

**REGIONAL DIRECTOR FOR  
ENVIRONMENTAL PROTECTION  
IN CRACOW**

OO.4233.13.2012.BM

Cracow, October 29, 2012

**DECISION  
ON ENVIRONMENTAL CONDITIONS**

Based upon Article 104 and 107 (1) of the Act of June 14, 1960 Code of Administrative Procedure (OJ of 2002 no. 98, item 1071, as amended), Article 71 (2) item 2, Article 75 (1) item 1 letter a), Article 80 (1), and Article 85 (2) item 1 of the Law of October 3, 2008 on the access to information on the environment and its protection, public participation in environment protection and environmental impact assessments (OJ of 2008 no. 199, item 1227, as amended), and based upon Article 17 of the Act of July 8, 2010 on the special preparation rules for flood protection investments (OJ no. 143, item 963), as well as Article 2 (1) item 36 of the regulation of the Council of Ministers of November 9, 2010 on the investments which may significantly affect the environment (OJ of 2010 no. 213, item 1397, as amended),

**after considering**

the application of Mr. Piotr Radzicki – co-owner of “AdEko”, with its registered office at 35/4. Witosa Street in Cracow - acting in the name of the Investor, i.e. Małopolski Board of Amelioration and Water Structures in Cracow – dated 05/08/2012 on the issuance of a decision on environmental conditions for the contract titled:

1. **“Construction of a flood storage reservoir “Bieżanów” on the River Serafa at chainage km 7+284 in the City of Cracow”,**
2. **“Construction of a flood storage reservoir “Serafa - 2” on the River Serafa at chainage km 9+223 in the City of Cracow”,**
3. **“Construction of a flood storage reservoir “Malinówka - 1” on the Malinówka Stream at chainage km 0+220 in the City of Cracow”,**
4. **“Construction of a flood storage reservoir “Malinówka - 2” on the Malinówka Stream at chainage km 2+320 in the City of Cracow”,**
5. **“Construction of a flood storage reservoir “Malinówka - 3” on the Malinówka Stream at chainage km 3+017 in the City of Cracow and in the City of Wieliczka”;**

**after receiving an opinion of**

the State Provincial Sanitary Inspector in Cracow dated 09/04/2012 (reception date: 09/07/2012), ref. no.: NS.9022.4.449.2012,

**I hereby decide as follows:**

- I. **I establish environmental conditions for the contract titled:**
  1. **“Construction of a flood storage reservoir “Bieżanów” on the River Serafa at chainage km 7+284 in the City of Cracow”,**

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2. "Construction of a flood storage reservoir "Serafa - 2" on the River Serafa at chainage km 9+223 in the City of Cracow",
3. "Construction of a flood storage reservoir "Malinówka - 1" on the Malinówka Stream at chainage km 0+220 in the City of Cracow",
4. "Construction of a flood storage reservoir "Malinówka - 2" on the Malinówka Stream at chainage km 2+320 in the City of Cracow",
5. "Construction of a flood storage reservoir "Malinówka - 3" on the Malinówka Stream at chainage km 3+017 in the City of Cracow and in the City of Wieliczka";

and simultaneously:

1. I determine the:

**1.1 Type and place of contract implementation:**

The planned contract includes construction of a group of five flood storage reservoirs at the River Serafa (two reservoirs) and at the Malinówka Stream (three reservoirs), within the City of Cracow and the City of Wieliczka – with a total flood storage capacity of 430 000 m<sup>3</sup>. The total flood plain area for all of the reservoirs is 22.2 ha. Those reservoirs are to provide flood storage during floods (they would remain empty in the remaining time – dry polders) only.

**Location of the reservoirs:**

- **Bieżanów Reservoir at chainage km 7+284 (dam section)** – located within the City of Cracow at Drożdżowa, Bogucicka, Ślusarczyka Streets and at the Cracow-Wieliczka railway line.
- **Serafa 2 Reservoir at chainage km 9+223 (dam section)** – located within north boundaries of the City of Wieliczka. It covers a part of a deep valley of the Serafa River at the Bogucice Estate between Krakowska Street and railway tracks of the Cracow-Wieliczka railway line.
- **Malinówka 1 Reservoir at chainage km 0+220 (dam section)** – located at A-4 motorway and Mała Góra, Szastera, Nad Serafą Streets. On the west it reaches Wielicka Street, and on the east – developed areas west of the railway line crossed by Serafa and its tributary stream, Malinówka.
- **Malinówka 2 Reservoir at chainage km 2+320 (dam section)** – located at the boundary between the City of Cracow and the City of Wieliczka. It covers a part of the Malinówka Stream's valley on the western side of the Krzyszkowicki Forest, just upstream of the A-4 motorway.
- **Malinówka 3 Reservoir at chainage km 3+017 (dam section)** – located at the boundary between the City of Cracow and the City of Wieliczka. It covers a part of the Malinówka Stream's valley on the south-western side of the Krzyszkowicki Forest, just upstream of the Malinówka 2 Reservoir.

A detailed scope of the contract in question is determined under "Appendix no. 1", which forms an integral part of this decision

**1.2 Conditions for using the land at the performance and at the use of the contract, with particular inclusion of the necessary protection of valuable environmental elements, natural resources and historic objects, and for limiting nuisance to adjacent areas:**

- a) One shall remove a deep water well existing within the Bieżanów Reservoir, which is a component of a water-intake of the Communal Management Works in Wieliczka, as well as other inactive wells, in accordance with separate regulations, in order to

exclude the possibility of contaminating ground water and to develop a replacement well beyond the reach of reservoir's impact.

- b) One shall relocate all objects and elements of the existing technical facilities, and particularly sanitary canalization collectors and water-supply piping to the area beyond the reservoirs' bowls, and shall redevelop outlets of rainfall canalization draining the motorway and develop protection for the discharge of water from the Raba I piping and from the Raba II piping, in order to guarantee their proper functioning and to disable potential contamination.
- c) One shall guarantee discharge of rainfall water from the areas located in the area beyond the embankment – especially through the construction of a drainage ditch for the Malinówka I Reservoir and through the development of a ditch protected with concrete trenches along the boulevard for the Biezanów Reservoir, or through another solution.
- d) After accommodation of any flood wave and depletion of a reservoir, one shall remove provided sediments and pollutions.
- e) Materials applied for construction of the dam cannot contain substances undergoing washing-out, and especially substances significantly harmful to the water environment, occurring in a form of soluble compounds.
- f) At implementation of the contract it is allowed to use and transform environmental elements only in such an extent, in which it is necessary.
- g) During preparation and implementation of the contract one shall assure economical land management.
- h) Develop a plan of work in a way minimizing the use of construction equipment and means of transportation. One shall plan the sequence of works in a way maximizing the use of access roads.
- i) Material storage sites, staff facilities and parking lots for the equipment and for machines shall be located in places of the lowest environmental value, including the rule of minimizing land acquisition and land transformation and the obligation of reinstatement after completion of the works.
- j) During the performance apply technically efficient equipment, machines and vehicles, so no uncontrolled leakage of fuel would occur; thus, there would be no contamination of the ground and water environment.
- k) The contractor should have absorbents to neutralize diesel-derivative pollutions in case of their leakage.
- l) For the time of performance one shall develop a flood protection plan determining relations between the time of commencing evacuation or protection of the construction equipment and the occurrence of hydro-meteorological event.
- m) Develop a detailed dendrological inventory for greenery to be logged. Trees and shrubs to be logged shall be determined in details and visibly marked.
- n) The logging of trees and shrubs shall be limited to the necessary minimum allowing for implementation of the contract, and shall be done beyond the hatching period of birds, i.e. beyond the period from March 1 to October 15.
- o) Trees not to be logged shall be properly protected against damaging. The works in vicinity of roots and trunks shall be done manually. One cannot leave uncovered roots for longer time to avoid their drying-out.

- p) The necessary logging of trees shall be done under supervision of an ornithologist, after obtaining a relevant permit.
- q) It is forbidden to store any materials, soil or construction waste in vicinity of tree trunks.
- r) Prior to the commencement of earthworks within the given area, one shall inspect it in terms of protected animal species' occurrence (e.g. amphibians, reptiles, birds). The works associated with the removal of the top layer of soil shall be done from September to February. Identified specimens shall be transferred to the area beyond the contract site, to a place having similar habitat conditions and located in such a distance, so the animals would not be able to return to the site until the completion of works. The earthworks shall be done under supervision of a naturalist.
- s) If seasonal migration of amphibians would be identified on the contract site, the contract area shall be protected to disable the amphibians to move into the area, where – due to the performance – they would be endangered; for that purpose the site shall be properly fenced with fencing having a height of about 0.5 m, including 10 cm overhang outside (film, agro-textile, or net with a maximum mesh size of 0.5x0.5 cm), to avoid migration of the amphibians into the contract area. In the bottom part the fencing material shall be placed in the ground – the fencing shall tightly join the ground surface and shall be anchored. The amphibians shall systematically be caught and moved to the area beyond the contract site, to a place having similar habitat conditions and located in such a distance, so the animals would not be able to return to the site.
- t) Prior to commencing the earthworks one shall remove a layer of humus, collect it beyond the area of earthworks, and assure the possibility of its re-use for provision of a fertile layer in the following construction stages.
- u) Excavations shall be protected against trapping of small animals.
- v) During the performance one shall keep the continuity of flow in the water-courses.
- w) One shall apply mixes of grass and other native species of plants to develop bowls of reservoirs.

### **1.3 Requirements for preventing effects of industrial failures:**

The contract is not an object providing hazard of serious industrial failures.

### **1.4 Requirements for limiting transboundary impact on the environment:**

Transboundary impact of the contract on the environment has not been identified due to a large distance from the State Boundaries.

## **II. Obligation related to prevention, minimizing of environmental effects, and monitoring of the contract impact on the environment:**

There are no obligations related to monitoring of the contract impact on the environment.

## **III. I do not impose an obligation of performing a repeated environmental impact assessment within the framework of proceeding on the issuance of decisions discussed under Article 72 (1) of the Act on the access to information on the environment and its protection, public participation in environment protection and environmental impact assessments.**

## **IV. The contract does not belong to the type of contracts, for which an area of restricted use may be established.**

- V. **The contract does not require imposing an obligation of developing a post-implementation analysis in the construction permit.**
- VI. **Based upon the Investor's application filed with the note dated 08/10/2012 I make the decision immediately enforceable.**
- VII. **Specificity of the planned contract:**  
Specificity of the contract is given in "Appendix no. 1" to this decision.

## JUSTIFICATION

Mr. Piotr Radzicki – co-owner of "AdEko", with its registered office at 35/4. Witosa Street in Cracow, acting in the name of the Investor, i.e. Małopolski Board of Amelioration and Water Structures in Cracow – filed an application dated 05/08/2012, and supplemented it with a note dated 07/26/2012, on the issuance of a decision on environmental conditions for the contract titled:

1. **"Construction of a flood storage reservoir "Bieżanów" on the River Serafa at chainage km 7+284 in the City of Cracow",**
2. **"Construction of a flood storage reservoir "Serafa - 2" on the River Serafa at chainage km 9+223 in the City of Cracow",**
3. **"Construction of a flood storage reservoir "Malinówka - 1" on the Malinówka Stream at chainage km 0+220 in the City of Cracow",**
4. **"Construction of a flood storage reservoir "Malinówka - 2" on the Malinówka Stream at chainage km 2+320 in the City of Cracow",**
5. **"Construction of a flood storage reservoir "Malinówka - 3" on the Malinówka Stream at chainage km 3+017 in the City of Cracow and in the City of Wieliczka";**

The following were attached to the application:

- Investment Data Sheet – 2 copies with a digital version,
- Environmental Impact Report for the contract – 2 copies with a digital version,
- Site map in a scale of 1:1000 with indicated course of land boundaries, where the contract shall be implemented, and including the area, where the contract impact shall occur – 2 copies,
- Copies of a register map – 2 copies,
- Extracts from the land and mortgage register covering the area, where it is expected to implement the contract, and the area, where the contract impact shall occur – 2 copies,
- Power of attorney dated 03/19/2012, ref. no.: DO-013-39/12, provided by the Małopolski Board of Amelioration and Water Structures in Cracow for Mr. Piotr Radzicki – co-owner of "AdEko" with its registered office at 35/4. Witosa Street in Cracow – to act in the name of the MZMiUW in Cracow in administrative proceedings on the issuance of decisions and establishments necessary for the development of design and evaluation documentation and of the feasibility study for the contract in question.

The application on the issuance of the decision on environmental conditions for the contract stated in the heading, as provided to the local Directorate, is qualified as a single contract, in accordance with a definition of contract (*it is an engineering intention or other intervention in the environment comprising transformation or modification of the land use method, including extraction of ores; technologically*

*associated contracts are qualified as a single contract, even if they are implemented by different units*) given under Article 3 (1) item 13 of the aforementioned Act, because – as informed by the author of the report – they jointly assure proper flood protection for the Stary Bieżanów Estate and for the Złocień Estate.

The Contract titled **“Construction of a flood storage reservoir “Malinówka - 3” on the Malinówka Stream at chainage km 3+017 in the City of Cracow and in the City of Wieliczka”** is classified as a contract, which may always significantly affect the environment, and it required development of an environmental impact report in accordance with Article 2 (1) item 36 (“structures damming water with a damming height not lower than 5 m”) of the regulation of the Council of Ministers of November 9, 2010 on the investments which may significantly affect the environment (OJ of 2010 no. 213, item 1397). The remaining contracts (separately) are classified as contracts, which potentially may significantly affect the environment, but – due to the technological connection – they are qualified as contracts, which may always significantly affect the environment.

The investment intention is classified as:

- a contract that may always significantly affect the environment in accordance with:
  - Article 2 (1) item 36 (“structures damming water with a damming height not lower than 5 m”).

The accompanying contracts are classified as:

- Contracts that potentially may significantly affect the environment in accordance with:
  - Article 3 (1) item 7 (“power stations of overhead power lines with a rated voltage not lower than 110 kV, other than listed under Article 2 (1) item 6”);
  - Article 3 (1) item 65 (“flood defenses, except for redevelopment of flood embankments including sealing of the embankment body and its subbase, to limit the possibility of washing-out and failure during accommodation of flood water, as well as regulation of water or its channeling understood as water management allowing for its use for navigation purposes”);
  - Article 3 (1) item 66d (“structures damming water – other than the ones listed under Article 2 (1) items 35 and 36 – to a height not lower than 1 m”);
  - Article 3 (1) item 68 (“main water-supply piping for transfers of water and main water-supply conduits providing water from a treatment station to distributional water-supply pipes, except for their redevelopment using a trenchless method”);
  - Article 3 (1) item 65 (“sewerage network with a total length of the contract not smaller than 1 km, except for their redevelopment using a trenchless method and for connections to buildings”) of the regulation of the Council of Ministers of November 9, 2010 on the investments which may significantly affect the environment (OJ of 2010 no. 213, item 1397).

In conformity with provisions of Article 75 (1) item 1 letter a) of the Act of October 3, 2008 on the access to information on the environment and its protection, public participation in environment protection and environmental impact assessments, the Regional Director for Environmental Protection is responsible for the issuance of a decision on environmental conditions for the contract in question, as the subject reservoirs are characterized as artificial water reservoirs.

In the course of the proceeding, on 06/26/2012 the Investor's proxy – Mr. Piotr Radzicki – informed the local Directorate on establishments made between the designing unit PPHU AdEko s.c. in Cracow and the Communal Management Works in Wieliczka due to the development of the Biezanów Reservoir. Contents of the aforementioned note state that mirroring shall be done for the well located on plot no. 335 area 103 Podgórze as a replacement for the removed deep-well on plot no. 436/8 area 101 Podgórze, instead of constructing a new deep-water well.

Based upon Article 61 (4) of the Code of Administrative Procedure, The Regional Director for Environmental Protection in Cracow notified all parties on 08/10/2012, ref. no.: OO.4233.13.2012.AG, about commencing the proceeding to issue the decision in question. Due to the fact that the number of proceeding parties exceeded 20, Article 49 of the Code of Administrative Procedure – stating notification of the parties through an announcement – was applied. The announcement was placed on noticeboards of the: City Office of Cracow from 08/17/2012 to 09/08/2012, and City and Commune Office of Wieliczka from 08/17/2012 to 08/31/2012, as well as on a noticeboard of the Regional Directorate for Environmental Protection in Cracow from 08/13/2012 to 08/27/2012. Furthermore, information on the commencement of proceeding was published in the Public Information Bulletin on the website of the Regional Directorate for Environmental Protection in Cracow.

The Regional Director for Environmental Protection in Cracow applied on 08/10/2012, ref. no.: OO.4233.13.2012.AG, to the State Provincial Sanitary Inspector in Cracow for the issuance of an opinion prior to the issuance of decision on environmental conditions for the subject contract. The State Provincial Sanitary Inspector in Cracow issued a sanitary opinion on 09/04/2015 (reception date: 09/07/2012), ref. no.: NS.9022.4.449.2012, establishing a positive opinion for the contract in question in terms of hygienic and health requirements, and providing guidelines for implementation and use of the contract, as given in this decision.

In accordance with Article 33 (1), due to Article 79 (1) of the Act on the access to information on the environment and its protection, public participation in environment protection and environmental impact assessments, for the purpose of assuring the possibility of public participation in the proceeding, an announcement of the Regional Director for Environmental Protection in Cracow dated 08/10/2012, ref. no.: OO.4233.13.2012.AG, was placed on a noticeboard and on a website of the Regional Directorate for Environmental Protection in Cracow, as well as on notice boards of the City Office of Cracow and of the City and Commune Office of Wieliczka, while informing about the commencement of proceeding on the issuance of a decision on environmental conditions for the contract in question, on the commencement of environmental impact assessment for the subject contract, on authorities responsible for the issuance of the decision and on authorities responsible for the issuance of an opinion on implementation and use of the contract and on the possibility of acknowledging the case documentation, as well as on provision of remarks and motions in the case in question within 21 days. The announcement was published on the noticeboard of RDOŚ in Cracow from 08/17/2012 to 09/07/2012, and on noticeboards of the: City Office of Cracow from 08/17/2012 to 09/08/2012, and City and Commune Office of Wieliczka from 08/17/2012 to 09/07/2012. The Regional Directorate for Environmental Protection in Cracow did not receive any remarks and motions in the subject case from the parties, the public, as well as from social and ecological organizations within the legally binding time of 21 days.

Due to the type and character of the contract, the Regional Director for Environmental Protection in Cracow – in reference to Article 10 (2) of the Act of June 14, 1960 Code of Administrative Procedure (OJ of 2000 no. 98, item 1071, as amended) – decided that it is justified to resign from notifying the parties about completing the evidence hearing for the issuance of this decision, due to hazard for human life and health and due to formed material damaged in urban infrastructure and flooded houses of people living in the Stary Bieżanów District and in the Złocień District (flooded six times during the flood of 2010).

The Act of November 3, 2008 on the access to information on the environment and its protection, public participation in environment protection and environmental impact assessments states in Article 80 (2) that the authorities are released from the necessary identification of compliance between the contract and provisions of the Local Spatial Development Plan at the development of an environmental impact assessment for flood defenses developed based upon the Act of July 8, 2010 on the special preparation rules for flood protection investment.

The planned contract forms an element of flood protection for the areas located in the Serafa river basin, as given in the "Improvement Program for Flood Protection in the Serafa River Valley, City of Cracow, Municipality of Cracow, District of the City of Cracow, Brzegi, Kokotów, Commune of Wieliczka, District of Wieliczka". An objective of the planned actions is to completely protect the areas within the Serafa river basin, and especially the Złocień Estate and the Stary Bieżanów Estate, in the range of a flow probability of  $Q_{1\%}$ .

#### **Three variants of technical solutions were analyzed:**

**Variant I – regulation of the Serafa river bed** – it assumed increasing a river-bed's cross-section for accommodation of  $Q_{1\%}$  water; however, the results of flow simulation proved that there is no technical possibility of safe accommodation for that water. It would be necessary to develop a gully with an opening of 3.0 m and a height of 3.0 m in a reach of at least 6.290 km, construct 1.400 km of flood embankments to protect the Złocień Estate, and redevelop all bridges and footbridges.

**Variant II – construction of a flood embankment to accommodate  $Q_{1\%}$  flow** – it would require developing about 4.56 km of embankments, raising the backwater embankments at the River Serafa from the River Vistula over a length of about 1.652 km, extensive expropriation, and redevelopment of road infrastructure.

**Variant III – construction of dry flood storage reservoirs** – that solution assumed that for the purpose of limiting the flood hazard at chainage km 3+467-8+024 of the River Serafa, it is necessary to reduce the  $Q_{1\%}$  flood wave to the  $Q_{10\%}$  flow. It is possible through achieving such a flood storage capacity at the Malinówka Stream as to stop the wave with a probability of  $Q_{1\%}$ , and therefore allow for the reduction of a flood wave at the River Serafa to the safe flow of  $Q_{10\%}$ . For that purpose it is expected to develop three dry flood storage reservoirs at the Malinówka Stream and two at the Serafa River, i.e.:

- Bieżanów located at chainage km 7+284 (dam section),
- Serafa 2 at chainage km 9+223 (dam section),
- Malinówka 1 located at chainage km 0+220,
- Malinówka 2 located at chainage km 2+320,

- Malinówka 3 located at chainage km 3+017.

The total flood storage capacity of the reservoirs shall amount to 430 000 m<sup>3</sup> at the calculated volume of the flood wave of 399,060 m<sup>3</sup>. In case of applying the maximum capacity of the reservoirs at the Malinówka Stream – at Q<sub>1%</sub> flood flow – only 4.0 m<sup>3</sup>/s would be discharged from the Malinówka Stream to the River Serafa, what would reduce the flood wave in the Serafa River to the flow of Q<sub>1%</sub> - 22.24 m<sup>3</sup>/s. However, the reservoirs at the River Serafa are to reduce the aforementioned wave to the level of safe flow Q<sub>10%</sub> = 13.95 m<sup>3</sup>/s. It shall be necessary to construct embankments and boulevards over a length of 1.460 km and a height of about 1.40 m for safe accommodation of the flow Q<sub>10%</sub> in section at chainage km 3+467-4+921 of the River Serafa. However, for the purpose of protecting the Stary Bieżanów Estate and the Złocień Estate it shall be necessary to provide extension at chainage km 6+117-7+106.

Detailed parameters of the reservoirs are given in the table below.

Reservoir	Malinówka no. 1 /Motorway/	Malinówka no. 2	Malinówka no. 3	Bieżanów /Bieżanów/	Serafa no. 2 /Wieliczka/	Total
Capacity of the reservoir [K m <sup>3</sup> ]	115	55	80	130	50	430
Damming elevation [m a.s.l.]	216.50	229.50	237.00	210.00	220.20	-
Bottom elevation [m a.s.l.]	211.65	224.60	229.10	205.50	216.00	-
Dam section [km]	0+220	2+320	3+017	7+284	9+223	-
Area of the reservoir [ha]	6.5	2.5	3.4	7.0	2.8	22.2
Damming height [m]	4.85	4.90	7.90	4.50	4.2	-
Front dam length [m]	100	125.0	120.0	340	50	735
Side dam length [m]	850	-	-	-	-	1300
Embankment:						
Boulevard:	-	-	-	450.0	-	
River-bed relocation length [m]	About 140	About 226	-	About 180 m	-	546
Collision with utilities	k. 600, w. 110 (connection) eN – high voltage	k. 400 w. 80, piping Raba II, eN	Piping Raba I and II, eN	Removal of a deep-water well, development of a replacement well beyond the reach of reservoir's impact	w. 50, w. 300	-

According to the author of the contract's environmental impact report, the most beneficial variant for the environment is the variant proposed by the applicant, i.e. Variant III, which comprises construction of five dry flood storage reservoirs. Those reservoirs would be developed in a bead arrangement. At application of front dams with a discharge-spillway section and of side dams (where necessary), one

would provide reservoirs operating as dry flood storage reservoirs functioning during excessive flows only. The achieved flood storage capacity amounts from 50 K m<sup>3</sup> to 130 K m<sup>3</sup> for particular reservoirs, what in total – as mentioned above – amounts to 430 K m<sup>3</sup>. It allows for reduction of a flood wave from the flow with Q<sub>1%</sub> probability to the flow with Q<sub>10%</sub> probability, which is safe for the Serafa river bed.

Front dams and side dams shall be protected against filtration through sealing of the body on the riverside with geo-membrane made of PEHD or PVC and with a vertical hydro-insulating DSM membrane or through a diaphragm wall located at the riverside foot of the embankment or a vertical hydro-insulating membrane driven from the embankment crest without a geo-membrane screen, depending on the ground and water conditions identified in details.

Direct impact of the reservoirs on the construction stage shall be associated with earthworks in the area of the front dam and within bowls of the reservoirs, and with concrete works in the area of discharge and spillway section. Materials applied to seal the earth-fill dams shall be neutral to the environment. The reservoirs to be developed shall be done one by one. It results from the possible planning and funding for the contract. During implementation of the planned contract, due operations of the construction equipment and transportation and storage of construction materials there may be temporary emission of noise, dusts and combustion gases to the environment. However, according to the author of the report those shall be limited impacts not exceeding the noise generated by machines operating at farms or by vehicles passing-by in vicinity of the planned contract. Furthermore, it shall be temporary and shall cease after completion of the works. In order to minimize emission of dusts during the works in dry periods it is recommended to sprinkle the access roads and the technological roads with water, and during strong winds – to stop the works.

Site grading shall be done in bowl areas for the following reservoirs: Biezanów, Malinówka – 1, Malinówka – 2, in order to reach the proper flood storage capacity of the reservoirs. The site grading shall be done with a drop of 0.005 toward the water-course for the purpose of facilitating the discharge of water from reservoir bowls after transferring the flood wave. In case of Serafa 2 and Malinówka 3 reservoirs it is not designed to shape the bowls of the reservoirs. Bowls of those reservoirs shall be left in a natural condition. Soil material obtained during site grading for the reservoir bowls shall be – when useful – applied for construction of dams, whereas its remaining portion shall be used for reinstatement works or stored at sites indicated by the City Office of Cracow.

Moreover, due to the protection of trees, the areas with valuable trees are left as islands, which may be partially flooded. Due to short-term flooding it shall not be harmful to the trees. The planned necessary logging of trees and shrubs is limited to the areas covered directly by the planned contract, i.e. the areas, where front dams and side dams and discharge and spillway sections are to be developed, beds of water-courses are to be relocated, and in the zone where they form a risk for stability of dam structures. The remaining trees shall not be logged, and valuable specimens of oaks present at the Malinówka 1 Reservoir shall be left. After completing the works top-soil shall be spread within the entire earth-fill area and it shall be sown with grass.

During the construction phase the facilities located within the bowls of the reservoirs, which need to be relocated to the area beyond the flooding zone, shall also be redeveloped:

- **Bieżanów Reservoir:** relocation of the Serafa river bed over a length of about 180 m, removal of the existing deep-water well and development of a replacement deep-water well, relocation of a water-supply piping, relocation of an overhead telecommunication line.
- **Malinówka – 1 Reservoir:** relocation of the Malinówka stream bed over a length of about 140 m, redevelopment of sanitary canalization with a diameter of 600 mm, HV power line's cabling, redevelopment of outlets for the motorway's drainage.
- **Malinówka – 2 Reservoir:** relocation of the Malinówka stream bed over a length of about 230 m, redevelopment of sanitary canalization with a diameter of 400 mm, LV power line's cabling, assembly of non-return valves at the water discharge from the Raba I piping and from the Raba II piping.
- **Malinówka – 3 Reservoir:** protection of MV power line's posts, assembly of non-return valves at the water discharge from the Raba I piping and from the Raba II piping.

According to the author of the report, during implementation of the entire contract the following waste may occur:

- Plastics – code 17 02 03,
- Damaged reinforced-concrete and concrete elements – code 17 01 01,
- Damaged wooden elements – code 17 02 01,
- Other waste not listed – bentonite-cement leaven – code 17 01 82.

All waste produced shall be removed and treated beyond the construction site, in designated places.

As informed by the author of the report, in the use phase for the planned contract there are no adverse factors, which may affect the environment significantly. During floods and operations of the reservoirs their bowls would be filled with water.

Drainage for the area beyond the embankment shall be provided by ditches (Malinówka 1), and short-term filling of the reservoir with water would not cause changes of climate, huge changes to ground water flows, change of temperature, or emission to the atmosphere. The time of reservoir's depletion is from 2 to 8 hours. The maximum time of reservoir's operations in a flood cycle is from about 3 to 4 days. As a consequence, operations of the reservoir do not affect the quality of air. In the remaining time the area of the reservoir shall be used the same way as before the development stage.

During the use of the reservoir (maintenance works) waste in a form of sediments shall be generated as a result of silting of the reservoir bowl's bottom after the discharge of flood water and waste plant mass. Silt and other pollutions shall be collected from the reservoir's bowl and reinstated for farming on site, grass would be mown and transferred for composting. The entire area of the reservoir shall be sown with grass and a meadow status from before the flood shall be restored.

The contract planned for implementation, working in a dry regime, is – as described in the report – determined as the least affecting for the environment among the known types of flood defenses. It especially refers to the method of water flow through the (front) dam. In case of the Bieżanów Reservoir at chainage km 7+284 and the Serafa 2 Reservoir at chainage km 9+223 the flow of water reaching the flow of  $Q_{10\%}$  takes place through the bottom discharge facilities of the dam, i.e. a structure, which does not interfere in the flow volume, it does neither provide artificial damming nor other obstacles at the water-course. Only an excess of water is stored in the reservoir in a controlled

way, as it would not be accommodated within the river-bed. All three reservoirs at the Malinówka Stream shall have bottom discharge facilities designed for a regulatory flow amounting to  $Q = 4 \text{ m}^3/\text{s}$ , and they shall operate in a bead arrangement; thus, filling of every following one downstreams shall occur after complete filling of the upstream reservoir. Such a system shall allow for maximal flattening of a flood wave. Due to the quality of water in both of the water-courses (Malinówka – water beyond any class, Serafa – Class V of cleanliness) fish are not present in them.

The areas designated for the contract are located beyond the areal forms of environmental protection. The ecological ground, Krzyszkowicki Forest, neighbors Malinówka 2 and Malinówka 3 reservoirs directly, but – as indicated in the report – development of the designed dry flood storage reservoirs shall not affect that ecological ground adversely. The closest Natura 2000 site is Łąki Nowohuckie PLH120069, which is located about 6 km north from the planned contract site. Impact on Natura 2000 sites is not anticipated.

The areas designated for the planned contract are under high human pressure; however, there are protected species of animals and plants, which may be endangered due to implementation of the contract – especially due to the site grading done for the bowls of the following reservoirs: Bieżanów, Malinówka 1, and Malinówka 2. Those however are not rare species or ones threatened with extinction within the state. In order to minimize potential impacts one shall inspect the site in terms of protected animal species occurrence prior to the commencement of works, and identified amphibians and other animals of low mobility (not able to run away) shall be moved to the area beyond the contract site. Fish are not present in sections covered by the contract in case of Serafa and Malinówka.

If implementation of the planned contracts would relate to violation of bans determined in Article 51 and Article 52 of the Act of April 16, 2004 on the nature protection (OJ of 2009, no. 151, item 1220, as amended) in reference to the species under protection, it shall be necessary to obtain relevant permits, as discussed under Article 56 of the aforementioned act.

Impact of the contract on people, fauna, flora, soil, surface and ground water, air, climate, material goods, cultural goods, and landscape shall occur during the performance stage only, and it shall not have a negative character and its range would be of small significance – limited to the area of works. Due to the small nuisance of the designed contract for the environment a possibility of social conflicts' occurrence is not forecasted.

Due to an unequivocal and detailed description of the planned contract and the associated scope of works, as well as measures applied to minimize nuisance to the environment due to the planned contract, it was stated that it is not necessary to repeat the environmental impact assessment under the proceeding on the issuance of decisions discussed under Article 72 (1) of the Act of October 3, 2008 on the access to information on the environment and its protection, public participation in environment protection and environmental impact assessments, provided that there would be no changes in relation to the requirements determined in this environmental decision.

This decision does not impose an obligation of provision of a proceeding on the transboundary impact on the environment, as the planned contract shall not be associated with a risk of impact beyond the boundaries of the Republic of Poland.

Based upon the regulation of the Minister of Economy of April 9, 2002 on the type and volume of dangerous substances, presence of which in the works decides about its classification as increased risk works or works of high risk of a serious industrial failure occurrence (OJ no. 58, item 535, as amended), it was stated that the planned contract does not belong to the category of works posing risk of serious failures. As a consequence, there is no obligation of determining requirements for preventing effects of industrial failures.

The contract does not belong to the type of contracts, for which a restricted use area may be established, and it also does not require imposing an obligation of developing a post-implementation analysis in a construction permit.

Due to a hazard to life and health of inhabitants living in the districts of Stary Bieżanów and Złocień, and due to suffered material damage to the urban infrastructure, the Regional Director for Environmental Protection in Cracow – in reference to Article 10 (2) of the Act of June 14, 1960 Code of Administrative Procedure (OJ of 2000 no. 98, item 1071, as amended) – stated that it is justified to resign from notifying the parties about completion of the evidence hearing for the issuance of this decision.

The Investor's proxy applied on 08/10/2012 for making this decision immediately enforceable. The motion was justified – in accordance with Article 108 of the Code of Administrative Procedure – with an important interest of the Investor and with significant social issues. The proxy stated in the application that implementation of the aforementioned contract shall assure flood safety within the area of districts described above, and shall prevent flood damage suffered due to flooding of the estates by flood water of the River Serafa. Considering the above, the Regional Director for Environmental Protection in Cracow made this decision immediately enforceable.

Analysis of the provided application and the environmental impact report and updates to the environmental impact report proves that – at meeting the conditions under this decision – the intended contract shall not cause nuisance to the environment exceeding the standards.

As a result it was decided as given in the conclusion.

### **Instruction**

One may appeal against this decision to the General Director for Environmental Protection in Warsaw (00-922 Warsaw, 52/54. Wawelska Street) through the Regional Director for Environmental Protection in Cracow within 14 days from its serving date.

This decision is released from an administrative fee, in accordance with the Act of November 16, 2006 on the administrative fee (OJ of 2006 no. 225, item 1635, as amended).

In case of identifying plants, animals or fungi under protection within the area of planned earthworks, one shall observe regulations on the protection of species resulting from the Act of April 16, 2004 on the nature protection (OJ of 2009, no. 151, item 1220, as amended) and from the regulation of the Minister of Environment of October 12, 2011 on the protection of animal species (OJ of 2011 no. 237, item 1419), the regulation of the Minister of Environment of January 5, 2012 on the protection of plant

species (OJ of 2012 no. 81), and the regulation of the Minister of Environment of July 9, 2004 on the wildy occurring fungi under protection (OJ of 2004 no. 168, item 1765).

Killing of protected animals and damaging of protected plants and fungi, and damaging of habitats of protected species requires obtainment of a relevant permit from the General Director for Environmental Protection or from the Regional Director for Environmental Protection in Cracow for deviation from bans valid in reference to the protected species, which is issued based upon Article 56 (1) or (2) of the Act of April 16, 2004 on the nature protection.

Regional  
Director for Environmental Protection  
in Cracow  
Rafał Rostecki MSc

**Recipients:**

1. Mr. Piotr Radzicki, co-owner of "AdEko", 35/4. Witosza Street, 30-612 Cracow – Proxy,
2. Małopolski Board of Amelioration and Water Structures in Cracow, 73. Szlak Street, 31-153 Cracow,
3. Remaining parties of the proceeding notified in the mode under Article 49 APC,
4. OO.BM file.

As this decision (resolution) was not appealed against in time and mode legally determined, it became final on 12/03/2012, and it shall be implemented. Cracow, on 09/12/2013.

pp. Regional Director  
for Environmental Protection in Cracow  
Eng. Anna Kosak MSc  
Chief Specialist

**Appendix no. 1** to the decision  
ref. no.: OO.4233.13.2012.BM  
dated October 29, 2012

### SPECIFICITY OF THE INVESTMENT

The subject contract comprises construction of a group of five flood storage reservoirs at the River Serafa (two reservoirs) and at the Malinówka Stream (three reservoirs), within the City of Cracow and the City of Wieliczka – with a total flood storage capacity of 430 000 m<sup>3</sup>.

#### Basic technical parameters of particular reservoirs:

- **Bieżanów Reservoir at chainage km 7+284 (dam section)** – located within the City of Cracow at Drożdżowa, Bogucicka, Ślusarczyka Streets and at the Cracow-Wieliczka railway line.

#### **Technical parameters of the reservoir:**

- Dam section chainage: 7+284,
- Area of the reservoir F = 7 ha,
- Capacity of the reservoir V = 130 000 m<sup>3</sup>,
- Standard and maximum damming elevation: 210.00 m a.s.l.,
- Dam crest elevation: 210.70 m a.s.l.,
- Bottom elevation at the dam: 205.50 m a.s.l.,
- Outflow water-table elevation: 207.39 m a.s.l.,
- Damming height H = 4.5 m.

The following was adopted for the aforementioned reservoir:

- Design flow Q = 35.17 m<sup>3</sup>/s,
- Control flow Q = 41.19 m<sup>3</sup>/s,
- Regulatory flow Q<sub>10%</sub> = 13.95 m<sup>3</sup>/s.

Regulatory water shall be transferred via a rectangular bottom discharge facilities with an opening of 2.0 m x 1.20 m, with an inspection chamber base unit for low water, length of about 11.0 m and drop of 0.005; whereas control water shall be discharged using a spillway with an opening of 12 m at the crest and filling depth of 1.5 m. An inflatable-hydraulic gate is planned at the spillway. Due to the type of subbase the discharge-spillway structure shall be placed on bored concrete piles.

The front dam with a length of 340 m and a width of 3.0 m at the crest, riverside slope inclination of 1:3 and landside one of 1:2. The dam body and the subbase shall be sealed.

Class III hydraulic structure was adopted due to protection of developed and inhabited sites.

Within the framework of the contract it shall be necessary to relocate the Serafa Stream over a length of about 135 m, remove the existing deep-well and construct a new mirror one S12 beyond the reach of reservoir's water, relocate a piping and an overhead telecommunication line.

Rainfall water from the areas located on the landside of the boulevard (left side dam) shall be channeled in concrete throughs placed along the boulevard, and discharged to the Serafa Stream downstream of the dam.

- **Serafa 2 Reservoir at chainage km 9+223 (dam section)** – located within north boundaries of the City of Wieliczka. It covers a part of a deep valley of the Serafa River at the Bogucice Estate between Krakowska Street and railway tracks of the Cracow-Wieliczka railway line.

**Technical parameters of the reservoir:**

- Dam section chainage: 9+223,
- Area of the reservoir  $F = 2.80$  ha,
- Capacity of the reservoir  $V = 50\,000$  m<sup>3</sup>,
- Standard and maximum damming elevation: 220.00 m a.s.l.,
- Dam crest elevation: 220.70 m a.s.l.,
- Bottom elevation at the dam: 216.00 m a.s.l.,
- Outflow water-table elevation: 217.52 (h = 1.52 m),
- Damming height  $H = 4.2$  m.

The following was adopted for the aforementioned reservoir:

- Design flow  $Q = 18.82$  m<sup>3</sup>/s,
- Control flow  $Q = 22.19$  m<sup>3</sup>/s,
- Regulatory flow  $Q_{10\%} = 7.46$  m<sup>3</sup>/s.

Regulatory water shall be transferred via a rectangular bottom discharge facilities with an opening of 1.5 m x 1.0 m, length of about 4.5 m and drop of 0.005; whereas design water and control water shall be discharged using a spillway with an opening of 8 m at the crest and filling depth of 1.0 m. An inflatable-hydraulic gate is planned at the spillway with a height of 1.0 m, controlled automatically depending on the level of water in the reservoir.

Class III hydraulic structure was adopted due to protection of developed and inhabited sites.

For the purpose of reducing the hydraulic jump it is planned to develop a stilling basin with the following dimensions: length of about 16.0 m, width of about 9.0 m, depth of about 1.0 m.

The front dam with a length of 50 m and a width of 4.0 m at the crest, riverside slope inclination of 1:3 and landside one of 1:2.5. The dam body and the subbase shall be sealed.

Required redevelopment of the existing infrastructure – does not occur.

- **Malinówka 1 Reservoir at chainage km 0+220 (dam section)** – located at A-4 motorway and Mała Góra, Szastera, Nad Serafą Streets. On the west it reaches Wielicka Street, and on the east – to developed areas west of the railway line crossed by Serafa and its tributary stream – Malinówka.

**Technical parameters of the reservoir:**

- Dam section chainage: 0+220,
- Area of the reservoir  $F = 6.5$  ha,
- Capacity of the reservoir  $V = 115\,000$  m<sup>3</sup>,
- Standard and maximum damming elevation: 216.50 m a.s.l.,
- Dam crest elevation: 217.20 m a.s.l.,
- Bottom elevation at the dam: 211.65 m a.s.l.,

- Outflow water-table elevation: 213.15 (h = 1.50 m),
- Damming height H = 4.85 m.

The front dam with a length of 100 m and a width of 4.0 m at the crest, riverside slope inclination of 1:3 and landside one of 1:2.5. The dam body sealed with a geo-membrane and the subbase with a vertical hydro-insulating membrane.

The side dam with a length of 850 m, a width of 3.0 m at the crest, riverside slope inclination of 1:3 and landside one of 1:2.5.

Class III hydraulic structure was adopted due to protection of developed and inhabited sites.

Within the framework of the contract it shall be necessary to relocate the Malinówka Stream over a length of about 140 m, develop a drainage ditch in the area beyond the embankment over a length of about 900 m, relocate a collector of sanitary canalization, redevelop outlets for the motorway drainage, and cable HV power lines.

- **Malinówka 2 Reservoir at chainage km 2+320 (dam section)** – located at the boundary between the City of Cracow and the City of Wieliczka. It covers a part of the Malinówka Stream's valley on western side of the Krzyszkowicki Forest, just upstream of the A-4 motorway.

#### Technical parameters of the reservoir:

- Dam section chainage: 2+320,
- Area of the reservoir F = 2.5 ha,
- Capacity of the reservoir V = 55 000 m<sup>3</sup>,
- Standard and maximum damming elevation: 229.50 m a.s.l.,
- Dam crest elevation: 230.20 m a.s.l.,
- Bottom elevation at the dam: 224.60 m a.s.l.,
- Outflow water-table elevation: 226.08 (h = 1.48 m),
- Damming height H = 4.90 m.

The front dam with a length of 130 m and a width of 4.0 m at the crest, riverside slope inclination of 1:3 and landside one of 1:2.5. The dam body shall be sealed with a geo-membrane and the dam subbase with a vertical hydro-insulating membrane.

For the purpose of reducing the hydraulic jump it is planned to develop a stilling basin with a length of 16 m, a width of about 9.0 m, and a depth of about 1.0 m.

Class III hydraulic structure was adopted due to protection of developed and inhabited sites.

Within the framework of the contract it shall be necessary to relocate the Malinówka Stream over a length of about 230 m, relocate a collector of sanitary canalization with a diameter of 400 mm, redevelop outlets at discharge facilities from the Raba I piping and the Raba II piping (assembly of a non-return valve), and cable LV power lines.

- **Malinówka 3 Reservoir at chainage km 3+017 (dam section)** – located at the boundary between the City of Cracow and the City of Wieliczka. It covers a part of the Malinówka Stream's valley on south-western side of the Krzyszkowicki Forest, just upstream of the Malinówka 2 Reservoir.

### Technical parameters of the reservoir:

- Dam section chainage: 3+017,
- Area of the reservoir  $F = 3.4$  ha,
- Capacity of the reservoir  $V = 80\,000$  m<sup>3</sup>,
- Standard and maximum damming elevation: 237.00 m a.s.l.,
- Dam crest elevation: 237.70 m a.s.l.,
- Bottom elevation at the dam: 229.10 m a.s.l.,
- Outflow water-table elevation: 230.08 (h = 1.58 m),
- Damming height  $H = 7.90$  m.

The front dam with a length of 120 m and a width of 4.0 m at the crest, riverside slope inclination of 1:3 and landside one of 1:2.5. The dam body shall be sealed with a geo-membrane and the dam subbase with a vertical hydro-insulating membrane.

Class III hydraulic structure was adopted due to protection of developed and inhabited sites.

Within the framework of developing the reservoir it shall be necessary to protect the MV power line's posts and to assemble non-return valves at discharge facilities from the Raba I piping and the Raba II piping.

In case of all of the reservoirs at the Malinówka Stream the following was adopted:

- Design flow  $Q = 13.83$  m<sup>3</sup>/s,
- Control flow  $Q = 16.31$  m<sup>3</sup>/s,
- Regulatory flow  $Q_{10\%} = 4.0$  m<sup>3</sup>/s.

Regulatory water shall be transferred via a bottom discharge pipe with a diameter of 1.0 m, length of 4.5 m and drop of 0.005; whereas design water and control water shall be discharged using a spillway with an opening of 6 m at the crest and a filling depth of 1.0 m.

For the purpose of reducing the hydraulic jump it is planned to develop a stilling basin with a length of 16 m, a width of about 9.0 m, and a depth of about 1.0 m.

A cycle of reservoir operations at maximum levels shall be very short. The time of filling at  $Q_{1\%}$  flows is about 4-6 hours, and the time of depletion for the regulatory flow  $Q_{10\%}$  is about 12 hours.

It is expected to clean the reservoir's bowl, i.e. to remove sediments collected after accommodation of every flood wave and depletion of the reservoir.

Regional Director  
for Environmental Protection  
in Cracow  
Rafał Rostecki MSc