal shall also take place in a continuous manner. The remaining earthworks, construction works and demolition works shall be performed in various locations and at different times. Thus, noise emission in the individual locations of the designed undertaking area (except the dam construction location) shall be local and short-term. Construction works and earthworks shall be performed only in the daytime. All machines except cranes shall work at the ground level, so noise suppression by the soil shall significantly influence noise propagation. Land configuration shall be a significant element limiting noise propagation from the dam construction area. The works shall be performed in a river valley the slopes of which on both sides on

the river bed shall constitute natural acoustic barriers limiting noise distribution. Numerous forest complexes in the dam construction area shall also constitute a kind of natural barriers limiting noise propagation.
The dam and its operation do not pose a hazard to the acoustic climate because they are not sources of noise. The only noise emission source may be the functioning of their related facilities such as roads. The implemented access roads shall not be burdened with traffic, so the acoustic climate outside of the works implementation period shall not deteriorate.
Disruptions related to pollutant emission may occur during undertaking implementation. The possible emission shall be local and limited in time to the period of construction works. Emission of vehicle exhaust fumes and dust may occur both at the construction site as well as access roads leading to the area designated for construction. Emission of gaseous contaminants by means of transport shall be mainly limited to the construction site, the backyard and access roads. Delivery and assembly of elements shall be performed using heavy transport as well as construction works machinery and devices. In the opinion of the body, taking into account the scope and type of works (typical construction and assembly works), one can state that the associated emissions shall not cause a permanent, significant impact in the areas within their impact reach. During the construction works, fugitive dust emission may appear, caused by earthworks and vehicular transport (dust emission from the surface of access roads). Dam operation shall not constitute a source of pollutant emission into the air.
For the landscape, the undertaking implementation period is associated with changes in the local landscape structure. The appearance and moving of heavy vehicles, the occurrence of portable construction facilities or the erection of individual structures might be seen as directly negative in the visual sense. However, this impact is limited to the investment implementation stage and the area shall be cleared following the completion of works.
Artificial water reservoirs created as a result of damming the river valley by a hydraulic structure may influence the river valley landscape change. The designed reservoir is a dry structure, and the dam under normal operating conditions shall be visible both from the reservoir basin side as well as the downstream side. However, the earth-fill dam with gently inclined slopes, covered with topsoil and sown with a mixture of grasses, presents the smallest interference in the surrounding area, naturally blending into the valley sides.
In the villages located in the vicinity of the designed undertaking, there are two monuments entered in the register of monuments kept by the Lower Silesian Heritage Conservator. They are: St. Anne's church of 1811 in Boboszów, located approx. 1.0 km south of the designed investment, and St. Michael the Archangel church, a wooden church of 1710 with baroque features, located in Kamieńczyk, less than 4.0 km west of the designed investment. No negative impact on or hazards to any of the two abovementioned monuments shall take place during the stages of undertaking construction, operation and liquidation. Within the boundaries of the "K" cultural landscape protection zone and within the boundaries of the archaeological observation ("AO") zone in Boboszów village, it is designed to construct a new Nysa Kłodzka river bed downstream, regulate the river bed, demolish the existing asphalt municipality road, demolish the buildings colliding with the designed works and perform earthworks related to terrain levelling. Within the boundaries of the "K" cultural landscape protection zone in Pisary village, it is anticipated only to demolish the existing asphalt municipality road and construct a new road as part of separate proceedings. That zone shall include the northern edge of the designed reservoir basin intended for temporary storage of flood waters. However, since the anticipated flooding of that area shall be short-term (several days) and take place once in 100 years (the southern part) or once in 500 years (the northern part), the impact of the designed undertaking on the "K" cultural landscape protection zone in Pisary village can be considered as slight.
Since the earthworks shall be performed within the boundaries of the "K" cultural landscape protection zones in Boboszów and Pisary and the archaeological observation ("AO") zone in Boboszów, in accordance with and based on the arrangements contained in the Act of July 23rd, 2003 *on the protection of and care for monuments* (Journal of Laws of 2014, item 1446) and the Regulation

of the Minister of Culture and National Heritage of July 27th, 2011 *on performing conservation, restoration and construction works, conservation and architectural research and other activities concerning monuments entered in the register of monuments as well as archaeological research* (Journal of Laws No. 165, item 987), the works shall be performed with the consent and under the supervision of the relevant heritage conservator.
The body reckons that obtaining an opinion of the heritage conservator is a sufficient guarantee that appropriate actions shall be taken during the performance of works in the area of monuments and archaeological sites.
The Report also presents a cumulative environmental impact assessment of the "Boboszów" dry flood control reservoir and the "Roztoki Bystrzyckie" dry flood control reservoir designed within the scope of a separate investment. That reservoir shall be located downstream of the "Boboszów" reservoir on the Goworówka River – a right-hand side tributary of the Nysa Kłodzka River. The "Boboszów" dry flood control reservoir is less than 13.0 km away along the course of Nysa Kłodzka from the designed "Roztoki Bystrzyckie" dry flood control reservoir. During the construction phase of the "Boboszów" reservoir and the "Roztoki Bystrzyckie" reservoir, the cumulative impact on particular land and aquatic animal groups shall not be significant and shall be independent of one another, which shall be associated with both the distance and the local character of these investments. The reservoirs shall reduce flood waves with catastrophic flows. The designed reservoirs shall not affect the hydrological regime of the Nysa Kłodzka River for floods significant from the environmental point of view, i.e. with the probability of occurrence of once every 10 years and more often. The area downstream of the "Boboszów" reservoir to the estuary of Różana, along the Nysa Kłodzka river bed, features plant communities dependent on periodic flooding, including riparian habitats together with the animals living there, related to flooding areas during periodic freshets. The status of those habitats was assessed as unfavourable bad or unfavourable inadequate. Those swathes are presently subject only to sporadic flooding during high water levels or are influenced by the high groundwater level. A change to the regime of periodic flooding in the Nysa Kłodzka Valley caused by the operation of the two designed dry flood control reservoirs should not have a significant impact on the conservation status of habitats on the discussed river section. The reservoirs shall reduce floods with the probability of occurrence of once every 10 years and rarer. At that time, the reservoirs shall release water in an amount significantly exceeding the average great flows. Thus, the volume of the water released from the reservoir shall be relatively big and may locally overflow the banks of the Nysa Kłodzka river bed on the discussed section from Boboszów to the estuary of Różana. Therefore, one should assume that the operation of "Boboszów" and "Roztoki Bystrzyckie" reservoirs shall most probably contribute only in a limited, insignificant manner to an impoverishment of natural habitats, including the riparian forests, along the Nysa Kłodzka river bed together with the animals living there.
The designed "Boboszów" reservoir shall control the highest part of the Nysa Kłodzka River catchment area. The Międzylesie Forest District undertook actions aiming at increasing the holding capacity of mountainous areas, protecting slopes against excessive surface runoff and guaranteeing the maintenance of an appropriate technical state of the existing hydraulic infrastructure. The works predominantly entailed slowing down and reducing the sudden flow of waters in mountain streams and the surface runoff. They resulted in the creation of i.a. ponds, flood storage reservoirs, wetlands and flooding areas. The flood storage reservoirs within the Międzylesie Forest District are located outside of the Nysa Kłodzka catchment area, which shall be controlled by the designed "Boboszów" reservoir. Thus, it was assumed that the impacts of those facilities and the impact of the "Boboszów" dry reservoir would not accumulate.
It is designed to construct the dam and the "Boboszów" dry flood control reservoir in the upper course of the Nysa Kłodzka River, in the area of Boboszów, approx. 2.5 km west (a straight line distance) of the state border of Poland and the Czech Republic, which is a drainage divide separating the catchment areas of the Baltic Sea and the North Sea. During the construction stage, impacts such as emission of pollutants into the air or noise emission shall not affect the air quality or the acoustic climate in the areas located in the Czech Republic. Plant and animal population losses related to

undertaking construction shall be local and insignificant, and shall not influence the population status of those plant and animal species on the other side of the border, i.e. in the Czech Republic. During the undertaking operation stage, the river shall flow freely through the reservoir basin and the sluice device of the dam, apart from short periods of more significant freshets and floods, when the flow in the river shall exceed the sluice device capacity. The operation principle for dry flood control reservoirs entails capturing major volumes of flood waves in the reservoir basin to reduce freshet waves and, consequently, to limit the destruction of the environment and nature in the Nysa Kłodzka Valley downstream of the reservoir. Operation of the reservoir in a "dry" state as well as during the accommodation of a flood wave (a short residence time of the river waters) shall not affect the environment outside of Poland. Furthermore, the Nysa Kłodzka River, starting at the designed reservoir, flows north, which is an opposite direction to the course of the state border with the Czech Republic, so changes in river water flows shall not cause any cross-border impacts originating in Poland and affecting the environment in the Czech Republic. Moreover, taking land configuration into account, one should highlight that the project shall be implemented below the abovementioned drainage divide, so no waters can flow towards the neighbouring country.
Based on the submitted documentation taking into account the impact assessment as well as potential environmental hazards associated with the implementation and operation of the investment and indicating a number of necessary actions in order to secure and minimise the potential negative impacts, the body decided to impose conditions on undertaking implementation, which are listed in the sentence of this decision.
The conditions in clause I.2.1 and I.2.6 should limit the investment impact on birds at the construction works performance stage. Due to the presence in the designed undertaking area and its immediate vicinity of birds listed in Annex I to *Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (consolidated version)* (OJ EU L 10.20.7) and birds subject to strict protection under the *Regulation of the Minister of the Environment of October 6th, 2014 on protection of animal species* (Journal of Laws of 2014, item 1348) (i.e. Black stork *Cicionia nigra*, European honey buzzard *Pernis apivorus*, Kingfisher *Alcedo atthis*, Black woodpecker *Dryocopus martius* and Red-backed shrike *Lanius collurio*), earthworks and construction and assembly works related to this undertaking should not, in the ornithologists' opinion, be performed during the breeding season of those birds, i.e. from March 15th to August 15th, but stopping the works related to investment construction in this period collides with the necessity for maintaining the continuity of works related to dam construction and entails a significant (even twofold) prolongation of the investment implementation time and consequently the time of construction stage impact on animals. In the light of the above, it was assumed that year-round dam construction would be a better solution, subject to the condition that it would commence before the breeding season of birds – in such case, birds coming back from their wintering grounds (i.a. Black stork, European honey buzzard and Red-backed shrike) would find the investment in progress and have time to find new nesting locations.
The tree and shrub removal time specified in clause I.2.2 stems from the necessity for minimising the negative impact of the undertaking in question on vertebrate species (especially birds and bats) during their breeding period and growth of the youth as well as on invertebrates. In addition, the tree and shrub removal scope is limited exclusively to the indicated locations colliding with investment implementation in order to preserve swathes of natural habitats and habitats of protected animal species present in the investment implementation area.
The condition in clause I.2.3 was imposed to reduce the destroyed surface area of the priority natural habitat: *9180 – Tilio-Acerion forests of slopes, screes and ravines *Tilio plathyphyllis-Acerion pseudoplatani*, listed in Annex I to *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora* (OJ EU L.92.206.7, OJ EU-sp.15-2-102 as amended). This objective is also supported by the condition in clause I.2.21 concerning the limitation of regulation works in the river bed. Approx. 0.19 ha of this habitat is estimated to be partially destroyed during the construction stage in connection with the removal of trees from the area anticipated for dam construction. Therefore, this destruction shall not have a significant influence on the surface and

conservation status of the habitat in the region.
The condition in clause I.2.4 was imposed to preserve the swathes of habitat *9IE0 – riparian mixed forests of willow, poplar, alder and ash tree *Salicetum albae, Populetum albae, Alnenion glutinoso-incanae* as well as alder forests on percolating mires, listed in Annex I to the abovementioned *Directive*, as well as the living and feeding grounds of Kingfisher *Alcedo atthis* – a bird species listed in the *Regulation of the Minister of the Environment of October 6th, 2014 on protection of animal species.* Only a certain part of protected habitat *91E0 shall be destroyed during the construction stage of the designed undertaking as a result of a complete removal of trees in the designed dam area and trees on the river slopes upstream and downstream of the dam as well as a local removal of trees colliding with the investment next to the river bed. The destruction shall cover approx. 1/4 (approx. 0.39 ha) of the inventoried surface area of the entire habitat swathe, the conservation status of which is unfavourable bad. This damage shall not be significant to that habitat in the designed undertaking area or the entire region.
The detailed principles of removing trees with the circumference at breast height exceeding 40 cm and of building demolition, defined in clause I.2.5, were imposed to prevent accidental killing of bats that may spend the winter in building cracks and tree hollows. If building demolition is not possible within that deadline, a chiropterologist shall check the buildings in terms of bat presence before the demolition. If bat presence is determined, the demolition should proceed after making sure that the bats have left the refuge (after another inspection).
The conditions defined in clause I.2.7-I.2.10 aim at limiting the influence of construction works related to regulation works in the river bed and on the river slopes on the aquatic organisms living in the Nysa Kłodzka River waters, especially Bullhead *Cottus gobio* and Siberian bullhead *Cottus poecilopus* – fish species subject to partial protection under the *Regulation of the Minister of the Environment of October 6th, 2014 on protection of animal species* (Journal of Laws of 2014, item 1348). The indicated manners and deadlines of works implementation in the river bed exclude the investment influence on the abovementioned species during their spawning and fry hatching periods. They also aim at preventing a significant influence of the investment on the population of Bullhead *Cottus gobio*, which constitutes a subject of protection of "Bialskie Mountains and Śnieżnik Group" Natura 2000 site (code: PLH020016), as an over 5 km long section of the Nysa Kłodzka River with percolating mires is located within the boundaries of that area. The ichthyological inventory conducted using the electroresistance examination method did not determine the presence of Brook lamprey *Lampetra planeri* (a species which also constitutes a subject of protection of the abovementioned Natura 2000 site) in the Nysa Kłodzka River waters on the section from Pisary to Boboszów, but it did determine the presence of a population of Brown trout *Salma trutta fario* – a species which is not subject to legal protection, but constitutes a significant component of waters in the scope of fishing management (hence the introduction of a recommendation to limit the works in the river bed during the breeding period of that species, i.e. from September to February (incl.)). The indicated conditions of works performance also aim at limiting the formation of suspensions in the form of disturbed deposits from the bottom and soil from the slopes. Most works shall be performed with the use of cofferdams, but it is allowed to perform bank protection works on a short river section with water flowing in the river bed without cofferdams, assuming that cold, oxygen-rich, fast-flowing water of submontane watercourses shall prevent the suspensions which penetrate into the water during the performance of works from exerting a significant influence on aquatic organisms downstream of the performed works.
The condition in clause I.2.11 aims at preserving the surroundings of the nesting place of one pair of Black stork *Cicionia nigra* – a bird species subject to strict protection and requiring active protection by delineating protection zones of sanctuaries, breeding places and places of regular presence under the *Regulation of the Minister of the Environment on protection of animal species.*
The conditions in clause I.2.12-I.2.13 were imposed due to significant landscape values and natural values of the Nysa Kłodzka River Valley in order to restore to the extent possible the pre-project status of the area covered by the works.
The conditions in clause I.2.14-I.2.16 concerning the collection and application of a topsoil layer

observe the provisions of Article 75 of the *Environmental Protection Law of April 27th, 2001* (Journal of Laws of 2013, item 1232 as amended). They shall also support reinstatement of the land degraded as a result of investment implementation. Appropriate agricultural practices and plants selected for sowing shall counteract excessive expansion of geographically foreign species (including Sosnowsky's hogweed *Heracleum Sosnowski*, which was determined in the area, and potentially also Himalayan balsam *Impatiens glandulifera* and other ones) as well as ecologically foreign (ruderal) species.

The conditions defined in clause I.2.17-I.2.20 observe the provisions of Article 82 of the *Environmental Protection Act of April 16th, 2004.* They aim at protecting tall greenery, especially by minimising the risk of damaging tree boughs, trunks and roots, as well as at preventing excessive compaction of soil in the immediate vicinity of the trees and reduction of soil aeration within the root systems during the performance of earthworks and other works related to the use of heavy mechanical equipment.

The condition defined in clause I.2.22 was imposed to minimise the killing of small animals (especially reptiles and amphibians) which may fall into the excavations created at the construction stage as well as to ensure bringing them back to habitats appropriate for their species. The participation of a herpetology specialist in catching hazardous animals aims at preventing hazard to human life and health.

The earth surface protection (together with soil and relief) consists in preventing and counteracting its unfavourable changes (degradation, devastation) as well as in restoring their appropriate status in case of damage or destruction. One factor causing geomechanical transformations of the earth surface which leads to its degradation is the movement of heavy equipment (cars, cranes, machines) and stacking the structural elements directly on the ground surface. Pressing the soil down by heavy equipment increases its density, which reduces the spaces between soil particles, making the soil partially or completely lose its absorption properties. Therefore, the construction site backyard and all access roads to be used by machines and cars should be paved with concrete road slabs on a subcrust layer. Meeting the conditions defined in clause I.2.23-I.2.25 shall contribute to minimising the negative impact of works performed during the construction stage of the undertaking on the soil environment.

The impact on the soil-aquatic environment during the performance of construction works may be associated with penetration of contaminants, including petroleum derivatives. As a result of the construction site backyard operation, sanitary waste-water shall be generated and collected in portable sanitary devices and holding tanks. In order to protect the soil-aquatic environment and exclude the possibility of contaminant penetration (in particular petroleum derivatives) to the aquatic environment and to the soil, the conditions defined in clause I.2.26-I.2.31 were imposed.

The works related to reservoir construction may cause instances of short-term, transient lowering of the groundwater table due to the necessity for performing the necessary drainage during the earthworks and the construction works. Therefore, to protect the qualitative and quantitative status of groundwater, the body imposed the condition defined in clause I.2.32.

The conditions in clause I.2.33-I.2.34 were imposed to limit the tiresomeness in the scope of the undertaking influence on the acoustic climate and pollution emission to the atmospheric air.

The conditions listed in clause I.2.35 -I.2.36 were imposed to ensure appropriate management of waste generated at the investment implementation stage.

The condition in clause I.3.1, defining the methods and deadlines for managing the meadows within the reservoir basin, shall enable one to maintain and restore the habitats of invertebrates, especially a protected butterfly species – Large copper *Lycaena dispar*, listed in Annex No. II to the *Habitats Directive* and in the *Regulation of the Minister of the Environment of October 6th, 2014 on protection of animal species.*

Since it was determined that the designed undertaking area was the place of presence of at least five bat species protected under the *Regulation of the Minister of the Environment of October 6th, 2014 on protection of animal species:* Natterer's bat *Myotis nattereri*, Daubenton's bat *Myotis daubentonii*, Serotine/Northern bat *Eptesicus serotinus/nilssonii*, Greater mouse-eared bat *Myotis myotis* and

Barbastelle *Barbastella barbastellus* (the latter two are also listed in Annex No. II to the *Habitats Directive*), it was decided to impose the condition contained in clause I.3.2, defining the type of installed lighting and its use principles (because dam lighting may disturb the normal functioning of insects and consequently also bat feeding).
Under Article 75 Par. 3 of the *Environmental Protection Law*, the Investor is obliged to take actions aimed at repairing the damage caused, so the following conditions of environmental compensation performance were defined. This is not environmental compensation as defined by Article 35 of the *Environmental Protection Act.*
The condition indicated in clause I.3 was imposed to eliminate the possibility of contaminant penetration to the soil-aquatic environment.
The necessity indicated in clause I.3.4 concerning the maintenance of the minimum acceptable flow aims to:

- minimise unfavourable changes to biological processes in the river downstream of the dam,
- maintain a quantity of water in the river ensuring protection of biological balance.

The condition in clause I.4.1 was imposed due to the identified occurrence of the tectonic dislocation phenomenon and the resistance of the earth-fill dam to orogenic movements. Moreover, an earth-fill dam with gently inclined slopes, covered with topsoil and sown with a mixture of grasses, presents the smallest interference in the surrounding area, naturally blending into the valley sides.
The quantity of water flowing in the river bed and the flow conditions are variable, causing a flooding risk for the areas and facilities located in the valley. The new structure shall not require human operation, which shall increase safety and eliminate the risk of human error during the operation. The condition imposed in clause I.4.2 minimises the possibility of a breakdown and permits emergency adjustment in the case of a breakdown.
The channel width adopted in clause I.4.3, referred to as the "tunnel opening", corresponds to the width of the Nysa Kłodzka river bed on the section covered by the investment. Such solution shall make it possible to shape a bed in the channel which shall be similar to the natural one and thus to ensure correct conditions for the migration of fish living in the river.
Since the artificial river section shall function for approx. 1 year, its morphological features should resemble the natural ones as much as possible. Reinforcing the slopes and the bottom with rip-rap shall prevent breaking the hydraulic connectivity of the river with groundwater. Thus, the body decided to impose the condition defined in clause I.4.4. After constructing the facilities related to tunnel functioning, the 145.0 m long temporary river section shall be backfilled.
Maintenance of the regulated bed width upstream and downstream (close to the present width of the natural bed) referred to in clause I.4.5 shall ensure water flow similar to that in the original river bed.
The section adopted in clause I.4.6 shall resemble the natural bed shape and ensure free flow of water corresponding to permitted flow Q 10% = 13.9 m.
Due to the destruction of nesting places of White-throated dipper *Cinclus cinclus* – a bird species listed in the abovementioned *Regulation of the Minister of the Environment*, clause II.1.1 imposed the obligation to perform alternative nesting places, i.e. 3 boxes appropriate for that bird species. In connection with the loss of potential bat refuges, the environmental compensation recommended in the condition of clause II.1.2 includes hanging and then maintenance of 42 boxes for bats.
The removal of trees and shrubs shall be measurable damage to the environment in connection with the designed undertaking. It was limited as much as possible, i.e. to approx. 1087 dendrological objects colliding with investment implementation (since the groups of trees and shrubs counted as single dendrological objects during the dendrological inventory actually included a few to a dozen specimens each, the real number of inventoried trees and shrubs anticipated for removal is much bigger and reaches approx. 1500 trees and approx. 150 shrubs). To ensure environmental compensation for the abovementioned loss of natural elements, the conditions in clause II.1.3-II.1.7 impose an obligation to perform new tree and shrub covers in the area and the surroundings of the designed undertaking, on the grounds owned by the Investor. "3 times x" conversion factors and a 3 x 3 m spacing pattern were applied for tree and shrub planting.

The removal of trees and shrubs shall include a part of the priority natural habitat: 91E0* – riparian mixed forests of willow, poplar, alder and ash tree *Salicetum albae, Populetum albae, Alnenion glutinoso-incanae* as well as alder forests on percolating mires (it covers approx. 2.87 ha within the boundaries of the designed undertaking; the designed removal at the construction stage shall cover approx. 0.47 ha, i.e. approx. 16%). To compensate for the tree removal within the abovementioned habitat, the condition in clause II.1.3 imposes an obligation to plant trees and shrubs along both banks of the Nysa Kłodzka River. Taking into account the abovementioned conversion factors and spacing pattern, the compensation planting should include approx. 4500 trees and 450 shrubs, which yields a surface area of approx. 4.1 ha (the shrubs shall be planted among the trees, so no additional surface area was calculated for them). However, due to the existing terrain capacity, i.e. the available areas appropriate for riparian forests in terms of habitat, it is possible to perform the planting only on two areas of 0.1 ha and 0.45 ha respectively (total: 0.55 ha) on both river banks.
In addition, according to the wording of the condition in clause II.1.4 and II.1.5, trees and shrubs shall be planted on both slopes of the Nysa Kłodzka River Valley (as an expansion of the existing forest areas) and along the new section of the Boboszów-Pisary municipality road. They shall make up for the difference between the number of trees and shrubs recommended as the compensation planting and those actually possible to be planted in that habitat. They shall also constitute a compensation for the removal of approx. 0.7 ha of the remaining forest complexes and single tree specimens colliding with the investment. That compensation shall cover a total surface area of at least 5.5 ha and shall be performed as an expansion of the existing tree stand areas.
Since a part of the forest area anticipated for removal (approx. 0.2 ha) is occupied by the swathe of natural habitat *9180 – Tilio-Acerion forests of slopes, screes and ravines *Tilio platyphyllis-Acerion pseudoplatani*, the condition in clause II.1.6 imposes an environmental compensation obligation consisting in the restoration of a slope forest (*9180) swathe in another location (applying a "5 times x" conversion factor because this is a priority habitat of significant ecological importance) on a surface area of at least 1.0 ha.
In order to ensure a proper selection of the planting location and tree and shrub species depending on the habitat properties of the area, the condition in clause II.1.7 indicates the necessity for developing a detailed planting design with the participation of specialists. It also defines the planting deadlines and the necessity for protecting the saplings against animals as well as recommends supervision over the new tree stands which aims at performing the necessary management activities ensuring their growth and maintenance at the right time. It stems from the content of the Report that after investment completion, provided that the arrangements with the Międzylesie Forest District are implemented, the Investor shall hand over the ground with the tree stands to that entity; otherwise, the Investor shall commission that entity to perform long-term supervision.
The designed tree and shrub planting along the banks of the Nysa Kłodzka River, with the species composition corresponding to that of riparian forests, shall not only compensate for the damage made to the environment by planting tree covers in the investment area, but also constitute the compensation for the destroyed places of living and feeding grounds of Kingfisher *Alcedo atthis* as well as enable maintenance, restoration or improvement (within approx. ten years of the planting time) of the functioning of local migration corridors and feeding grounds of bats.
The obligation to monitor the stability of the earth-fill structure, groundwater and surface waters referred to in the Report stems from the currently binding legal regulation and aims to monitor the technical state of the structure from the start of the construction works.
Under § 119 of the Regulation of the Minister of the Environment of April 20th, 2007 on technical conditions for hydraulic structures and their location (Journal of Laws No. 86, item 579), hydraulic structures are equipped as required with instrumentation enabling observation and measurement of:

1) movement and deformation of the hydraulic structure, its substrate and the adjacent area;
2) stresses in the hydraulic structure;
3) levels and pressures of groundwater and filtration processes occurring in the hydraulic structure, its substrate and heads;
4) headwater and tailwater levels, as well as water levels in the main tributaries;

5) changes to the bottom and banks;
6) ice phenomena;
7) meteorological phenomena.

Thus, the applicant, in order to ensure the dam safety control as required by the regulations, shall perform control-measurement sections equipped with surface benchmarks, deep slab benchmarks (earth benchmarks, benchmarks on concrete structures) and observation piezometers in the dam body. The dam shall be equipped with instrumentation to conduct the following: monitoring of vertical movement (subsidence) of the dam substrate and body and the discharge devices, measurement of filtration pressure under the dam body, measurement of the volume of any waters filtering through the dam body and measurement of the water table level in the reservoir basin and water levels at the downstream Nysa Kłodzka River station. According to the regulation by the Minister of the Environment of August 17th, 2006 *on the scope of water management instructions* (Journal of Laws No. 150, item 1087), a list of measurement devices associated with water management located on the water structure as well as the principles of performing observations and measurements shall be defined in the water management instruction. The regulation also defines the notification procedure concerning the occurrence of consequences of dangerous incidents at the water structure. A water study and a water management instruction is necessary to obtain a water permit for special use of surface waters via damming structures. The water management instruction draft is approved by the relevant body issuing the water permit. Thus, the body did not introduce into this decision the provisions pertaining to the principles of observation, measurements and monitoring of the groundwater table and earth-fill structure stability or monitoring the state of dam substrate and structure concerning the possibility of leaks of waters held in the reservoir during the period of freshets, as the obligation to perform these observations stems from the binding legal regulation, and the responsibility in this scope lies with the body issuing the water permit.

The conditions in clause II.2.1-II.2.3 aim to control the effectiveness of the proposed actions which minimise and compensate for the negative impact on particular elements of the natural environment related to investment implementation and operation, especially the conservation and restoration status of natural habitats: 91E0 riparian mixed forests (clause II.2.1) and *9180 Tilio-Acerion forests of slopes, screes and ravines, as well as the migration possibility of fish and other aquatic organisms. The condition in clause II.2.4 was imposed in order for the present body issuing the decision to obtain information on the scope and manner of performing the measures and to obtain a confirmation of a relevant specialist's participation in the implementation of the provisions contained in the clause, which should ensure appropriate protection of natural habitats as well as plant and animal species. The specialists' participation and the results of conducted monitoring procedures shall supplement the documentation and, if necessary, constitute the basis for modifying the imposed minimising and compensation measures.

In the opinion of this body, taking into account the conditions defined in Article 82 Par. 2 of the EPA Act, the data on the undertaking possessed at the time of issuing the decision on the environmental conditions make it possible to exhaustively assess the environmental impact of the undertaking and there is no need to perform an Environmental Impact Assessment of the undertaking within the scope of the proceedings to issue the decision as referred to in Article 72 Par. 1 of the EPA Act. They made it possible to exhaustively and comprehensively assess its environmental impact, including the cumulative impact of other undertakings, and define the undertaking implementation conditions. The assessment reveals no significant accumulations of negative impacts. The planned undertaking is located outside the boundaries of protected areas referred to in Article 6 of the *Environmental Protection Act*, including outside of Natura 2000 sites. The proceedings underway for the undertaking in question analysed the possibility of occurrence of a potential impact of the planned undertaking on areas requiring special protection due to the occurrence of plant and animal species and their habitats or natural habitats subject to protection, including Natura 2000 sites as well other nature protection forms. The collected evidence made it possible to assess all potential impacts of the undertaking on the environment, including Natura 2000 sites, assess the significance of the impacts, propose adequate minimising measures and propose alternative solutions within the scope of the

measures compensating for the negative impacts which equally well minimise the impact of the undertaking on the environment. Therefore, in the opinion of the present body, the data on the undertaking possessed at the time of issuing the decision on the environmental conditions make it possible to exhaustively assess the environmental impact of the undertaking, so, under clause III of the present decision, the body did not impose an obligation to perform an Environmental Impact Assessment of the undertaking within the scope of the proceedings to issue the decision as referred to in Article 72 Par. 1 of the EPA Act.

During the proceedings on issuing the decision in question, the environmental protection body allowed all evidence which might have contributed to a correct determination on the merits of the case, and the determination was made on the basis of the entire evidence collected during the proceedings, by which fact the body met the requirements of Article 75 § 1 and Article 80 of the *Code of Administrative Procedure*.

In the light of the above, it was ruled as in the decision sentence.

Information

The parties may appeal against the decision to the General Director for Environmental Protection via the Regional Director for Environmental Protection in Wrocław within 14 days of the delivery date.

[two stamps of the Regional Director for Environmental Protection in Wrocław
Michał Jęcz /illegible signature/]

Recipients:

1. Tomasz Wróblewski
   "HYDROPROJEKT Wrocław" Sp. z o.o.
   ul. Wybrzeże Wyspiańskiego 39, 50-370 Wrocław
2. The parties to the proceedings via an announcement, under Article 49 of the CAP
3. File.

REGIONAL DIRECTORATE
FOR ENVIRONMENTAL PROTECTION IN WROCŁAW
50-153 Wrocław, pl. Powstańców Warszawy 1
tel.: 71 340 68 07, fax: 71 340 68 06
NIP [tax ID No.]: 897-17-47-119

Annex to the decision of the Regional Director for Environmental Protection in Wrocław of February 27th, 2015, ref. No.: WOOŚ.4233.8.2012.ŁCK.47 for the undertaking entitled: "Construction of "Boboszów" – a dry flood control reservoir on Nysa Kłodzka River"

1. Undertaking objective

The subject of the undertaking is the construction of "Boboszów" dry flood control reservoir on the Nysa Kłodzka River, with a maximum flooding area of 21.35 ha and a maximum volume of 1.418 M m^3. The reservoir shall be constructed in the uppermost parts of the Nysa Kłodzka River catchment area, where sudden freshets often occur. The reservoir dam shall cross the Nysa Kłodzka River Valley at chainage km 180+085 of the river, near Boboszów village, in Międzylesie Municipality.
The project and the environmental compensation shall be implemented on the following plots:

1) 69, 61/1, 61/2, 62, 65, 66/2, 68/1, 70/1, 78, 81/3, 81/6, 80, 64, 66/1, 66/3, 59, 67, 81/5, 77, 61/3, 63, 81/2, 33, 58, 216, 328, 32, 60, 53 AM1, Boboszów precinct,
2) 46 AM 1, Pisary precinct,
3) 293, 294, 298, 299, 306/4, 306/6, 306/8, 306/2, 306/3, 295, 296, 297, 292/2 AM 2, Pisary precinct.

A construction site backyard together with warehouses, a machinery and vehicle parking site, a fuel and oil storage site as well as staff and common use facilities shall be performed away from the reach of flood waters downstream of the dam, on the western side of Boboszów-Pisary municipality road, on the fragments of plots No. 33 and 58 AM 1, Boboszów precinct, and possibly also on the fragments of plots No. 53 and 50 AM 1, Boboszów precinct, within the boundaries of the area owned by the Investor.

2. Characterization

The designed dry flood control reservoir shall consist of an earth-fill dam and a reservoir basin. The relief devices are designed in the form of two independent systems: sluice devices and overfall devices. The river shall flow freely through the reservoir basin and the sluice device until the flow exceeds the sluice device capacity. At that moment, the water shall begin to fill the reservoir basin.
The construction works directly related to the designed undertaking shall include the construction of a reservoir basin and internal roads as well as regulation of the Nysa Kłodzka river bed upstream and downstream of the dam on an approx. 510 m long section, including an approx. 137 m long tunnel led under the dam body together with inlet and outlet devices. A construction site backyard and access roads shall be performed before the commencement of the construction stage.

3. Scope of works and basic technical parameters of the undertaking

3.1 The scope of works

The scope of relevant works includes:

- demolition of the buildings within the investment boundaries,
- demolition of technical installations of territorial development,
- demolition of a part of the existing municipality road,
- demolition of the existing bridges and replacing them with fords,
- construction of internal roads,
- demolition and relocation of low and medium voltage lines,
- clearing the area in the locations of the designed demolitions, local levelling and clearing, covering with topsoil and sowing with mixtures of grasses,
- removal (including stubbing) of trees and shrubs colliding with the designed works (subject to the reservations included in this decision),
- performance of compensation planting.

3.2 The dam

The dam, located at chainage km 180+085 of the Nysa Kłodzka River, with the crest at an elevation of 500.0 m AMSL and the maximum damming level at an elevation of 499.70 m AMSL, was designed as an earth-fill dam, which stems first and foremost from the identified occurrence of the tectonic dislocation phenomenon in the location area of that facility.

The following technical parameters of the dam body construction are designed:

- maximum dam height – 17.0 m,
- crest elevation – 500.0 m AMSL,
- crest width – 6.0 m,
- inclination of the upstream and downstream slope – 1:3 (a gentler slope inclination shall increase the dam body and thus also the safety of a structure founded on tectonic faults).

3.2 Relief devices

The relief devices are designed in the form of two independent systems: sluice devices and overfall devices.

The proposed sluice devices shall have the form of an 11.0 m wide reinforced concrete tunnel. There shall be an inlet on the headwater side and an end on the tailwater side in the form of a stilling basin. The sluice devices shall accommodate waters during normal reservoir operation as well as flood waters, which shall be passed through two openings located in the inlet structure wall. The tunnel is divided into three openings with a width of approx. 1 x 4.0 m and 2 x 1.7 m respectively. In normal conditions, the waters in the river bed shall flow through the opening with a width of approx. 4.0 m. Flood waters shall be passed through the channel with a width of approx. 4.0 m as well as one of the channels with a width of approx. 1.7 m. The sluice devices shall be equipped with gates in the form of valves with an electrical drive and an emergency manual drive. Two vertical reinforced concrete chimneys shall be built on the downstream section of the dam, facilitating sunlight access to the main part of the tunnel housing the river bed.

The sluice devices (the inlet, the tunnel and the stilling basin) shall be founded on reinforced concrete piles. All visible elements shall be finished with stone facing.

The overfall devices are designed in the form of a sloped overfall located along the right dam head. Flood waters shall be led to the downstream station via a stairway ending with a stilling basin. An overfall with a level difference is designed at the device inlet. The sloped overfall shall be connected with the Nysa Kłodzka river bed via an estuary section with a bottom width equal to that of the stairway and with 1:2 slope inclination. The estuary section bottom elevation shall be lifted approx. 0.5 m above the bottom in the location where it joins the bed so as to prevent the water flowing in the Nysa Kłodzka River from moving back to the overfall devices in normal conditions.

The overfall devices (the overfall, the transition section, the stairway and the stilling basin) shall be founded on reinforced concrete piles. All visible elements shall be finished with stone facing.

3.3 Regulation of the Nysa Kłodzka river bed

The works related to the Nysa Kłodzka river bed shall be performed on an approx. 530.0 m long river section (along the present course). In connection with the necessity for performing the tunnel (the sluices, which have to run along a straight line) under the dam body, the river shall be shortened by approx. 20.0 m – from approx. 530.0 m before works commencement to approx. 510.0 m after works completion. As part of those works, approx. 170.0 m of the present river bed shall be backfilled and a new, approx. 150.0 m long bed shall be built. The construction of relief devices requires temporary relocation of the Nysa Kłodzka river bed. An approx. 145.0 m long temporary river section shall be performed for the period of constructing the section in front of the tunnel inlet, the tunnel together with the outlets and the inlets as well as the section connecting the river bed with the tunnel. After constructing the abovementioned facilities related to tunnel functioning, the approx. 145.0 m long temporary river section shall be backfilled.

The works in the Nysa Kłodzka river bed include:

- construction of a tunnel led under the dam body, together with inlet and outlet devices, on an approx. 137.0 m long section (the tunnel length shall constitute approx. 85.0 m of that section),
- construction of a new river bed on an approx. 75.0 m long section to connect the tunnel outlet

with the existing bed. The bottom shall be protected with rip-rap. The right bank shall be a retaining wall and the left side shall be a slope protected with paving stone,

- regulation of the existing river bed upstream of the dam, on an approx. 110.0 m long section. In the upper part of that section with a length of approx. 70.0 m, the banks shall be adjusted and protected with rip-rap. In the lower part of that section with a length of approx. 40.0 m, the slopes and the bed bottom shall be protected with paving stone. A ford shall be performed on that section,
- regulation of the existing river bed downstream of the dam, on an approx. 188.0 m long section. On the upper section (according to the conditions defined in this decision), a retaining wall shall be performed on the right bank (the left bank borders on protected priority habitat *9180 – Tilio-Acerion forests of slopes, screes and ravines *(Tilio platyphyllis-Acerion pseudoplatani)*; the left bank and the bottom shall remain in their natural state. On the lower section, below the protected habitat, as far as to the bridge over national road No. 33, the left bank shall be protected with paving stone and the right bank shall be protected with a retaining wall (the outlet of the overfall devices shall be located there).

3.4 Development of the upstream and downstream stations

The scope of works at the upstream station shall include clearing the area after the works related to Nysa Kłodzka river bed relocation for the construction period as well as construction of an access road to the upstream station. Those works shall include slope adjustment, while the areas remaining after the earthworks shall be covered with topsoil and sown with mixtures of grasses.

At the downstream station, similarly to the works at the upstream station, it is designed to perform terrain levelling along the new Nysa Kłodzka River section and the section subject to regulation as well as to construct an access road to the downstream station.

3.5 Relocation of power line sections

Overhead low voltage (LV) lines with a total length of approx. 660.0 m run through the designed undertaking area. Those lines shall be disassembled. A new overhead low voltage (0.4 kV) line shall be led along the designed new section of Boboszów-Pisary municipality road on its north-western side, on an approx. 170.0 m long section.

An overhead medium voltage (MV) line with a total length of approx. 560.0 m runs along the western part of the designed basin area and through the designed reservoir dam area. That line shall be disassembled. A new overhead medium voltage (20 kV) line shall be led along the designed new section of Boboszów-Pisary municipality road (approx. from chainage km 0+170 to km 0+800) on its western side and then below the designed dam, on its south-western side, crossing the Nysa Kłodzka River approx. 70.0 km downstream of the designed tunnel estuary.

3.6 Internal roads

The construction of internal roads shall ensure communications for the designed dam and reservoir basin as well as access to the downstream and upstream stations and to the dam crest. All internal roads and manoeuvring sites shall have bituminous pavements. The roads shall be approx. 3.50 m wide and shall have approx. 0.75 m wide grass shoulders.

An approx. 510.0 m long internal road is designed to permit access to the upstream station of the dam. That road shall allow the maintenance and improvement teams to access the upstream station of the dam as well as enable the disposal of waste, wood mass and boulders with a diameter exceeding 40 cm, which shall be stopped by tunnel gratings and gathered at the upstream station in front of the tunnel grating.

An internal road connecting the downstream station and the reservoir crest with the new road section is designed to permit access to the downstream station and to the dam crest. The road leading to the dam crest shall be approx. 200.0 m long and the road leading to the downstream station of the dam shall be approx. 100.0 m long.

3.7 The utility building

The utility (backyard) building is designed to be constructed next to the downstream station location. It is designed as a one-storey building. It houses all the rooms necessary for it to fulfil the function of a reservoir backyard facility. It is divided into two functional zones. The first zone shall include office

space, staff areas and sanitary premises. The second zone shall include auxiliary, technical and storage rooms as well as a garage.

[two stamps of the Regional Director for Environmental Protection in Wrocław
Michał Jęcz /illegible signature/]