APPROVED
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CRIMEA RIVER BASIN MANAGEMENT PLAN 2025-2030

The RBMP for the Crimean rivers was prepared using data as of 2013.

After the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation, the River Basin Management Plan for the Crimean Rivers should be revised and finalized after the relevant institutions and organizations resume their activities, conduct an inventory, and collect and analyze data.

CONTENTS

The maps of the Crimea River Basin Management Plan for 2025-2030 are attached as a separate file in .PDF format.

LIST OF ABBREVIATIONS

AWB – artificial water body
CMU – Cabinet of Ministers of Ukraine
EQS – environmental quality standards
EU – European Union
GWB – groundwater body
HMWB – heavily modified water body
MENR – Ministry of Environmental Protection and Natural Resources of Ukraine
RBD – river basin district
RBMP – river basin management plan
SAWR – State Agency of Water Resources of Ukraine
SEI – State Environmental Inspectorate of Ukraine
SES – State Emergency Service
SWB – surface water body
SWMI – significant water management issue
WFD – Water Framework Directive

1 GENERAL CHARACTERISTICS OF SURFACE AND GROUNDWATER

1.1 Description of the river

1.1.1. Hydrographic and water management zoning

The territory of the Crimea RBD is located within two administrative-territorial units of Ukraine - the Autonomous Republic of Crimea and the city of Sevastopol.

The catchment area of the basin's rivers is 27.2 thousand km^2. The basin covers 4.6% of Ukraine's territory.

The hydrographic network of the Crimea RBD includes 331 rivers with a catchment area of more than 10 km^2 and 19 lakes with a catchment area of more than 0.5 km^2.

1.1.2. Climate

The majority of the Crimean coastal zone is part of the temperate climate zone of the South Atlantic-Continental climate region. The southern coast of Crimea is located in the subtropical climate zone and is part of the Mediterranean climate region.

The steppe zone of Crimea is characterised by severe arid conditions. Annual precipitation does not exceed 400-500 mm. In particular, during the warm season (April - October), this figure does not exceed 300 mm, and during the cold season (November - March) - 175-200 mm. In the Crimean Mountains, the annual precipitation increases rapidly to 1000-1060 mm, especially in the cold season, when it reaches 500-550 mm, and almost the same amount of precipitation falls in the warm season. On the southern coast of Crimea, the average annual precipitation does not exceed 600 mm, and the distribution between the warm and cold seasons is also almost the same - 300 mm for each period.

The snow cover on the southern coast of Crimea rarely lasts more than 20 days and on average lasts for 15 days. In the Crimean Mountains, snow cover lasts for 100 days and gradually decreases towards the north, where it lasts for 40 days in the steppe zone of the seaside. The steppe Crimea has the largest number of winter thaws in Ukraine - 50-70 days.

The average annual air temperature in the Crimean RBD is also unevenly distributed, particularly in the mountainous part. On the flat territory of the basin, this figure is around 10°C, while in the mountains, the average annual temperature drops to 5°C with altitude.

1.1.3. Relief

The RBR of Crimea is located on the Crimean peninsula of Ukraine. The terrain is extremely diverse. The northern part is characterised by flat terrain, represented by the Prisivas lowland in the north-east, the North Crimean lowland in the north, and the Tarkhankut upland in the west (Tarkhankut Peninsula).

South of the confluence of the Salgyr and Zuya rivers is the Crimean mountainous region, where the terrain changes rapidly from hilly to mountainous. In the south of the basin are the Crimean Mountains with the highest absolute elevation of 1545 metres (Mount Roman-Kosh). The average elevation of the flat part of the territory is 130-180 metres.

The elevations of the lowland and midland parts of the basin range from 550-950 metres.

1.1.4. Geology

The territory of Crimea is located in the junction zone of major geological structures - the Black Sea Basin (South Ukrainian monocline), the Scythian epiorogenic zone (Scythian plate) and the Alpine geosynclinal fold zone.

The extreme northern part of the peninsula is located within the Black Sea Basin, which covers the area of sedimentary strata that overlie the basement of the southern margin of the East European Platform. The southern boundary is drawn along a regional fault (the Main Azov Fault), which is also the northern boundary of the Scythian epiorogenic zone. In terms of stratigraphic completeness and thickness of the sedimentary cover section, sediments from the Cretaceous to the Anthropocene are widespread here, with thickness increasing in the northern direction to 6-7 kilometres in the Syvash area.

The Scythian epiorogenic zone is sub-latitudinally extended and mostly hidden under the waters of the Black and Azov Seas. On land, it covers the Plain Crimea.

The basement of the Scythian epiorogenic zone is composed of the Proterozoic greenstone complex and is mostly overlain by sedimentary cover strata of different ages. This part is distinguished by:

- The Central Crimean Uplift (in the central and southwestern part of the Plain Crimea) is characterised by a relatively shallow basement overlain by a thin cover of Cretaceous Eocene sediments, in some places eroded in the pre-Maikop period and uncoordinatedly overlain by Maikop or supra-Maikop sediments. The depth of the folded basement varies from 100 m (within the Simferopol Uplift) to 2,000-2,500 m.

- The Karkinit Trough (in the northern part of the Plain Crimea, in the Trans-Urals). Its northern boundary is to some extent conventionally drawn to the north of the coastline of the Gulf of Karkinit. The trough is a sublatitudinal depression filled with a thick layer of Lower Cretaceous terrigenous clay, Upper Cretaceous, Eocene clay-carbonate, Oligocene-Miocene clay-terigenous and Miocene-Pliocene carbonate-clay formations.
- Indolsk Trough (in the east). In Crimea, only its centriclinal closure is located onshore, while most of the trough is under the Sea of Azov. The trough is formed by Cretaceous and Paleogene formations overlain by very thick deposits of the Maikopian series and the Super-Maikopian complex. In the southern part of the trough, clay cryptodiapirs and diapirs, complicated by depressed synclines, play a significant role in the structure of the Maikop and Super Maikop sediments.

In the south, the Scythian epioregional zone borders on the Crimean-Kerch alps.

The Crimean orogen occupies the southern part of the Crimean peninsula and is an alpine cover-folding intensively dislocated structure. It is composed of two layers formed at the boundary of the Albanian and Cenomanian. The lower one is composed of metamorphic clay shales and sandstones of the Upper Triassic, Lower and Middle Jurassic and effusive rocks of the Middle Jurassic. In the upper part, there are Upper Jurassic and Lower Cretaceous sediments consisting of sandstones, clays, limestones and marls. The cover is overlain by a cap, the oldest element of which is the Cenomanian formations, which stratigraphically increase upwards by an almost continuous section of Turonian-Maastrichtian, Paleocene-Eocene sediments.

1.1.5. Hydrogeology

There are two hydrogeological regions within the Crimean peninsula: The Black Sea artesian basin and the Hydrogeological folded region of the Mountainous Crimea.

The Black Sea artesian basin is located in the steppe part of the Crimean peninsula, which is situated to the north of the Mountainous Crimea. The hydrogeological conditions are complex due to the diversity and uneven distribution of aquifers and low-permeability rocks, facies variability of the lithological composition of water-bearing sediments, and the varied quality of groundwater. The main aquifers in the plain part are Miocene and Pliocene-Quaternary sediments, and in the foothill part - Paleogene sediments. The region belongs to the zone of insufficient groundwater supply. The zone of active water exchange increases from north to south from 50 to 300 m.

The hydrogeological folded area of the Mountainous Crimea is located in the southern part of the Crimean peninsula and is confined to the meganticlinorium of the Mountainous Crimea, covering its mountainous part. The hydrogeological conditions of the region are quite complex, due to the folded nature of the geological section and the widespread development of karst zones, which actively drain the upper rock strata and increase underground runoff. The main aquifers include those in the Quaternary, Cretaceous and Jurassic deposits. Significant drainage, weak fracturing, small areas of aquifer development with low precipitation and significant evaporation do not contribute to the accumulation of significant groundwater resources.

1.1.6. Soils

In arid conditions in the forest-steppe part of the Mountainous Crimea, there are mainly chernozems with a humus content of 3-4%, and grey forest-steppe low-powered gravelly soils, as well as brown soils. In the foothills, chernozems, southern carbonate and sod-carbonate soils are common. Under the broadleaf forests, in conditions of sufficient moisture, brown mountain-forest soils with a humus content of 4-5% were formed, and they are suitable for horticulture, viticulture, tobacco and fodder grasses.

They were formed in a humid, moderately warm climate, under industrial type of water reclamation under coniferous and broadleaf forests. Soil-forming rocks: loams, clayey eluvial-deluvial deposits.

Physical and geographical factors contribute to the rapid decomposition of primary and formation of secondary minerals. In these soils, the process of sintering is well expressed. The process of podzolisation is weakly expressed or not observed at all. The profile of brown forest soils is not well differentiated into genetic horizons.

Mountain-meadow chernozem soils and mountain chernozems containing 16-20% humus are common in the Yayla. Under subtropical Mediterranean dry forests and shrubs, and herbaceous vegetation, brown soils (7-10% humus) were formed on the weathering products of clay shale and limestone. They are suitable for growing grapes, tobacco, essential oils and fruit crops.

The southern slopes of the Main Ridge of the Crimean Mountains, which drop off steeply to the Black Sea, are covered with cinnamon and brownish-red soils.

The humus content in them is 3-3.5% On red rocks, soils get a red-brown colour. All of them are heavily modified by economic activity.

1.1.7. Flora

The southern coast of Crimea and the Crimean Mountains belong to the Mediterranean region, the Boreal Kingdom of

the Galactic Floristic Kingdom and have vegetation typical of the area.

The Crimean Mountains are home to a particularly large number of endemic, rare and emerging plant species. Compared to other parts of Ukraine, the Crimean Mountains, like the Carpathians, have a high level of forest cover.

Forests - Crimean pine, beech, oak and others - cover about 336 hectares, occupying about 10% of the total area. They contain about 2,200 plant species, about 10% of which are endemics (maple of Steven, hawthorn of Poyarkova).

Despite the fact that forests and forest belts in the Crimean Mountains perform important soil-protective functions, they are often created haphazardly and are not usually properly maintained.

The slopes of the Crimean Mountains are covered with oak, beech and pine forests. The uplands are treeless, covered with meadow-steppe vegetation alternating with exposed limestone. The foothills of the Crimean Mountains are covered with forest-steppe vegetation.

As we can see, the Crimean Mountains have a high-altitude vegetation zone. This set of altitudinal zones of vegetation, like soils, depends on the absolute height of the mountains, the exposure of the slopes, and their position relative to the pore of the natural zones.

In the foothill part, at an altitude of up to 600 metres, there is forest-steppe vegetation (fescue, feather grass, wheatgrass, fescue, peony, thyme, mountaineer, and tawny), and at an altitude of 600-1000 metres there is a zone of broadleaf forests.

On the southern slope, at an altitude of up to 500 metres, oak and fir forests are developed, and at an altitude of 500-900 metres they are replaced by a belt of Crimean pine and oak. Higher up, there is a belt of beech forests. The foothills of the Crimean Mountains are treeless: they are alpine meadows.

On the southern bank of the Creek, subtropical vegetation is developed; here, in the semi-dry subtropics, forests of fluffy oak, Crimean and Pitsunda pine, wild pistachio, woody juniper, and thorny shrubs of shiblyak have developed. The natural vegetation of the humid subtropics is represented by broadleaf forests (oak, hornbeam, beech, chestnut, alder) and relics (dzelkva, lapina, yew).

Many plants have acclimatised to the southern coast of the peninsula. These include cypresses, palms, citrus trees, tea, grave, figs, magnolia, eucalyptus, laurel, and cedar.

The flora of the Crimean Mountains is quite peculiar. Of these, 2,200 species are found in the Mountainous Crimea, including 1,500 species on the Southern Coast of Crimea. This physical and geographical area is characterised by plant species that grow in the Balkans, the Caucasus, and Asia Minor, which is evidence of the past unity of the Eastern Mediterranean flora.

1.1.8. Fauna

The species composition of the fauna is crucially influenced by climatic conditions, which differ from those of the steppe regions adjacent to the north.

Crimean and rock lizards, Crimean gecko, leopard's snake, wild boar, mountain goat, roe deer, squirrel, bats, stone marten, sea gulls, grey dove, southern nightingale, black vulture are common in the mountain forests of Crimea.

In the Crimean Mountains, it is represented by the Crimean species, up to 50% of the population of which is found in nature reserves: 1,500-2,000 animals per year. In addition to the above animals, the forests are home to voles, mice, shrews, and forest birds such as grouse, hazel grouse, and black grouse.

The main types of aquatic bioresources are:

- Salgir River - silver crucian carp (Carassius gibelio), Azov shad (Alburnus leobergi), common shad (Alburnus alburnus), common burbot (Alburnus alburnus), sun perch (Lepomis gibbosus), Amur sabrefish (Pseudorasbora parva) goby (Neogobius fluviatilis), common gudgeon (Gobio gobio), European chub (Squaliuscephalus), roach (Rutilus rutilus), river perch (Perca fluviatilis), brook trout (Salmo trutta), small fish (Vimba tenella);
- Kacha River - silver crucian carp (Carassius gibelio), common dace (Alburnus alburnus), sunfish (Lepomis gibbosus), Amur chub (Pseudorasbora parva), dragonfly goby (Neogobius fluviatilis), batrachocephalus (Mesogobius batrachocephalus), common gudgeon (Gobiogobio), European chub (Squalius cephalus), common roach (Rutilus rutilus), perch10 Crimean River Basin Management Plan for 2025-2030perch (Perca fluviatilis), brook trout (Salmo trutta), small fish (Vimba tenella);
- Alma River - silver crucian carp (Carassius gibelio), common roach (Alburnus alburnus), sun perch (Lepomis gibbosus), Amur chub (Pseudorasbora parva), dragonfly goby (Neogobius fluviatilis), batrachocephalus (Mesogobius batrachocephalus), common gudgeon (Gobiogobio), European chub (Squalius cephalus), common roach (Rutilus rutilus), river perch (Perca fluviatilis), brook trout (Salmo trutta), small fish (Vimba tenella);
- Chorna River - silver crucian carp (Carassius gibelio), common roach (Alburnus alburnus), dragonfly goby

(Neogobius fluviatilis), batrachocephalus (Mesogobius batrachocephalus), common gobies (Gobio gobio), European chub (Squalius cephalus), common roach (Rutilus rutilus), river perch (Perca fluviatilis), brook trout (Salmo trutta), small fish (Vimba tenella).

1.1.9. Hydrological regime

Taking into account the great diversity in the physical and geographical conditions of water runoff formation in the Crimean RBD, four hydrological areas are distinguished: the Southern Coastal Region, the Western Northern Slope Region, the Eastern Northern Slope Region, and the Steppe Crimea Region.

There are two periods in the water regime of the rivers in this region: the first is from December to April, which is marked by the highest water content, highest water levels and frequent floods formed as a result of frequent thaws accompanied by liquid precipitation; the second is from May to November, which is characterised by low water levels (even before drying up), which can be interrupted by short-term, intense, sometimes even catastrophic rises in water levels due to heavy precipitation.

Spring floods are less pronounced due to rainfall. Warm-season floods typically occur in June and July. The maximum annual levels on the rivers of different regions are not observed simultaneously. On the rivers of the western part of the northern slope, the highest rainfall levels can occur in any month between December and July, on the rivers of the Southern Coast - more often in the winter-spring period (December - April), on the rivers of the eastern part of the northern slope - in spring (February - April), on the rivers and gullies of the Steppe Crimea - in summer after heavy rainfall.

During floods, water levels rise by 2-3 metres (sometimes 4-6 metres on the Belbek and Chorna rivers). The amplitude of fluctuations varies from region to region. The largest amplitudes (4.7-6.7 metres) are characterised by the rivers in the western part of the northern slope (Belbek and Chorna rivers). In the watercourses of the Southern Coast and the south-eastern part of Crimea (Uchan-Su and Su-Indol rivers), they do not exceed 2.8-3 metres, while in the lower reaches of the Salgir and Biyuk-Karasu rivers they reach 3.4-3.9 metres.

Before 2014, the hydrological regime in the basin was monitored at 34 hydrological stations. Due to the temporary occupation of the territory of the Autonomous Republic of Crimea, Ukraine has not received data from the basin's hydrological stations since 2014.

1.1.10. Specifics of the river basin

The mountain rivers of Crimea differ from the mountain rivers of the Carpathians in that they dry up for a long time or turn into underground (karst) streams. In the Crimean Mountains, floods are common in winter and spring. Waterfalls and boulders are common in the mountains, and a river flows among them. At the foot of the mountains, river valleys are up to 1 km wide and more. The riverbeds are mostly winding. They are mostly small rivers, with a width of 6-8 m at low water.

Rivers are characterised by the highest water content in the upper reaches and a significant decrease in the middle and lower reaches. There are two periods in the river level regime: the first autumn-spring period (November-December to April-May) is characterised by high water levels and frequent floods, and the second (the rest of the year) is characterised by low low water levels and drying up.

The basins in the middle and lower reaches (forest-steppe and steppe foothills of Crimea) are different
The area is characterised by minor dissection, a levelled surface, numerous closed depressions (pods) and typical steppe landscapes.

1.1.11. Typology of surface water bodies

The SWB typology was developed in accordance with the Methodology for Determining Surface and Groundwater Bodies (Methodology) approved by the Order of the Ministry of Ecology and Natural Resources No. 4 dated 14.01.2019 to detail the hydrographic zoning of Ukraine, prepare a state water monitoring programme, and develop and evaluate the effectiveness of the RBMP implementation.

The Crimea RBD defines SWBs for five categories of surface waters - rivers, lakes, artificial and heavily modified water bodies, transitional and coastal waters.

For the typology and delineation of rivers and lakes, the EU WFD system A was used (Table 1, Table 2).

Table 1 Descriptors for rivers (system A)

Descriptors		
Catchment height, m	Catchment area, km^2	Geological rocks
• midlands: over 800 • lowlands: 500 - 800 • upland: 200 - 500 • lowland: < 200	• small: 10 - 100 • average: >100 - 1000 • Large: >1 000 - 10 000 • very large: > 10 000	• limestone • silicate • organic

Table 2 Descriptors for lakes (system A)

Descriptors			
Catchment height, m	Average depth, m	Water mirror area, km^2	Geological rocks
• upland: 200 - 500 • lowland: < 200	• shallow: <3 • average in depth: 3 - 15 • deep: >15	• small: 0,5 - 1 • average: 1 - 10 • large: 10 - 100	• limestone • silicate • organic

The EU WFD system B is used for the typology of SWBs of the "transitional waters" and "coastal waters" categories. For "transitional waters", in addition to ecoregion and salinity, an additional indicator is used among the mandatory descriptors - origin (Table 3). This indicator, as an additional descriptor, was included following the example of Romania and Bulgaria.

Table 3 Descriptors for transitional waters (system B)

Eco-region	Salinity, ‰	Origin
• Black Sea • Sea of Azov	• oligohaline 0.5 to < 5 • mesogastric 5 to < 18 • polygamous 18 to < 30 • euryhaline < 40	• seaside • estuaries are open • estuaries are closed

For "coastal waters", in addition to the ecoregion and salinity, additional indicators are used - exposure (protection from waves and wind), the prevailing composition of bottom sediments (Table 4).

Table 4 Descriptors for coastal waters (system B)

Eco-region	Salinity, ‰	Exposition	Bottom deposits
• Black Sea • Sea of Azov	• desalinated < 0.5 • oligohaline 0.5 to <5 • mesogastric 5 to <18 • polygamous 18 to <30 • euryhaline 30 to <40	• protected (bays, bays) • Open (cape zones, direct coastline)	• clay-silt • silty sandy • sandy

The Crimea RBD is located within one ecoregion - the Pontic Province (number 12).

Based on the catchment area, the rivers of the basin are classified as small (with a catchment area of less than 100 km2), medium (100 to 1000 km2) and large (1000 to 10,000 km2) rivers.

According to the altitude of the catchment area, the rivers of the basin are located in the midlands (over 800 m), lowlands (500 to 800 m), uplands (200 to 500 m) and lowlands (less than 200 m).

The basin's geological rocks are of two types: limestone (Ca) and silicate (Si).

Table 5 Types of SWBs in the "rivers" category

№	Type code	Type
1	UA_R_12_S_3_Ca	a small river in the lowlands in limestone rocks
2	UA_R_12_S_3_Si	a small river in the lowlands in silicate rocks
3	UA_R_12_S_4_Ca	a small river in the middle of the mountains in limestone rocks
4	UA_R_12_S_4_Si	a small river in the middle mountains in silicate rocks
5	UA_R_12_M_2_Ca	medium-sized river on a hill in limestone rocks
6	UA_R_12_M_2_Si	medium-sized river on a hill in silicate rocks
7	UA_R_12_S_1_Ca	a small river in the lowlands in limestone rocks
8	UA_R_12_S_1_Si	a small river in the lowlands in silicate rocks
9	UA_R_12_S_2_Ca	a small river on a hill in limestone rocks
10	UA_R_12_S_2_Si	a small river on a hill in silicate rocks
11	UA_R_12_M_1_Ca	medium-sized river in the lowlands in limestone rocks
12	UA_R_12_M_1_Si	medium-sized river in the lowlands in silicate rocks
13	UA_R_12_L_1_Si	a large river in the lowlands in silicate rocks

In the category of "lakes", 4 types of SWBs were identified (Table 6).

Table 6 Type of SWBs in the "lakes" category

№	Type code	Type
1	UA_L_12_S_1_SH_Si	a small lake in the lowlands is shallow in silicate rocks
2	UA_L_12_M_1_SH_Ca	the middle lake in the lowlands is shallow in limestone rocks
3	UA_L_12_M_1_SH_Si	The middle lake in the lowlands is shallow in silicate rocks

4	UA_L_12_L_1_SH_Si	a large lake in the lowlands is shallow in silicate rocks

In the category of "transitional waters", 2 types of SWBs have been identified (Table 7).

Table 7 Types of SWBs in the "transitional waters" category

№	Type code	Type
1	UA_TW_M5_H_C	hypergaline closed estuaries
2	UA_TW_M5_H_O	emergent open estuaries

10 types of SWBs of the "coastal waters" category have been identified (Table 8)

Table 8 Types of SWBs in the category "coastal waters"

№	Type code	Type
1	UA_CW_M5_M_EX_D_CS	Mesogaline protected deep clay-silt
2	UA_CW_M5_M_EX_I_S	Mesogaline protected medium-depth sandy
3	UA_CW_M5_M_EX_I_SS	Mesogaline protected medium-depth silty-sandy
4	UA_CW_M5_M_EX_S_SS	Mesogaline protected shallow silty sandy soils
5	UA_CW_M5_M_SH_D_CS	Mesogaline open deep clay-silt
6	UA_CW_M5_M_SH_D_SS	Mesogaline open deep silty-sandy
7	UA_CW_M5_M_SH_I_S	Mesogaline open medium-depth sandy
8	UA_CW_M5_M_SH_I_SS	Mesogaline open medium-depth silty-sandy
9	UA_CW_M6_M_EX_S_CS	Mesohaline protected shallow clay-silt soils
10	UA_CW_M6_M_SH_S_CS	Mesogaline open shallow clay-silt

1.1.12. Reference terms and conditions

The assessment of the ecological state of the SWB is based on a comparison of biological indicators (benthic macroinvertebrates, macrophytes, phytobenthos, phytoplankton and fish) with reference conditions that characterise the state of the SWB, which has not been subjected to anthropogenic impact or is minimal.

Reference conditions are determined on the basis of data obtained from reference sites, by modelling (predictive models or retrospective forecasting methods that take into account historical, paleogeographic and other available data that provide a sufficient level of confidence in the values for reference conditions for each type of SWB) or by a combination of these methods or based on expert opinion.

In order to establish reference values for biological indicators based on data from reference sites, it is necessary to establish such sites for each type of SWB in all natural categories. The network should cover a sufficient number of sites to provide a sufficient level of confidence and to account for the variability of values for indicators that correspond to the different ecological status of the SWB type.

Key criteria for selecting reference sites:

- characterise the state of the SWB without anthropogenic impact or with minimal impact,
- there is no industry or intensive agriculture,
- concentrations of specific synthetic pollutants are zero or below the detection limits,
- no morphological changes,
- water intake and flow control cause only minor fluctuations in water levels and do not affect surface water quality,
- the vegetation of the coastal zone is appropriate for the type of SWB and geographical location,
- no invasive species,
- fishing and aquaculture do not affect the functioning of the ecosystem.

In accordance with paragraph 2 of clause VII of the Order of the Ministry of Ecology and Natural Resources of Ukraine No. 5 dated 14.01.2019 "On Approval of the Methodology for Assigning a Surface Water Body to One of the Classes of Ecological and Chemical Status of a Surface Water Body, as well as Assigning an Artificial [...]", type-specific reference conditions may also be determined on the basis of existing reference sites in other countries for the same type of SWB or by combining the procedures described above.

Given that reference conditions for all types of SWBs are not currently defined in Ukraine, it was suggested to use the reference conditions established for the same or similar types in neighbouring EU countries, namely the Slovak Republic and Romania.

The methodology includes four hydrobiological indicators (benthic macroinvertebrates, phytoplankton, phytobenthos, macrophytes, macroalgae and eutrophication, respectively) for four natural categories of surface waters (rivers, lakes, transitional waters and coastal waters) that have been identified in Ukraine.

The environmental quality standards (EQS) were approved by Order of the Ministry of Ecology No. 332 dated 01.04.2024 "On Approval of Environmental Water Quality Standards for Determining the Ecological Status of

Surface Water Bodies and Amendments to Certain Regulatory Acts".

In the second cycle of the RBMP, it is necessary to revise the reference conditions (including for the fish fauna indicator) using data from state water monitoring.

1.2 Water bodies delineation

1.2.1 Surface water

In the Crimea RBD, the SWBs was determined on 331 rivers and 19 lakes (according to the geoportal "State Water Cadastre: Accounting of Surface Water Bodies" by the State Agency of Water Resources of Ukraine).

There are 411 designated SWBs within the Crimean RBD. The designated SWBs belong to the following categories of surface waters: rivers, lakes, artificial (AWB) and heavily modified (HMWB), transitional waters, and coastal waters.

Category "rivers"

According to the Methodology, 204 SWBs were identified. The number of identified SWBs depending on descriptors and types is shown in Tables 9 and 10.

Table 9 Distribution of SWBs in the "rivers" category by descriptors

Descriptor	Indicator.	Number of SWBs
by eco-region	Pontic province	204
by catchment area	small (S)	171
	average (M)	32
	large (L)	1
by the height of the catchment area	in the midlands	18
	in the lowlands	38
	in the lowlands	78
	on a hill	70
by geological type	in silicate rocks	142
	in limestone rocks	62

Table 10 Distribution of SWBs in the "rivers" category by type

№	Type code	Type	Number of designated SWBs
1	UA_R_12_S_3_Ca	a small river in the lowlands in limestone rocks	16
2	UA_R_12_S_3_Si	a small river in the lowlands in silicate rocks	22
3	UA_R_12_S_4_Ca	a small river in the middle of the mountains in limestone rocks	11
4	UA_R_12_S_4_Si	a small river in the middle mountains in silicate rocks	7
5	UA_R_12_M_2_Ca	medium-sized river on a hill in limestone rocks	1
6	UA_R_12_M_2_Si	medium-sized river on a hill in silicate rocks	10
7	UA_R_12_S_1_Ca	a small river in the lowlands in limestone rocks	11
8	UA_R_12_S_1_Si	a small river in the lowlands in silicate rocks	45
9	UA_R_12_S_2_Ca	a small river on a hill in limestone rocks	19
10	UA_R_12_S_2_Si	a small river on a hill in silicate rocks	40
11	UA_R_12_M_1_Ca	medium-sized river in the lowlands in limestone rocks	4
12	UA_R_12_M_1_Si	medium-sized river in the lowlands in silicate rocks	17
13	UA_R_12_L_1_Si	a large river in the lowlands in silicate rocks	1

Category "lakes"

There are 19 SWBs identified (Table 11) in the Crimea RBD.

Table 11 SWBs of the "lakes" category

№	Type code	Type	Number of designated SWBs
1	UA_L_12_S_1_SH_Si	a small lake in the lowlands is shallow in silicate rocks	5
2	UA_L_12_M_1_SH_Ca	Middle lake in the lowlands is shallow in limestone rocks	2
3	UA_L_12_M_1_SH_Si	the middle lake in the lowlands is shallow in silicate rocks	11
4	UA_L_12_L_1_SH_Si	a large lake in the lowlands is shallow in silicate rocks	1

Category "transitional waters"

Eight SWBs have been identified in the Crimea RBD.

Table 12 Types of SWBs in the "transitional waters" category

№	Type code	Type	Number of designated SWBs
1	UA_TW_M5_H_C	hypergaline closed estuaries	7
2	UA_TW_M5_H_O	emergent open estuaries	1

Category "coastal waters"

13 SWBs have been identified in the Crimea RBD.

Table 13 Types of SWBs in the category "coastal waters"

№	Type code	Number of designated SWBs
1	UA_CW_M5_M_EX_D_CS	1
2	UA_CW_M5_M_EX_I_S	1
3	UA_CW_M5_M_EX_I_SS	2
4	UA_CW_M5_M_EX_S_SS	1
5	UA_CW_M5_M_SH_D_CS	2
6	UA_CW_M5_M_SH_D_SS	1
7	UA_CW_M5_M_SH_I_S	1
8	UA_CW_M5_M_SH_I_SS	2
9	UA_CW_M6_M_EX_S_CS	1
10	UA_CW_M6_M_SH_S_CS	1

Category " heavily modified water bodies "

There are 142 SWBs identified in the basin. The share of HMWBs in the total number of SWBs in the Crimean RBD is 35%. The bulk (91 SWBs) are classified as HMWBs due to straightening.

23 SWBs are classified as HMWB due to overregulation.

28 SWBs are classified as HMWB due to a combination of regulation and channel straightening (Fig. 1).

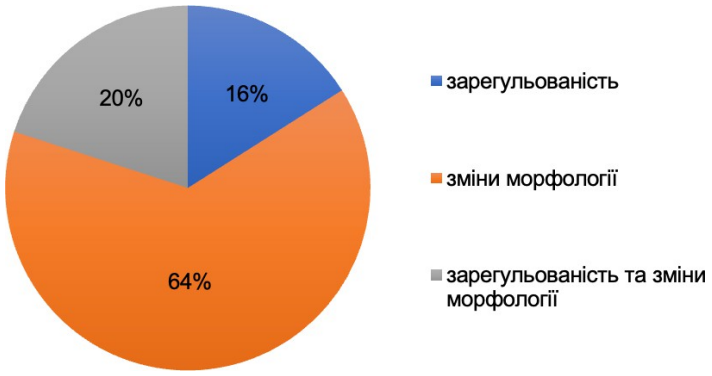

Figure 1 Distribution of HMWBs by causes of hydromorphological pressures (%)

Category "artificial surface water bodies".

In the Crimean river basin, 25 AWBs have been identified, including 11 canals and 14 bulk water storage facilities and ponds.

The percentage distribution of the identified SWBs in the Crimean RBD by category is shown in Figure 2.

Figure 2 Breakdown of identified SWBs by category (%)

Each of the 411 SWBs identified in the Crimea RBD has been assigned a unique code that looks like this:

UA_ M5.7_YYYY

- UA - Ukraine
- M5.7 - code of the RDB of Crimea (according to the Order of the Ministry of Ecology and Natural Resources of Ukraine No. 103 dated
- 29 March 2017 "On Approval of the Boundaries of River Basin Districts, Sub-basins and Water Management Areas")
- YYYY is the unique number of the designated IE in the RBR of Crimea.

Each linear SWB (of the categories "rivers", "AWB or HMWB") has a length (km). The length of the SWBs in the Crimea RBD varies from 0.15 km (UA_M5.7_0190 - Ai-Serez River) to 146.4 km (UA_M5.7_0349 - North Crimean Canal).

Figure 3 shows the distribution of the identified linear SWBs in the Crimean RBD by length.

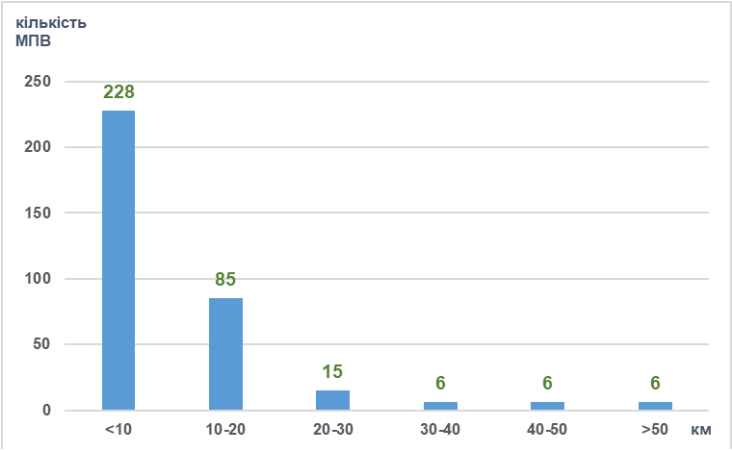

Figure 3 Distribution of the identified linear SWBs by length

Each polygonal SWB (categories "lakes", "AWB or HMWB", "transitional waters", "coastal waters") has an area (km^2). The area of the SWB in the Crimean RBD ranges from 0.28 km^2 (UA_M5.7_0142 - Zelenoyarskoye Reservoir) to 613.4 km^2 (UA_M5.7_0417 - coastal waters of the Crimean River Basin).

Figure 4 shows the distribution of the identified polygonal SWBs in the Crimea RBD by area.

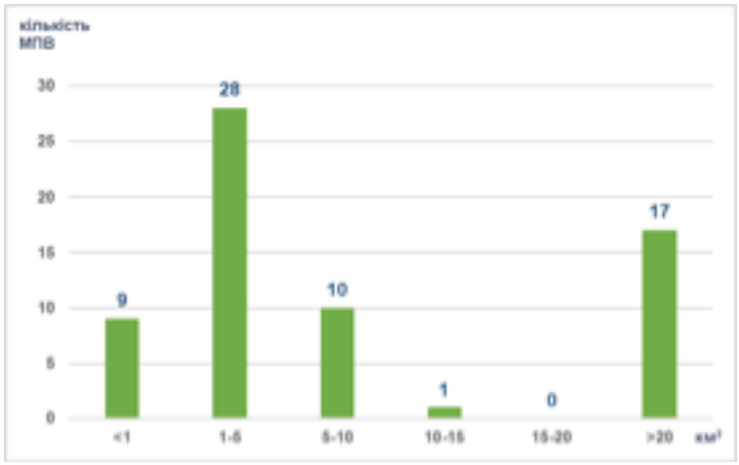

Figure 4 Distribution of identified polygonal SWBs by area

1.2.2 Groundwater

The deliniation of the GWBs was carried out in accordance with the Methodology for Determining Surface and Groundwater Bodies (Methodology) approved by the Order of the Ministry of Ecology and Natural Resources No. 4 dated 14.01.2019.

The definition of an GWBs includes the division of aquifers into smaller units, the preliminary establishment of GWBs boundaries based on individual characteristics and available knowledge of hydrogeological systems and anthropogenic impacts.

The definition begins with the analysis of geological maps and well data to identify different hydrogeological units within the aquifer. First of all, attention is paid to those aquifer complexes whose reserves can provide water intake of more than 10 m^3 per day.

The youngest aquifers are considered first. As a rule, the boundaries of surface water basins are approximated with the boundaries of groundwater basins, and then the determination of the GWBs for deeper aquifer complexes, the boundaries of which go beyond the boundaries of surface water basins, is performed.

The codes of the defining GWBs are formed as follows:

UAM5700N100

- UA - Ukraine,
- M57 is the code for the Crimean river basin,
- 0N100 is the code of the GWBs, which is formed from the name of the geological system from the Cenozoic, Mesozoic stratigraphic scale of the Stratigraphic Code of Ukraine, + number.

In the Crimean river basin, 2 non-pressure GWBs with a total area of 1,610.7 km^2 were allocated. In addition, 8 GWBs were identified in pressure aquifers (Table 14, Map 7.1, 7.2), with a total area of 22,466.55 km^2.

Table 14. GWBs

№	GWBs code	GWBs	Geological index	Area of the GWBs km2
1	UAM5700Q100	GWBs in alluvial Neopleistocene-Holocene sediments	aP-H	1080,0
2	UAM570NQ100	GWBs in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments	N_2 +a,apE-P_I	530,7
3	UAM5700N100	GWBs in meotic and pontic sediments	(N_1 m+p)	5179,0
4	UAM5700N200	GWBs in Middle-Upper Sarmatian-Meotian-Pontic sediments	(N s_{12+3} +m+p)	3171,0
5	UAM5700N300	GWBs in the Middle-Upper Sarmatian sediments	(N s)$_{12+3}$	8197,0
6	UAM5700N400	GWBs in the Middle Miocene sediments	(N)$_1^2$	3277,0
7	UAM570PG100	GWBs in Eocene sediments	(~~P~~)$_2$	350,15
8	UAM570PG200	GWBs in Paleocene sediments	(~~P~~)$_1$	125,1
9	UAM5700K100	GWBs in Lower Cretaceous sediments	(FROM)$_1$	922,3
10	UAM5700J100	GWBs in Upper Jurassic sediments	(J)$_3$	1245,0

In addition to the groundwater massifs, the Crimean peninsula has areas where anhydrous rocks that do not contain groundwater are common. These include: a thick (up to 2,000 m or more) layer of dense Maikop clays with interlayers of siltstones and thin clay sands, which are common on the Kerch Peninsula; marls of the Novopavlovsk, Kumsk and Alma Eocene; marls and clays of the Kachinsk and Bakhchisaray Paleocene-Eocene; and clays of the Lower Cretaceous.

The intrusive rocks developed in the Mountainous Crimea have not been studied in hydrogeological terms and are not considered as groundwater bodies. Locally water-bearing Upper Cretaceous, Upper Jurassic-Lower Cretaceous, Middle Jurassic and Upper Triassic-Lower Jurassic formations, which are waterless or slightly watered mainly in the upper, weathered zone and along tectonic faults, are not considered as groundwater bodies at this stage.

GWBs in alluvial Neopleistocene-Holocene sediments (UAM5700Q100)

The GWBs in alluvial Neopleistocene-Holocene sediments (aP-H) is confined to floodplains and the first floodplain terraces and is distributed in narrow strips in the valleys of the Salgyr, Zuya, Belbek, Kacha, Alma, Bulganak, Bodrak, Sudak, Belbek, etc. In the Chorna River basin, the waters of this GWBs are most common in the Baidar, Varnauta and Inkerman valleys (Figure 1.2.2.2). In the Mountainous and Predmontane Crimea, water-bearing sediments are pebble-gravel and gravelly material with sandy loam or loamy fill with a thickness of 5-11.8 m. In the lower reaches of the rivers, gravel and pebble deposits are replaced by loamy sandy deposits; the thickness increases to 30-40 m.

The GWBs is the first non-pressure aquifer from the surface. It is underlain by sediments of different ages, both water-resistant and aquiferous, which in the latter case leads to a hydraulic connection with the underlying aquifers and complexes.

The depth of the groundwater table ranges from 0.5-2.4 to 9.4-13.5 metres. In the lower reaches of the Belbek and Chorna Rivers, due to the presence of water-resistant rocks in the roof, the alluvial horizon waters become pressure waters, with a head of 2.5-7.5 m.

The water enrichment of the horizon is generally insignificant, but increases with increasing thickness and sorting of pebble sediments. Specific flow rates vary from 86.4 to 427.6 m /d ^{3}

The filtration coefficients vary widely, from 0.01 to 60 m/d, with a predominant value of 19.39-25.13 m/d (3.3-123.3 m/d for the Sudak and Kotlan rivers).

The chemical composition of the water in the upper reaches of the rivers is hydrocarbonate, calcium chloride-hydrocarbonate, sodium-calcium with a salinity of 0.4 to 0.7-0.9 g/dm^3 . As the valleys cross the Eocene marl rivers, sulphates begin to dominate the water composition. In the middle and lower reaches of the Belbek and Kacha rivers, water salinity reaches 0.8-1.1 g/dm^3 , in the Alma river basin - 1.5-2.3 g/dm^3 , Bulganak river - 2.0-4.5 g/dm^3 .

The aquifer is recharged by infiltration of precipitation, flow from aquifers and complexes below, and irrigation water from reclamation systems. The discharge is carried out into the river network and the Black Sea, into aquifers and complexes that lie below the gypsometric level, and by evaporation.

Groundwater is used for irrigation and domestic water supply (Plain Crimea, Crimean Foothills, Alma Basin, etc.), and for the Southern Coast it is the main source of water supply in the valleys of the Kutlak, Sudak, Suuk-Su, Kardzha-Karagach rivers.) It is also the main source of centralised water supply in Sevastopol.

GWBs in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments (UAM570NQ100)

The GWBs in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments (N_2 -a,apE-P_1) is distributed within the Eopleistocene terraces, and forms watersheds in the western part of the Alma basin, and is also distributed in the watersheds of the Kacha, Alma, Bulganak and Kyzyl-Yarska gully, in their lower reaches.

The water-bearing rocks are gravel and pebble formations with loamy fill, sandy loam and loam, between which there is no aged water bearing capacity, so they form a single aquifer with a depth of 1.4-9.1 m to 18 m. The waters of this horizon are groundwater.

Well flow rates range from 0.12-129.6 m^3 /d. Specific well flow rates vary from 3.46 to 124.42 m /d^3

The filtration coefficients are 1.0-11.0 m/d.

The chemical composition of the water is sulphate-hydrocarbonate and hydrocarbonate calcium, sulphate, hydrocarbonate-sulphate, along the sea coast chloride, sulphate-chloride with a salinity of up to 1 g/dm^3 . The waters are fresh, their salinity does not exceed 0.3-0.8 g/dm^3 , in the eastern part it sometimes increases to 1.0-1.6 g/dm^3.

It is fed by infiltration of precipitation and irrigation water. The direction of groundwater flow follows the natural slopes of the surface and is directed to the northwest and north-east. The discharge is in the form of springs with a low flow rate on the Black Sea coast, partly by evaporation. In the village of Andriivka, the water of this complex is used by local residents for household and drinking purposes (water extraction from wells).

GWBs in Meotic and Pontic sediments (UAM5700N100)

The GWBs in Meotic and Pontic sediments (N_1 m+p) is widespread in the northern and northeastern parts of the Crimean peninsula, as well as in the mudflats of the Kerch Peninsula.

The aquifer-bearing rocks are mainly porous limestone-shell rock, karstic, rarely oolitic, with marl layers, quartz and shell sands, sandstones with clay layers. The thickness of water-bearing sediments varies from 7-25 to 88-110 m, more often 20-57 m.

Lower Meotic clays, marls and limestones are the underlying aquifers. In some areas where there are no water-resistant Lower Meotic deposits, the waters of the underlying Meotic, Pontic and Sarmatian deposits are hydraulically interconnected. The roof of the aquifer complex consists of water-resistant Upper Pontic marls, sands and clays of the Upper and Middle Pliocene, and Quaternary loams within the uplands.

The depth of the GWBs ranges from 4-20 to 200-244 m. The GWBs is predominantly pressure, with maximum heads confined to the submerged parts. In the areas adjacent to the Novoselivske uplift, the head decreases, and in some places the water becomes free-flowing. The head is 0-190 m. Groundwater levels range from plus 0.9-3.4 to 60-65 m.

The filtration coefficient of pontic limestone is 24-915 m/d, meotic limestone - from 15-16 less frequently, up to 70-266 m/d. In the submerged part of the PGMs, the filtration coefficient is 0.009-20 m/d. The water content of the rocks varies due to heterogeneity of their lithological composition, changes in thickness, varying degrees of limestone karstification, feeding conditions and other factors. Specific flow rates vary from 1 to 50 dm^3 /s, with maximum flow rates (25-60 dm^3 /s with a decrease of 0.5-1 m) in the Karkinitsky and Indolsky troughs, as well as in the Novoselovsky uplift. The high water enrichment is due to strong limestone karstification and intensive feeding of the aquifer complex by water coming from the Tarkhankutian plateau. In the areas adjacent to the Tarkhankutian plateau, the specific well flow rate ranges from 0.05 to 63 dm^3/s, with maximum flow rates associated with depressions and minimum flow rates associated with uplifts.

Water salinity varies from 1 to 3 g/dm^3 , less often up to 4-7 g/dm^3 . The chemical composition of the water is hydrocarbonate, hydrocarbonate-sulfate calcium-magnesium. Mineralisation increases from the southeast to the north and northwest. In particular, the increase in mineralisation is noted in the axial part of the Karkinitsky (North Sivash) trough, where in the zone of slow water exchange, mineralisation increases from 1 to 22 g/dm^3 , the water acquires a sodium chloride composition.

Water salinity on the Kerch Peninsula varies from 1 to 3 g/dm^3, the chemical composition of the water is chloride, sodium chloride-sulfate.

Groundwater levels are subject to seasonal fluctuations of 0.2-0.7 m. The amplitude of fluctuations decreases with increasing depth of groundwater occurrence. The aquifer complex is fed on the southern side of the basin - in the area of the Outer Ridge of the Crimean Mountains and within the Tarkhankutian Plateau. The main discharge area is the Black Sea and river valleys. The groundwater of the GWBs is also actively used for water supply and irrigation.

GWBs in Middle-Upper Sarmatian, Meotian and Pontic sediments (UAM5700N200)

The aquifer in the Middle-Upper Sarmatian Meotic and Pontic sediments (N s_{12+3} +m+p) is distributed first from the surface in the form of narrow strips along Lake Donuzlav, Sasyk-Sivash, Sakske, the coast in the south of the Tarkhankut Peninsula, near Lake Dzharylgach, Panske, in the south of the Prysyvaska Plain, east of Lake Bakal to Pervomaiske village. North of this line it lies second and third from the surface. When submerged under younger sediments, the aquifer acquires pressure properties.

The water-bearing rocks are fractured, porous, cavernous limestones, and sands and sandstones in the lower part of the section. The total thickness of the reservoir is 112-173 m. The thickness increases from south to north. The lower aquifer consists of Middle Sarmatian and Konya clays up to 10-30 m thick. The upper aquifer consists of clays of the Cimmerian regional level with a thickness of 0.5-22.0 m. In some areas where there are no water-resistant clays, the aquifer is hydraulically connected to the aquifer in the Pliocene sediments that lies above.

The groundwater level is 18-25 metres deep. The head increases in the direction of the Karkinitsky Bay and Syvash, where it is 68-86 m. Water availability is heterogeneous, varying over the area and with depth, and depends on the composition of water-bearing rocks. Well flow rates range from 1296.0 to 3628.8 m^3/d with a water table of up to 3 m. Specific flow rates of wells exploiting Meotian deposits vary from 176-8 to 6,503 m^3/d, Sarmatian - 146.88-570.24 m^3/d. The filtration coefficients of limestone of the Pontic regional layer are 5-915 m/d, and of the Sarmatian layer - 3-8 m/d.

Water salinity usually does not exceed 1 g/dm^3. In the direction of Syvash, the mineralisation of the lower layers increases to 4 g/dm^3, occasionally reaching 17-22 g/dm^3. The chemical type of water is hydrocarbonate, hydrocarbonate-sulfate, chloride-hydrocarbonate with different cationic composition. With increasing mineralisation, the chemical type of water becomes sodium chloride.

It is fed by infiltration of precipitation and irrigation water, and in the submerged part by flow from the Pliocene aquifer. Discharge is into the Black Sea. The GWBs is the main production horizon in the north. Production water intakes with approved groundwater reserves are concentrated on it.

GWBs in Middle-Upper Sarmatian sediments (UAM5700N300)

In the Middle-Upper Sarmatian sediments (Ns_{12+3}), the GWBs is distributed first from the surface in the peripheral elevated parts adjacent to the foothill part. In the rest of the area, it sinks under aquifers and complexes of younger sediments and becomes the second or more below the surface. In the raised wings of the Alma Basin, near the horizon's distribution boundaries, the Middle-Upper Sarmatian sediments are composed of limestone, which is interbedded with sands, sandstones, clays and conglomerates. The total thickness of clays in the section is 5-10 m, and the aquifer is 10-15 m. In the submerged parts of the GWBs distribution, the water-saturated rocks are almost entirely limestone, and the horizon thickness increases to 130 m. The horizon depth increases in the western direction from 3 to 150 m.

The upper aquifer is made up of Meotian clays and marls, and the lower aquifer is made up of Lower Sarmatian clays.

Specific well flow rates vary between 0.03-16416 m^3/day, and filtration coefficients of water-saturated rocks are 0.01-228 m/d. The water salinity in most of the horizon is 1.0-1.5 g/dm^3. The composition of water is hydrocarbonate, hydrocarbonate-sulfate, calcium chloride or calcium-sodium. In the coastal areas, the mineralisation increases to 10-46.8 g/dm^3 and the water becomes sodium chloride. The most water-saturated areas are confined to syncline structures).

The aquifer is recharged by infiltration of precipitation and irrigation water, as well as by overflow from the overlying aquifers and recharge from the underlying Middle Miocene sediments in the depression sinkholes where the levels of the Middle-Upper Sarmatian aquifer are lower than the Middle Miocene aquifer. The aquifer's water is discharged into lakes, the Black Sea, and aquifers that lie gipsometrically below as a result of water withdrawal, and in areas with shallow water levels, partially by evaporation. The aquifer is the main operational aquifer, its natural regime has been disturbed by uncontrolled water withdrawal over the years. Within the Alma Depression, the Middle-Upper Sarmatian aquifer is exploited by a number of centralised water intakes operating in areas with approved reserves: Ivanivske, Chobotarske, Sakske, etc. At the Orlivske water intake site, saline water is being drawn up from the sea, which has led to an increase in salinity and virtually suspended the water intake.

GWBs in the Middle Miocene sediments (UAM5700N400)

The GWBs in the Middle Miocene sediments (N_1^2) is found in the foothills of the Crimean Mountains, where water-bearing sediments come to the surface or lie at a shallow depth; to the north, this GWBs is interbedded.

Fractured limestones, sands, and sandstones with thicknesses ranging from 6-50 to 60-100 m are water-bearing.

The Upper Sarmatian and Middle Sarmatian clays serve as the upper aquifer, and the Maikop clays as the lower aquifer.

The depth of the horizon ranges from 0.6-29 m at the spreading boundaries to 290-650 m in the submerged part, where the waters become pressure (head is 75-554.5 m).

The water content of the horizon is variable due to different thicknesses and filtration properties of the rocks. Specific well flow rates range from 4.32-67.3 m^3/d, in the submerged part - up to 345.6 m^3/d. Filtration coefficients are 0.4-20.56 m/d.

The mineralisation does not exceed 1 g/dm^3, according to the chemical composition of the water, calcium bicarbonate or sodium-calcium, sodium bicarbonate-chloride, sodium chloride. In the submerged part, mineralisation increases to 3.0 g/dm^3 and more.

On the wings of the Alma Basin, in places where the aquifer is drained by deep erosion cuts in river valleys and gullies, numerous downward springs with a flow rate of 25.9-43.2 m^3/d are recorded.

The aquifer is fed by precipitation in areas of shallow water-bearing rocks, discharge and water flow from aquifers and complexes that lie gipsometrically higher up. The water is discharged into the Black Sea, river valleys on the wings of the Alma Basin and operational water extraction.

The water in the horizon is used for drinking and household water supply by individual wells and centrally, in particular, at the Belogorskoye, Aeroflotskoye and Almynskoye fields.

GWBs in Eocene sediments (UAM570PG100)

GWBs in Eocene sediments (P_2) is widespread within the Black Sea artesian basin. From the inner foothill ridge, where these sediments are exposed on the daytime surface, they dip northwards under younger Upper Eocene and Oligocene sediments.

The water-bearing rocks are numulite limestone (in the area of the Predgorny Crimea), which is facies replaced by marl and limestone sandstones in the northern part of the aquifer.

The thickness of the water-bearing rocks varies from 9 to 40 m, increasing to the north to 70 m or more in the submerged part. Upper Eocene marls are the upper water-bearing rocks in the submerged part. They overlie Paleocene and Upper Cretaceous sediments.

The depth of the roof varies considerably. Along the southern slope of the Inner Piedmont Ridge, water-bearing karstic limestone is exposed. Towards the north, their roof sinks to a depth of 22-120 metres or more.

On the northern slopes of the Inner Piedmont Ridge (in the recharge area), the water of the Middle Eocene sediments is non-pressure. The depth of the groundwater level also varies considerably, ranging from 24-33 m in the areas adjacent to the recharge area. As the water-bearing rocks sink to the north, the pressure increases to 122 m and more, and the water table rises above the ground surface

The water content of the rocks is uneven. In the feeder area, the flow rate of the downstream sources is 0.1-1.0 dm^3 /s, the flow rate of wells is from 0.2 to 0.4 dm^3 /s. When water-bearing limestones are submerged, their fracturedness decreases, and well flow rates vary from 0.001 to 0.5 dm^3 /s with a decrease of 60-49 m, respectively. Within the Simferopol Uplift, well flow rates range from 0.05 to 3.3 dm^3 /s with a decline of 2.6-2.0 m. The flow rates of the largest sources are 14-15 dm^3 /s. The filtration coefficients are 1.8-8.5 m/d.

The chemical composition of the water is varied. In the feeder area, the waters are fresh with a salinity of 0.3-1 g/dm^3 of calcium-sodium and sodium-calcium bicarbonate composition. In the submerged areas, the mineralisation increases, reaching 25-35 g/dm^3 , and the water composition becomes sodium chloride.

The GWB is fed in the area of the foothill ridge, where sediments come to the surface or are overlain by a thin layer of younger sediments due to infiltration of precipitation. Additional recharge occurs in the basins of the Alma, Salgir and Churuks rivers through alluvial deposits. The areas of discharge are an erosion network, where there are outlets of downstream sources with a flow rate of 259.2 m^3 /d. The Segada deposit has been explored to meet the drinking water needs of Simferopol.

GWBs in Paleocene sediments (UAM570PG200)

The Paleocene deposits ($Р_1$) are common in the foothills of the Crimean Mountains, where the sediments are exposed, and in the Sudak-Feodosia dislocated fold zone. The water-bearing rocks are limestone, with a total thickness of 50-70 m. In the northern direction, the rocks sink and their thickness increases. In the open areas, the hydrogeological conditions of the GWBs are very complex, with the Paleocene rock strata divided into a number of blocks. The water content of water-bearing rocks varies not only in individual blocks, but even within the same block.

The lower aquifer is made up of Upper Cretaceous sediments, while the upper aquifer (in submerged areas) is made up of Paleocene clayey marl. The depth of the aquifer cover varies considerably. Along the southern slope of the Inner Piedmont Ridge, limestone is exposed, karstified and contains groundwater. To the north, the cover sinks to a depth of 120-450 metres or more.

The depth of the groundwater level also varies considerably, ranging from 24-33 m, in the areas adjacent to the feeder area, and increases towards the north and towards the dipping of water-bearing rocks, where they acquire pressure properties.

The water enrichment of rocks is different, the highest is confined to the areas associated with the feeding area, where the flow rates of downstream sources vary from 0.5 to 2 dm^3 /s in some cases to 4-30 dm^3 /s (in the area of Chervonyi Mak village). Chervonyi Mak village), well flow rates reach 26 dm^3 /s with a 6.7 m water table drop (Mizne village), increasing in the area of Bakhchisarai to 35 dm^3 /s with a 16.6 m water table drop.

Since the water-bearing rocks are dominated by limestone, their water content is uneven and depends on the degree of fracturing and crushing in the tectonic fault zones. For example, within the Sultanivske block, the depth of the aquifer cover varies from 97 to 261 m, and the thickness of the aquifer complex reaches 67 m. The water is pressure with a piezometric level of 62 to 200 m. The total flow rate of three wells at self-priming is 22.3 dm^3 /s. The Feodosia block is less watered; mineral water was discovered on the slope of Lysa Mountain at a depth of 71-102 m with a self-pouring flow rate of 3.4 dm^3 /s. In the northern part of the Karadag block, pressure water was discovered at a depth of 240 metres. The freshwater spring Kishka Chokrak is located on the tectonic fault, which is likely to be the source of discharge of the block's water.

The chemical composition of water is varied. In the Piedmont, in the areas adjacent to the aquifer recharge area, the water is usually fresh with a salinity of 0.3-1 g/dm^3 , calcium hydrogen carbonate, calcium sodium and magnesium composition. In the area of submergence, the mineralisation increases, and the water is of sodium chloride composition.

The GWBs is fed in the foothill area, where the sediments come to the surface and are overlain by a thin layer of younger sediments, as well as by water flows through numerous tectonic faults from the sediments above and below the cut. Discharge occurs in the erosion network.

GWBs in Lower Cretaceous sediments (UAM5700K100)

The GWBs in the Lower Cretaceous deposits (K_1) is distributed in the northern part of the Mountainous Crimea, within the Baidar Trough. In the northern direction, it sinks under younger sediments.

Water-bearing rocks are fractured limestones, sandstones, conglomerates and gravels, locally separated by clayey rocks. The thickness varies from 10-20 to 100-140 m. The depth of the roof is from 1 to 6 m in the foothills. In the northern direction, the rocks sink to a considerable depth.

Within the West Crimean synclinorium, the lower aquifer is the Middle Jurassic and Taurian flysch. In some areas, the Lower Cretaceous aquifer complex is not isolated from the Upper Jurassic karstic limestone.

In the foothills of the foothills, the GWBs is non-pressurised, with water-bearing rocks occurring at depths of 3-5 m, and in the village of Povorotne, a well has uncovered Lower Cretaceous water at a depth of 309.1 m. In the northern direction, the Cretaceous reservoir acquires pressure properties. The head varies from 61.6 to 310.0 m in the wells. The piezometric levels in some wells are set above the day surface.

The water enrichment of rocks is uneven, decreasing in the submerged part, and the flow rates of springs in the foothills range from 0.003 to 7 dm^3 /s. The extensive development of the erosion network leads to a large number of springs with flow rates ranging from 0.6 to 3.0 dm /s. ^{3}

Specific discharges in the Beshterek-Zuya interfluve range from 43.2-207.36 m^3 /d, and in the Beshterek-Zuya water intake up to 518 m^3 /d. In the northern direction, where water enrichment decreases, specific flow rates decrease from 34.56-36.28 to 0.86-17.28 m^3 /d. Filtration coefficients vary from 0.156 to 3.76 m/d.

Near the feeding areas, groundwater is usually sodium calcium sulphate-hydrocarbonate and sodium calcium hydrogen carbonate-sulphate with a mineralisation of 0.4-0.8 g/dm^3 . In the submerged part, they become calcium-sodium chloride-hydrogen carbonate, sodium chloride, sodium sulfate-chloride with a mineralisation of up to 4.2 g/dm^3 . As you go down, the mineralisation increases from 1.7-2.2 g/dm^3 to 9-37.9 g/dm^3 .

The aquifer complex is fed by infiltration of precipitation and flow from the Upper Jurassic karst limestone, where groundwater massifs are hydraulically connected. Discharge occurs in the erosion network by numerous sources.

The Simferopolske groundwater deposit has been explored in the Lower Cretaceous sediments.

GWBs in Upper Jurassic sediments (UAM5700J100)

The GWBs in Upper Jurassic sediments (J_3) is distributed within the Main Ridge of the Crimean Mountains (slopes and ravines of the Mountainous Crimea). The water-bearing rocks are intensively karstic fractured limestones, and less often conglomerates and sandstones. Water-bearing zones are controlled by tectonic faults. Hydrogeological conditions are complex. The heterogeneity of limestone, its different dissolution capacities, the presence of tectonic zones and the blocky structure of certain areas create a very complex picture of water movement and discharge. The main ridge, together with the slopes, is a single complex hydrodynamic system. Its upper part is the area of groundwater supply, which, penetrating in complex ways into the middle part of the massifs, accumulates further, in the lower part, either drains or goes to underground runoff and supplies other horizons occupying gipsometrically lower areas. Karst water can also flow directly into the sea. Karst water is discharged in the form of numerous, often ascending springs on the southern and northern slopes of the main ridge, as well as by submarine outlets in the Black Sea.

The thickness of the watered rocks is 58-240 m. According to the current understanding, groundwater flow in carbonate rock masses is carried out in karst aquifer systems. The boundaries of these systems are large tectonic faults that reorient groundwater flow to discharge points. The fault zones of tectonic faults are the zones of maximum watering, where groundwater is directed from areas with lower permeability. The general pattern of the groundwater regime is a well-defined seasonal course. The highest groundwater levels and the highest discharges from springs are associated with the cold season, when the majority of precipitation falls and evaporation losses are low. In the warm season, runoff occurs only after prolonged or intense precipitation.

Pressure fissure karst waters are widespread in the Baidarska basin and in the area of Mount Agarmysh. In the Baidarska Basin, Upper Jurassic limestone waters have been uncovered by wells at depths of 198-230 m (Dzherelne village), 700-750 m (Orlyne village) and deeper. The water is pressurised: the head ranges from 115 to 630 m, and the wells often gush. The well in Orlyne village has a flow rate of 11 dm^3/s; water temperature is 22°C. The Upper Jurassic limestone massif of Mount Agarmysh is deeply karstified and broken by tectonic faults. The springs directly adjacent to it are few in number and their flow rates are insignificant. Most of the karst waters of Mount Agarmysh flow into Cretaceous and younger sediments in the north and north-east. There they rise along faults and come to the surface as springs. The flow rate of the springs is unstable - the maximum is about 800 dm^3/s, the minimum is 16 dm^3/s, and the average per year is 35 dm^3/s.

In total, more than 2,000 springs have been recorded in the Upper Jurassic aquifers, located at different altitudes: from 200-600 to 800-1,280 m (Chatyr-Dag and Babugan-Yayla massifs). Discharge rates of the springs range from 9.3-20.9 to 39,200 dm^3/s.

The largest sources of Upper Jurassic sediments are the Karasu-Bashi spring (the source of the Karasivka River and has an average long-term discharge of 1,390 dm^3 /s, with a maximum discharge of 39,200 dm^3 /s and a minimum discharge of 80 dm^3/s), Skelske spring located on the southeastern edge of the Baidarska basin (has an average long-term discharge of 1,380 dm^3/s, a maximum discharge of 11,400 dm^3 /s, and a minimum discharge of 30 dm^3/s); Ayan spring has an average long-term discharge of 567 dm^3/s, a maximum of 10,000 dm^3/s and a minimum of 16 dm^3/s).

One of the most powerful springs, the Ayan, is the main source of the Salgyr River (average annual discharge of 48.9 thousand metres^3 /d). The Dzhur-Dzhur waterfall, which flows on the southeastern slope of the Northern Demeregi, has an average annual discharge of 20.3 thousand m^3/d.

On the southern bank, the maximum flow rate at the Khastabash spring reached 2,470 dm^3/s, at the Massandra Waterfall spring - 2,476 dm^3/s, the absolute minimum was 9.3 dm^3/s for the first spring, and 20.9 dm^3/s for the second.

The Karasu-Bashi, Skelskoye, Ayan, Karst Khastabash, Massandra Waterfall, etc. springs, whose outlets are associated with tectonic faults, account for 70-80% of the groundwater flow.

The waters of the Upper Jurassic deposits are usually fresh, calcium hydrocarbonate, less often calcium hydrocarbonate-chloride-sulfate with salinity up to 1.0, more often 0.3-0.4 g/dm^3. In some places, in the area of submergence under Lower Cretaceous deposits, mineralisation increases to 2 g/dm^3. On the northern slope of the Main Ridge, the flow of powerful springs is regulated, and they supply water to large reservoirs (Ayanskoye, Belogorskoye, Taiganskoye, etc.).

The aquifer complex is fed by infiltration of precipitation. Discharge occurs partly in areas of tectonic faults in the form of large springs.

Fissure-karst and fissure waters of the Upper Jurassic sediments are the main source of water supply for numerous settlements of the Mountainous Crimea and resorts.

2 SIGNIFICANT ANTHROPOGENIC IMPACTS ON THE QUANTITATIVE AND QUALITATIVE STATUS OF SURFACE AND GROUNDWATER, INCLUDING POINT AND DIFFUSE SOURCES

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be prepared (updated) after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation..

2.1 Surface water

2.1.1 Pollution by organic substances

2.1.2 Pollution with biogenic substances

2.1.3 Pollution with hazardous substances

2.1.4 Accidental pollution and impact of contaminated areas (landfills, sites, zones, etc.)

2.1.5 Hydromorphological changes

Hydromorphological changes are one of the main water-environmental problems (SWMI) that impede the achievement of the environmental objectives set and enshrined in the RBMP. Hydromorphological changes, as a result of economic activity, affect the conditions of existence of aquatic communities. The presence of hydromorphological changes in SWBs leads to the deterioration of the ecological status of many SWBs in the basin.

Hydromorphological changes are divided into types:

- disruption of the continuity of water flow and habitats - longitudinal disruption of the continuity of rivers and habitats (transverse artificial structures in the river channel, interruption of water flow, disruption of the free flow of rivers, movement of sediments, migration of fish and other aquatic life);
- disruption of the hydraulic connection between river channels and their floodplains;
- hydrological changes (water abstraction, hydropicking / fluctuations in water levels of artificial origin);
- morphological changes (modification of the morphology of the riverbed, banks, and adjacent parts of the floodplain, e.g. straightening).

Hydromorphological changes, namely, changes or disturbances in the anthropogenic morphology of riverbeds, banks, and floodplains, are one of the main water and environmental problems in the Crimean river basin.

Hydromorphological changes in the basin are caused by excessive overregulation, development and agricultural activities.

Disruption of the free flow of rivers. Dams and other artificial cross structures located in riverbeds were built primarily to accumulate water, with its subsequent use for irrigation, water supply for the population and industry. In the Crimean river basin, 51 SWBs have been identified where there is a disruption of the continuity of water flow and environment (overregulation).

Disruption of the hydraulic connection between river channels and floodplains. The hydraulic connection between the riverbed and the floodplain plays an important role in the functioning of aquatic ecosystems, providing water for important habitats for fish and aquatic life, and has a positive impact on the condition of surface and groundwater.

The assessment of this type of hydromorphological changes is included in the hydromorphological protocol for assessing the SWBs, which is used by the SES in the state monitoring of surface waters (indicators No. 10: "Interaction between the channel and the floodplain: 10a - Possibility of floodplain inundation, 10b - Limiting factor for the development of horizontal channel deformations").

Hydrological changes. Hydrological changes affect water bodies through water withdrawals and fluctuations in water levels below dams, and as a result, lead to changes in the regime and distribution of river flows. Discharges, water withdrawals and artificial periodic fluctuations in water levels (hydroelectricity) are key pressures that require compensatory measures to be implemented on a river basin-wide scale. In the Crimean river basin, there are no SWBs with hydrological changes.

Decreased natural flows in the context of global warming and natural water shortages, reduced flow velocities and the formation of stagnant zones contribute to eutrophication processes, and, as a result, lead to a deterioration in biodiversity and degradation of aquatic ecosystems.

Morphological changes. The main factors that adversely affect the natural morphology of river channels, banks, and floodplains in the Crimean river basin are urbanisation, flood protection, and agriculture. As a result of these activities, rivers in certain areas are straightened, dredged, and banked, the floodplain is ploughed up almost to the channel, and

its natural vegetation is changed.

Within the Crimean river basin, the river channelisation occurs at 119 SWBs.

Reduced variability in channel depth and width, disruption of the natural balance of erosion and accumulation, narrowing of the inter-dam space and restriction of free river meandering lead to an impoverishment of the composition and reduction in the number of biological indicators, such as fish, benthic invertebrates, higher aquatic vegetation, and phytoplankton.

Most cases of hydromorphological changes occur on small rivers in the basin. Small rivers, according to the classification of rivers by basin area used to determine the SWBs, are rivers with a basin area of up to 100 km2.

2.2 Groundwater

2.2.1 Pollution

Point sources

As of 2012, 24 major groundwater pollution sites and 6 water intakes were identified within the AR of Crimea, where pollution was observed. At these water intakes, the normative indicators of mineralisation, total hardness, increased content of sulphates, chlorides, nitrates, iron, pesticides, oil products, increased coli-index and heavy metals were recorded.

In addition, 67 local groundwater pollution sites were identified within the plain part of Crimea in Quaternary, Neogene, Paleogene and Cretaceous sediments (main pollutants: nitrates 46.0-148.0 mg/dm^3 ; total hardness 8.4-12.2 mmol/dm^3 ; Bacterial coliform index (lactose-positive intestinal bacteria: 6-2380 colony forming units (CFU)/dm^3 , ammonium - up to 5.4 mg/dm).[3]

Diffuse sources

The main cause of groundwater pollution was intensive exploitation for water supply and irrigation, as well as discharges of contaminated wastewater from industrial (Armenian-Krasnoperekop industrial complex) and agricultural facilities in the area of aquifer recharge, and the lack of sewerage systems in rural areas. The most contaminated aquifers are the first ones from the surface, which are poorly protected or unprotected from vertical migration of pollutants. Groundwater in the area of influence of these centres has increased mineralisation and overall hardness, as well as nitrate and bacteriological contamination.

Pesticide use in 2004-2013 was 0.94-1.25 thousand tonnes per year (0.75-1.0 kg/ha). Mineral fertiliser application in terms of 100% of nutrients in 2011-2013 was 204.0-262.7 thousand cwt/year.

Due to the annexation of the Autonomous Republic of Crimea, there is no up-to-date data on groundwater pollution in this territory.

2.2.2 Volumes/reserves

The territory of Crimea is characterised by complex conditions of groundwater resources formation. The plain part of Crimea belongs to the zone of insufficient moisture, and the mountainous part - to the zone of unstable moisture.

The projected groundwater resources of the AR of Crimea are 1300.8 thousand m^3 /du, including 135.6 thousand m^3 /d within the Hydrogeological Folded Region of Crimea and the rest within the Black Sea Artesian Basin.

The approved exploitable groundwater reserves amount to 1196,221 m^3 /d. The exploration of forecasted resources in Crimea is the highest in Ukraine and amounted to 92% as of 2014. 99 production sites within 21 groundwater deposits were explored in total.

Due to the significant increase in anthropogenic pressure after the annexation of Crimea (1.5-fold increase in population, significant increase in the military sector), the pressure on groundwater has increased accordingly. The occupiers' undermining of the Kakhovka hydroelectric power station dam also had a negative impact on the formation of groundwater resources on the peninsula. All of this suggests that all major groundwater bodies on the peninsula used for water supply are at risk of not reaching good quantitative status.

The impact of military operations on the status of GWBs

Russian aggression is a significant negative factor in the anthropogenic impact on the environment.

Non-pressure GWBs. The quality of non-pressure GWB may be affected by the ingress of pollutants (heavy metals, fuels and lubricants, organic pollution, nitrates, etc.) from the surface in areas of intense shelling. The destruction of industrial facilities can lead to the ingress of various pollutants into the soil and rocks of the aeration zone, and in the long run, negatively affect the quality of groundwater. The occupiers do not pay attention to nature conservation, and the regime of protected areas has been significantly violated. The quality of the non-pressure water treatment plants is at risk of not achieving environmental goals.

As for the quantitative state, it is quite vulnerable, mainly due to the impact of climatic factors. The drainage

of the Kakhovka Reservoir had a negative impact on the quantitative state of non-pressure GWB.

Pressure GWBs. The Russian annexation of Crimea was accompanied by a massive resettlement of the population from Russia. As a result, the population from about 2 million people at the beginning of 2014 increased to 2.5 million in 2023, and according to unofficial data - to 3 million people. Given that the groundwater resources of Crimea are limited and that the highest exploration of the GWB was noted here, one should expect a deterioration in the quantitative state of the pressure groundwater resources with the excess of extraction of operational groundwater reserves. Since quantitative and qualitative characteristics of groundwater are interrelated, deterioration of the quality of the discharge groundwater should also be expected. Excessive water withdrawal may cause the pulling up of saline sea water or water from adjacent aquifers with excessive content of chemical elements and compounds of geogenic origin. On the other hand, the formation of powerful depression sinkholes will lead to intensified migration of pollutants from the surface.

Assessment of the risk of not achieving good status

Taking into account the above factors, the qualitative and quantitative state of both non-pressure and pressure GWB in Crimea is at risk of not achieving environmental objectives (Table 15).

Table 15. Risk assessment of failure to achieve good qualitative (chemical) and quantitative status

GWB code	GWB and GWB groups	Quality risk		Quantitative risk	
		without risk/ at risk	at risk: the reason	without risk/ at risk	at risk: the reason
Non-pressure GWB					
UAM5700Q100	GWB in alluvial Neopleistocene-Holocene sediments	at risk	Insecurity from surface pollution. Diffuse sources (nitrates, pesticides). Point sources (elements and compounds used in technological processes	at risk	increase in production
UAM570NQ100	GWB in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments	at risk		at risk	increase in production
Pressure GWB for the pressure GWB					
UAM5700N100	GWB in meotic and pontic sediments	at risk	Intensification of contaminant migration due to the formation of depression sinkholes	at risk	increase in production
UAM5700N200	GWB in Middle-Upper Sarmatian-Meotian-Pontic sediments	at risk	Intensification of contaminant migration due to the formation of depression sinkholes	at risk	increase in production
UAM5700N300	GWB in the Middle-Upper Sarmatian sediments	at risk	Intensification of pollution migration due to the formation of depression troughs. Increased salinity due to seawater upwelling	at risk	increase in production
UAM5700N400	GWB in Middle Miocene sediments	at risk	Intensification of contaminant migration due to the formation of depression sinkholes	at risk	increase in production
UAM570PG100	GWB in Eocene sediments	at risk	Intensification of contaminant migration due to changes in hydrodynamic conditions as a result of increased operation	at risk	increase in production
UAM570PG200	GWB in Paleocene sediments	at risk	Intensification of contaminant migration due to changes in hydrodynamic conditions as a result of increased operation	at risk	increase in production

GWB code	GWB and GWB groups	Quality risk		Quantitative risk	
UAM5700K100	GWB in Lower Cretaceous sediments	at risk	Intensification of contaminant migration due to changes in hydrodynamic conditions as a result of increased operation	at risk	increase in production
UAM5700J100	GWB in Upper Jurassic sediments	at risk	Intensification of contaminant migration due to changes in hydrodynamic conditions as a result of increased operation	at risk	increase in production

3 ZONES (TERRITORIES) THAT ARE SUBJECT TO PROTECTION AND THEIR MAPPING

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be prepared (updated) after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation.

3.1 Emerald network sites

The Emerald Network is an ecological network consisting of special areas for the conservation of biological diversity created (designated) in accordance with the Convention on the Conservation of Wild Flora and Fauna and Natural Habitats in Europe (Bern Convention). Its goal is to ensure the long-term survival of species and habitats listed in the Bern Convention that require special protection.

On 30 November 2018, six countries: Belarus, Georgia, the Republic of Moldova, Norway, Switzerland and Ukraine officially approved the lists of Emerald Network sites on their territories. The updated list of Emerald Network sites was approved on 2 December 2022. The Emerald Network of Ukraine includes 377 territories[1] , and covers about 8% of Ukraine's territory.

There are 43 sites of the Emerald Network in the Crimean river basin. By category (Fig. 5), the sites are divided into:

– national natural park - 1
– protected area - 27
– nature reserve - 6
– nature reserve - 9

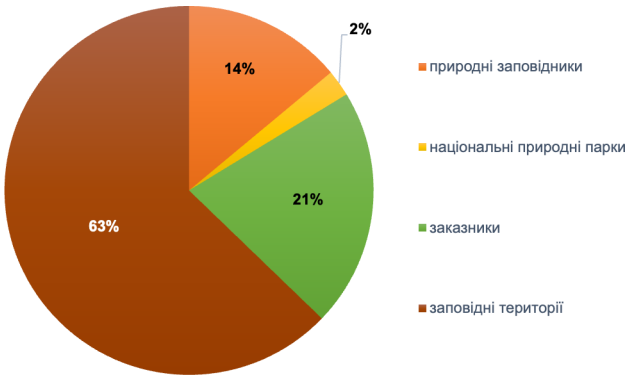

Figure 5 Breakdown of Emerald Network facilities by category (%)

None of the facilities has a management and development plan in place.

3.2 Sanitary protection zones

Resolution of the CMU "On the Legal Regime of Sanitary Protection Zones of Water Bodies" of 18 December 1998 No. 2024, these zones are classified as the so-called first zone (strict regime) of compliance with the use regime. The Resolution provides for a number of permitted and prohibited activities within drinking water intakes.

According to the EU WFD (Article 7), "Member States shall identify in each river basin:

- All surface/groundwater bodies used for abstraction of water intended for human consumption, providing on average more than 10 m³ of water per day or providing water consumption for more than 50 people and
- Those water bodies that are intended for future use for the same purpose."

3.3 Protection zones for valuable aquatic bioresources

Areas designated for the protection of economically important aquatic species or areas for the protection of valuable aquatic bioresources include those areas where such aquatic resources of significant economic value are found or cultivated.

Depending on the specifics of the protection zone for valuable aquatic bioresources, the monitoring programme may include additional indicators or sampling frequency.

According to the Resolution of the CMU No. 1209 "On Approval of Tariffs for Calculating the Amount of Compensation for Damage Caused by Illegal Harvesting (Collection) or Destruction of Valuable Aquatic Bioresources" dated 21 November 2011 (as amended by the Resolution of the CMU No. 1039 dated 6 October 2021), the list of valuable bioresources includes both rare and common fish species throughout Ukraine.

At the same time, according to Article 1 of the Law of Ukraine "On Fisheries, Commercial Fishing and Protection of Aquatic Bioresources", a fishery water body (part thereof) is a water body (part thereof) that is used or may be

used for fisheries purposes.

Thus, taking into account the above, as well as the lack of an appropriate legislative and regulatory framework, the protection zones for valuable bioresources in Ukraine have not been defined.

3.4 SWBs/ GWBsr used for recreational, medical, resort and health purposes, as well as water intended for bathing

Recreation areas of water bodies are land plots with adjacent water space intended for organised recreation of the population on the coastal protective strips of water bodies. Places of mass recreation are determined by local governments in accordance with the powers vested in them every year before the start of the summer swimming season. Water protection zones are established along rivers, around lakes, reservoirs and other water bodies, within which land plots are allocated for coastal protection strips.

It is prohibited in water protection zones and coastal protection zones:

- storage and use of pesticides and fertilisers;
- construction of cemeteries, summer camps for livestock, manure storage facilities, cattle cemeteries, waste dumps, filtration fields, liquid and solid waste storage facilities, etc;
- discharge of untreated wastewater;
- construction of any structures (except for hydrotechnical, hydrometric and linear structures), including recreation centres, summer cottages, garages and car parks;
- Washing and maintenance of vehicles and equipment.

Requirements for the location and organisation of water body recreation areas:

- To organise recreational areas on water bodies, their owners or lessees are required to agree the operation of the beach with the State Service of Ukraine for Food Safety and Consumer Protection before the start of each swimming season.
- the recreation area should be located outside the sanitary protection zones of industrial enterprises. The recreation area should be located at the maximum possible distance (at least 500 m) from sluices, hydroelectric power plants, wastewater discharge sites, stables, livestock watering places and other sources of pollution.
- beaches should not be located within the first zone of the sanitary protection belt of drinking water sources.

Environmental goals for recreational areas:

- The water quality of reservoirs and rivers used in recreational areas must meet the requirements of sanitary legislation.
- the composition and properties of water in the area of recreational water use must meet the requirements for physical, chemical and sanitary-microbiological indicators.

Requirements for water monitoring in recreational areas:

- water sampling for departmental control in water bodies should be carried out annually by local authorities at least 2 times before the start of the bathing season (at a distance of 1 km upstream of the bathing area on watercourses and at a distance of 0.1-1.0 km in both directions from it on water bodies, as well as within the bathing area).
- during the swimming season, such water sampling shall be carried out at least twice a month at at least two points selected in accordance with the nature, length and intensity of use of swimming areas.

Pursuant to CMU Resolution No. 264 of 06.03.2002 "On Approval of the Procedure for Registration of Places of Mass Recreation on Water Bodies", local executive authorities and territorial fishery protection authorities are required to identify on maps and schemes land plots and water areas suitable for the organisation of beaches, boat rental facilities, water attractions, as well as places for water sports and places for amateur and sport fishing in winter.

Approved copies of the maps are submitted to the emergency rescue services that serve water bodies in their area of responsibility and to the regional coordination emergency rescue centres of the State Specialised Emergency Rescue Service on Water Bodies of the Ministry of Emergencies (currently the State Emergency Service).

Information on places of mass recreation is submitted annually by 1 April by local governments, and information on places of recreational and sport fishing is submitted on 10 February and 30 October by territorial fish protection authorities to regional coordination emergency and rescue centres of the SES.

3.5 Areas vulnerable to (accumulation of) nitrates

Ukraine has approved a methodology for determining nitrate vulnerability zones (Order of the Ministry of Ecology of Ukraine No. 244 dated 15.04.2021), as required by the EU Nitrate Directive. The methodological approach is to use a large amount of high-resolution spatial and temporal data, mainly surface and groundwater monitoring data, but the definition of these zones should also use statistical data such as the number of livestock, fertiliser application and surplus calculations for nitrogen. All this information of high quality and sufficient reliability is necessary to identify nitrate vulnerable areas where mandatory measures to reduce nitrate pollution should be taken. At present, the existing

surface water monitoring network is insufficient in terms of its integrity and spatial coverage to apply the developed method, and groundwater monitoring is not carried out at all.

Therefore, given that in Ukraine:

- the highest percentage of arable land in the world (53.9%, 2021 data), while the ploughed-out agricultural land rate is 78.2%;
- lack of representative and reliable information on the content of nutrients in surface and groundwater;
- Eutrophication of water bodies is a widespread phenomenon;

In the short term, it is proposed to designate the entire territory of Ukraine as a nitrate vulnerable area. This approach is in line with the EU WFD, reflects the current very limited availability of the necessary information to identify nitrate vulnerable areas, is used in many EU countries (e.g. Germany, Austria, Lithuania and Romania), is easier to assess, and allows for refinement or identification of nitrate vulnerable areas in subsequent reporting periods based on improved, more reliable information.

This approach avoids competition among farmers in the short term and allows all farmers to be financially supported through future rural development programmes without the need to differentiate between different regions. It also allows for the general measures of the action programme to be applied to the entire territory, but for more stringent action programme measures to be applied only to regions where (based on available data) clear agricultural stress can be proven and specified in a step-by-step manner.

Therefore, in the medium term, it is necessary to focus on substantial and gradual improvement of the monitoring network (both groundwater and surface water) and database to ensure a more detailed approach to zone identification and monitoring, and thus achieve full compliance with the WFD with the identified nitrate vulnerable zones during the second cycle of the RBMP (2031-2036with the WFD with the identified nitrate vulnerable zones during the second cycle of the RBMP (2031-2036).

3.6 Vulnerable and less vulnerable areas identified in accordance with the criteria approved by the Ministry of Environment

As of 2023, no vulnerable or less vulnerable zones have been identified in Ukraine.

The regulatory document governing this issue is the order of the Ministry of Environment dated 14 January 2019 No. 6 (Registered with the Ministry of Justice of Ukraine on 05 February 2019 under No. 125/33096) On Approval of the Procedure for Determining the Population Equivalent of a Settlement and the Criteria for Determining Vulnerable and Less Vulnerable Zones.

Also, according to the Law of Ukraine On Water Disposal and Wastewater Treatment of 12 January 2023, Article 12. *Powers of local self-government bodies*, the powers of local self-government bodies in the field of water disposal (State Agency of Water Resources of Ukraine) include:

- upon the submission of the central executive body implementing the state policy in the field of water sector development, identification of vulnerable and less vulnerable zones in accordance with the criteria approved by the central executive body ensuring the formation of the state policy in the field of environmental protection.

4 MAPPING OF THE MONITORING SYSTEM, RESULTS OF MONITORING PROGRAMMES IMPLEMENTED FOR SURFACE WATER (ECOLOGICAL AND CHEMICAL), GROUNDWATER (CHEMICAL AND QUANTITATIVE), AREAS (TERRITORIES) TO BE PROTECTED

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be prepared (updated) after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation.

4.1 Surface water

4.1.1 Monitoring system

4.1.2 Hydromorphological assessment / status

4.1.3 Chemical status assessment

4.1.4 Ecological status assessment

4.1.5 Ecological potential assessment

4.2 Groundwater

4.2.1 Monitoring system

The quantitative and chemical state of groundwater is monitored within the framework of the state groundwater monitoring system and changes in the state are predicted both under natural conditions and under the influence of human activity. Quantitative and chemical monitoring is carried out in the same observation wells. The monitoring is carried out in both non-pressure and pressure aquifers under natural, slightly disturbed and disturbed conditions. The disturbed conditions are investigated within the operational water intakes.

The state groundwater monitoring includes diagnostic and operational monitoring, the indicators and frequency of which are defined in accordance with the WFD and are listed in Annex 2 of the Procedure for State Water Monitoring (Table 16). The components of state monitoring of groundwater bodies include monitoring of quantitative, chemical and physico-chemical indicators. The Procedure for State Water Monitoring does not define the monitoring network (in particular, the number of monitoring points), but establishes the frequency and indicators to be monitored.

Table 16. Procedure for state water monitoring - Indicators and frequency of state monitoring of GWB

The subject of the monitoring	Name of the indicator	Frequency.	Notes.
Diagnostic monitoring***.			
State Geological Survey	levels	one to three times a month	amount of water
	Temperature, redox potential permanganate oxidisability, mineralisation	at least twice a year	
	macro components: - Calcium, magnesium, sodium, potassium, hydrocarbonate ions, total ferric iron, - fluoride	four times a year	
	microcomponents	once a year	the list is determined taking into account the specifics of land use and indicators given in DsanPiN 2.2.4-171-10
	Pollutants according to the list of pollutants for determining the chemical state of surface and groundwater bodies and the environmental potential of artificial or significantly altered surface water bodies approved by the Ministry of Ecology and Natural Resources	four times a year	
	Specific synthetic pollutants (pesticides, pharmaceuticals and other substances)	once every two to six years	the list is determined taking into account the specifics of land use
	Specific non-synthetic pollutants (uranium, radium, radon and other substances)		

The subject of the monitoring	Name of the indicator	Frequency.	Notes.
Operational monitoring***.			
State Geological Survey	Hydrogeological regime: groundwater levels	one to five times a month	
	total hardness, carbonate, non-carbonate mineralisation	quarterly, at least twice a year	
	phenols oil products synthetic surfactants	once every one to two years	
	macro components: hydrogen carbonate ions, calcium, potassium, magnesium sodium, silicon, total ferric, fluorine	quarterly, at least twice a year	
	microcomponents: aluminium, argentum, beryllium, cobalt, copper, manganese, molybdenum, nickel, selenium, strontium, chromium, zinc	once a year	The list of micro-components is determined taking into account the specifics of land use
	pollutants according to the list of pollutants for determining the chemical state of surface and groundwater bodies and the environmental potential of artificial or significantly altered surface water bodies approved by the Ministry of Ecology and Natural Resources	quarterly, at least twice a year	
	Specific synthetic pollutants (pesticides, pharmaceuticals and other substances);	once every six years	the list is determined taking into account the specifics of the array
	Specific non-synthetic pollutants (uranium, radium, radon and other substances)		

** *Data are updated and supplemented taking into account the specifics of the array.*
*** *Data are updated and supplemented taking into account the specifics of the array and based on the results of diagnostic monitoring*

According to Geoinform, as of 1 January 2013, the state groundwater monitoring network in Crimea consisted of 97 observation points, including 45 groundwater observation points (non-pressure groundwater monitoring stations), 19 interstitial water observation points (pressure groundwater monitoring stations) and 33 wells at water intake sites.

The state of the observation network after the annexation of Crimea in 2014 is unknown.

The monitoring network needs to be restored and improved, which will be possible only after de-occupation. The placement of observation points should be based on the principle of representativeness, which in the case of groundwater involves taking into account the prevalence of GWB and the homogeneity/homogeneity of natural and anthropogenic conditions of groundwater resource formation and their changes over time.

Given the long period of no monitoring and the limited number of observation points, it is necessary to conduct diagnostic monitoring of groundwater quality indicators of all identified GWB at all observation wells. All identified and within the Crimean river basin are subject to diagnostic and operational monitoring procedures, as all non-pressure GWB are associated with surface ecosystems, while pressure GWB are used for water supply to the population, and the average water intake from them for drinking and domestic needs exceeds 100 cubic metres per year.

4.2.2 Chemical condition assessment / risk assessment

4.2.3 Assessment of groundwater volumes/reserves

5 A LIST OF ENVIRONMENTAL OBJECTIVES FOR SURFACE WATER, GROUNDWATER AND PROTECTED AREAS (TERRITORIES) AND DEADLINES FOR THEIR ACHIEVEMENT (IF NECESSARY, JUSTIFICATION FOR SETTING LESS STRINGENT OBJECTIVES AND/OR POSTPONEMENT OF DEADLINES FOR THEIR ACHIEVEMENT).

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be prepared (updated) after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation.

Environmental objectives for surface water, groundwater and protected areas (territories) are set separately.

Surface water:

- Prevention of deterioration of all SWBs;
- Achievement/maintenance of good ecological and chemical status of all natural SWBs (rivers, lakes, transitional and coastal waters);
- Achieving/maintaining good ecological potential and chemical status of HMWBs and AWBs;
- Gradual reduction to the complete absence of hazardous substances.

Groundwater:

- Prevention of deterioration of all GWBs;
- Achieving/maintaining good quantitative and chemical status of all GWBs;
- Preventing and limiting groundwater pollution.

Areas (territories) to be protected:

Achieving standards and targets as required by applicable law for:

- Emerald Network facilities;
- sanitary protection zones;
- protection zones for valuable aquatic bioresources;
- surface/ground water bodies used for recreational, medical, resort and health purposes, as well as water intended for bathing;
- areas vulnerable to (accumulation of) nitrates;
- vulnerable and less vulnerable areas identified in accordance with the criteria approved by the Ministry of Environment.

In cases where several objectives are set for a particular SWBs or GWBs, the most stringent ones should be applied, while all other objectives should also be met.

In some cases, the deadlines for achieving environmental objectives or the targets themselves may be postponed as an exception.

It is allowed to postpone the date of achievement of the objective for a period of 6 years (until 2036), but not longer than 12 years (until the end of 2042) from the end of the implementation of the first cycle of the RBMP (2030).

An exemption applied to a particular SWB or GWB should not create a risk of not achieving the environmental objectives of the upstream (for SWB) or downstream (for SWB) and adjacent (for GWB) body or bodies.

The exceptions include:

- **Achieving less stringent objectives or postponing the date of their achievement** due to technical reasons (e.g. lack of a technical solution, technical impracticality or impracticability), disproportionately high cost or the existing natural state of the water body that does not allow for its improvement in a timely manner (e.g. inert groundwater to be restored). The presence or absence of disproportionality is determined by the results of an economic assessment of costs and benefits;
- **Temporary deterioration of the status (objectives) as a result of an unforeseen force majeure of** natural origin (e.g. extreme flood, drought) or anthropogenic (accident);
- **New physical changes to the SWB as a result of infrastructure projects** are permitted if the benefits to society are higher than the environmental benefits and there is no other option to avoid these changes for technical and/or financial reasons. Water pollution from point or diffuse sources is not allowed.

Environmental objectives for surface water

The RBMP is aimed at achieving/maintaining ‘good’ ecological status for all designated SWBs. For surface waters, this

is defined as ‘good’ ecological status and ‘good’ chemical status. For heavily modified and artificial SWBs, the main environmental objective is to achieve ‘good’ ecological potential.

Environmental objectives for groundwater

Environmental targets are set for each GWB in terms of both their quantitative and qualitative (chemical) status. According to the WFD, the main objective is to achieve good groundwater status. Additional targets for each individual GWB are set depending on the existing quantitative and qualitative state of the MHZ, their use or potential use for public water supply, anthropogenic pressure and possible impact on surface ecosystems.

The main criterion for the good quantitative condition of the GWB should be the absence of groundwater depletion, i.e. the condition of aquifers in which, under the influence of artificial drainage, the decrease in groundwater levels has reached such indicators that exclude the possibility of further use of the horizon to meet the needs of society using traditional technical means.

The assessment of the depletion of the GWB is based on information on the level regime, groundwater extraction volumes and their comparison with the resources and approved operational reserves.

For non-pressure GWB, the criteria for good condition also include the appropriate condition of the associated surface water bodies and the absence of negative impacts on surface ecosystems, primarily vegetation suppression.

The criteria for good quality (chemical) condition of the GWB are the natural background content of chemical elements and compounds and the standards set for drinking water by the State Sanitary Norms and Rules "Hygienic Requirements for Drinking Water Intended for Human Consumption" (DSanPiN 2.2.4-171-10).

Quantitative state of non-pressure GWB

Currently, there is no information on the current state and trends in the levels of non-pressure GWB in the Crimean river basin.

The environmental objective will be clarified after de-occupation. It is tentatively to avoid depletion of groundwater and no deterioration in its quantitative state.

Qualitative (chemical) state of non-pressure GWB

Non-pressure groundwater in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments in their natural state are characterised by high mineralisation. In places where non-pressure WRF waters are used to meet drinking needs, the standards of Sanitary and Epidemiological Norms 2.2.4-171-10 should be used, except for those elements and compounds whose content exceeds the standard in the natural state. For such components, the values of natural backgrounds should be used.

The environmental target will be updated after de-occupation. It is estimated to be no deterioration in the quality of the environment.

Quantitative state of pressure GWB

There is no information on the current quantitative state of the pressure GWB. According to the available data, the quantitative state of the pressure GWB is expected to deteriorate in the coming years due to intensified operation.

The environmental target will be updated after de-occupation. The target is no deterioration in the quantitative state.

Qualitative (chemical) state of pressure GWB

The environmental objective is to ensure that the content of elements and compounds complies with Sanitary and Epidemiological Norms 2.2.4-171-10, except for those components whose elevated content in groundwater is of natural origin. These are components whose natural background content is close to the maximum permissible concentrations. In particular, in the Crimean river basin, there is a naturally high dry residue of GWB in Neogene sediments.

An additional environmental objective is to avoid deterioration in the quality of the discharge GWB, but conclusions on trends in chemical composition should be based on reliable monitoring data, since the content of components in water is subject to natural fluctuations. Therefore, for each GWB, it is necessary to have information on the interval of fluctuations in the content of water chemical components.

For operational water intakes, the absence of adverse changes in water quality is determined by comparing current indicators with those at the time of approval of reserves.

The lack of information on the current state of the GWB allows to define environmental objectives only in the most general form. After the de-occupation, the environmental objectives for each GWB will be specified.

Table 5.2.1 shows the environmental targets for the GWB and their groups.

Improvement of the condition of all designated GWB should be expected much later than improvement of surface water bodies due to their position in the geological environment and complex natural and anthropogenic conditions. Given the current situation, such improvement should not be expected before 2042.

Table 17. Achievement of the environmental objectives of the GWBs in 2030

№	GWBs code	Name of the GWBs	Quantitative state		Chemical state		Reason for postponement[1]	Reasons for setting less stringent targets[2]	Notes.[3]
			Objective	Timeframe for achievement	Objective.	Timeframe for achievement			
Groups of non-pressure GWBs									
1	UAM5700Q100	GWBs in alluvial Neopleistocene-Holocene sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
2	UAM570NQ100	GWBs in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments	Good condition	2042	Good condition	2042	T, S	NZ	EO
Pressure GWBs **and groups of pressure** GWBs									
3	UAM5700N100	GWBs in meotic and pontic sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
4	UAM5700N300	GWBs in Middle-Upper Sarmatian-Meotian-Pontic sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
5	UAM5700N400	GWBs in the Middle-Upper Sarmatian sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
6	UAM5700N500	GWBs in Middle Miocene sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
7	UAM570PG100	GWBs in Eocene sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
8	UAM570PG200	GWBs in Paleocene sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
9	UAM5700K100	GWBs in Lower Cretaceous sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO
10	UAM5700J100	GWBs in Upper Jurassic sediments	Good condition	2042	Good condition	2042	T,S	NZ	EO

1 T - technical reasons, H - disproportionately high cost, S - existing natural state
2 Not applicable (NA) in the first cycle of the RBMP 2025-2030
3 AR - risk assessment of failure to achieve good status, ES - ecological status according to monitoring data, CS - chemical status according to monitoring data, EA - expert assessment

6 ECONOMIC ANALYSIS WATER USE

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be prepared (updated) after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation

6.1. Economic development of the basin area

6.2. Characteristics of current water use

6.2.1. Municipal water use

6.2.2. Industrial water use

6.2.3. Water use in agriculture

6.2.4. Water use in transport

6.2.5. Other types of water use

6.3. Forecast of water demand by major economic sectors

6.4. Tools of economic control

6.4.1 Payback of water resources use

6.4.2 Water tariffs

7 A REVIEW OF THE IMPLEMENTATION OF PROGRAMMES OR ACTIVITIES, INCLUDING WAYS TO ACHIEVE THE GOALS SET BY

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be prepared (updated) after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation

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8 A COMPLETE LIST OF PROGRAMMES (PLANS) FOR THE RIVER BASIN OR SUB-BASIN AREA, THEIR CONTENT AND PROBLEMS, THAT ARE TO BE SOLVED

Due to the lack of access to up-to-date information (data is not available since 2014), the section will be prepared after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation, after the assessment of the risks of failure to achieve the environmental objectives of the SWBs and GWBs, the inventory of treatment facilities (TF) and sewerage networks (SN), and the preparation of the programme of measures (PoM).

8.1 Surface water

8.1.1 Measures to reduce pollution by organic matter (diffuse and point sources)

8.1.2 Measures to reduce pollution by nutrients (diffuse and point sources)

8.1.3 Measures to reduce pollution by hazardous substances (diffuse and point sources)

8.1.4 Measures aimed at improving/restoring the hydrological regime and morphological indicators

8.1.5 Measures to reduce the negative impact of infrastructure projects

8.2 Groundwater

8.2.1 Measures aimed at improving/restoring the hydrological regime and morphological indicators

8.2.2 Measures aimed at preventing groundwater depletion

8.2.3 Planned infrastructure projects and measures to reduce their impact on surface water

8.3 Other measures

9 REPORT ON PUBLIC INFORMATION AND PUBLIC DISCUSSION OF THE DRAFT RIVER BASIN MANAGEMENT PLAN

The main requirements for organising and conducting public consultations by executive authorities on the formation and implementation of state policy are set out in the Procedure approved by Resolution of the Cabinet of Ministers of Ukraine No. 996 of 3 November 2010 'On Ensuring Public Participation in the Formation and Implementation of State Policy' (Official Gazette of Ukraine, 2010, No. 84, p. 2945) (hereinafter - the Procedure). In accordance with paragraph 5 of the Procedure, public consultations are organised and conducted by the executive body that is the main developer of the draft legal act. In accordance with paragraphs 11 and 12 of the Procedure, public consultations on draft regulatory legal acts that define strategic goals, priorities and objectives in the relevant area of public administration, affect the vital interests of citizens, including those that affect the state of the environment, are mandatory in the form of public public discussion and/or electronic public consultations.

In accordance with the second paragraph of clause 7 of the Procedure for Developing a River Basin Management Plan, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 336 'On Approval of the Procedure for Developing a River Basin Management Plan' of 18 May 2017 (Official Gazette of Ukraine, 2017, No. 43, Article 1342), public discussion of the draft river basin management plan is held within at least six months from the date of its publication. In accordance with the first paragraph of clause 8-1, the public has the right to provide comments and suggestions to information on the main anthropogenic impacts on the quantitative and qualitative state of surface and groundwater, including point and diffuse sources, within six months from the date of their publication on the official website of the Ministry of Ecology.

Public discussion of the draft RBMP

The information notice on the public discussion of the draft River Basin Management Plans (2025-2030) and the draft RBMPs was published on the official website of the State Agency of Ukraine for Water Resources on 21 December 2023 at the link: https://davr.gov.ua/informacijne-povidomlennya-pro-provedennya-publichnogo-gromadskogoobgovorennya-proyektiv-planiv-upravlinnya-richkovimi-basejnami-20252030.

Information on the start of public discussion of the draft RBMPs and the draft RBMPs will be published on the official website of the Ministry of Ecology on 25 December 2023 at https://mepr.gov.ua/ukrayina-zavershyla-robotu-nad-9-proyektamy-planiv-upravlinnyarichkovymy-basejnamy-rozpochalosya-gromadske-obgovorennya/.

According to the information published in the announcement of the public discussion of the draft River Basin Management Plans for 2025-2030, comments and suggestions were accepted in paper or electronic form at the following address: State Agency of Water Resources of Ukraine, 8 Velyka Vasylkivska St., Kyiv, 01024, and by e-mail to rbmp@davr.gov.ua. The deadline for submitting comments and suggestions to the draft RBMP was set for 21 June 2024.

As part of the public discussion, the State Agency of Water Resources, with the support of the EU4Environment project, initiated a series of public engagement activities, the schedule of which was announced on 28 February 2024 on its official website at https://davr.gov.ua/news/derzhvodagentstvo-iniciyuye-zahodi-iz-zaluchennya-gromadskosti-doobgovorennya-proyektiv-purb.

In particular, an invitation to public discussions of the draft Crimean RBMP was published on the official website of the State Agency of Ukraine for everyone on 13 March 2024 at https://davr.gov.ua/news/gromadske-obgovorennya-proyektu-purb-richok-krimu.

The State Agency of Ukraine for Water Resources sent invitations to the Mission of the President of Ukraine in the AR of Crimea, the Mejlis of the Crimean Tatar People, the Prosecutor's Office of the AR of Crimea, the Crimean Platform and other stakeholders. The invitation to the event on public discussion of the draft Crimean RBMP was also published on the official website of Ukrinform Link to the announcement: https://www.ukrinform.ua/rubric-presshall/3840055-obgovorenna-proektu-planu-upravlinnabasejnom-ricok-krimu.html.

Link to Youtube: https://www.youtube.com/watch?v=N11AJYCM0fs.

19 On March 2024, an event was held in Kyiv to discuss the draft Crimean River Basin Management Plan. The event was attended by 11 participants - civil society organisations and stakeholders - and viewed online by 463 people. The event presented sections of the draft RBMP and discussed the necessary next steps in the current environment and after the de-occupation of the Ukrainian peninsula. Information about the event is available on the official website of the State Agency of Ukraine for Water Resources https://davr.gov.ua/news/v-ukrinformividbulosya-predstavlennya-proyektu-purb-richok-krimu and Ukrinform.

The report on the results of the public discussion will be posted on the official website of the State Agency of Ukraine for Water Resources and on the official website of the Ministry of Environment.

Strategic environmental assessment of the draft RBMP

The procedure for conducting a strategic environmental assessment (SEA) is defined by the Law of Ukraine 'On

Strategic Environmental Assessment' (hereinafter - the Law). According to Article 9(3)(1) of the Law, one of the stages of the SEA is public discussion and consultations in accordance with the procedure set out in Articles 12 and 13 of the Law, as well as transboundary consultations in accordance with the procedure set out in Article 14 of the Law. Pursuant to part nine of Article 12 of the Law, 'based on the results of the public discussion, the customer shall prepare a certificate on public discussion, which summarises the comments and proposals received and indicates how the state planning document and the strategic environmental assessment report take into account the comments and proposals submitted in accordance with this Article (or justifies their rejection), and also justifies the selection of this particular state planning document in the form in which it is proposed for approval, among other justified alternatives. The certificate shall be accompanied by the minutes of public hearings (if held) and written comments and suggestions received. The certificate of public discussion is public information and is entered by the customer into the Unified Register of Strategic Environmental Assessment.'

The SEA procedure for the RBMP of the Crimean rivers was completed (registration number of the case in the Unified Register of Strategic Environmental Assessment 26-12-4041-23).

The certificate of public discussion of the draft RBMP will be entered by the State Agency of Ukraine for Water Resources into the Unified Register of Strategic Environmental Assessment together with the approved RBMP of the Crimea

10 LIST OF COMPETENT STATE AUTHORITIES RESPONSIBLE FOR THE IMPLEMENTATION OF THE RIVER BASIN MANAGEMENT PLAN

Due to the inability to obtain up-to-date information (data is not available since 2014), the section will be updated after the de-occupation of the territory of the Autonomous Republic of Crimea temporarily occupied by the Russian Federation..

According to part two of Article 13 of the Water Code of Ukraine, the Cabinet of Ministers of Ukraine, the Council of Ministers of the Autonomous Republic of Crimea, village, town and city councils and their executive bodies, district and regional councils, executive authorities and other state bodies are responsible for public administration in the field of water use and protection and water resources restoration in accordance with the legislation of Ukraine.

The executive authorities in the field of water use and protection and water resources restoration are the Ministry of Ecology, the State Water Agency, the State Geological Survey, the State Ecological Inspectorate and other bodies in accordance with the law.

Table 14 Executive authorities in the field of water use and protection and water resources restoration

Title.	Address.	Address of the official website
Ministry of Environmental Protection and Natural Resources of Ukraine (MENR)	35, Metropolyt Vasyl Lypkivskyi St., Kyiv, 03035 tel.: (044) 206-31-00, (044) 206-31-15, fax: (044) 206-31-07, E-mail: info@mepr.gov.ua	www.mepr.gov.ua
State Agency of Water Resources of Ukraine (SAWR)	8 Velyka Vasylkivska St., Kyiv, 01024 tel./fax: (044) 235-31-92, tel. 235-61-46 E-mail: davr@davr.gov.ua	www.davr.gov.ua
State Service of Geology and Mineral Resources of Ukraine (Derzhgeonadra)	16 Anton Tsedik St., Kyiv, 03057 tel: (044) 536-13-18 E-mail: office@geo.gov.ua	www.geo.gov.ua
State Environmental Inspectorate of Ukraine (SEI)	3 Novopechersky lane, building 2, Kyiv, 01042 tel./fax +38 (044) 521-20-40 tel: (044) 521-20-38 E-mail: info@dei.gov.ua	www.dei.gov.ua

Table 15 Main regulatory acts that define the powers of executive authorities in the field of water use and protection and water resources restoration

Name of the body	Legal act	Link on the official website of the Parliament of Ukraine
Ministry of Environmental Protection and Natural Resources	The Water Code of Ukraine of 6 June 1995, No. 213/95-BP (Bulletin of the Verkhovna Rada of Ukraine (VVR), 1995, No. 24, p. 189) - Articles 15 and 15[1]	https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text
Ukraine (Ministry of Environment)	Regulation on the Ministry of Environmental Protection and Natural Resources of Ukraine, approved by the Cabinet of Ministers of Ukraine dated 25 June 2020, No. 614 (Official Gazette of Ukraine, 2020, no. 59, pp. 32, Article 1853)	https://zakon.rada.gov.ua/laws/show/614-2020-%D0%BF#Text
State Agency of Water Resources of Ukraine (SAWR)	The Water Code of Ukraine of 6 June 1995, No. 213/95-BP (Bulletin of the Verkhovna Rada of Ukraine (VVR), 1995, No. 24, p. 189) - Article 16	https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text
	Regulation on the State Agency of Water Resources of Ukraine, approved by the Cabinet of Ministers of Ukraine on 20 August 2014. No. 393 (Official Gazette of Ukraine, 2014, No. 71, pg. 34, article 1995)	https://zakon.rada.gov.ua/laws/show/393-2014-%D0%BF#Text

Name of the body	Legal act	Link on the official website of the Parliament of Ukraine
State Service of Geology and Mineral Resources of Ukraine (Derzhgeonadra)	The Water Code of Ukraine of 6 June 1995, No. 213/95-BP (Bulletin of the Verkhovna Rada of Ukraine (VVR), 1995, No. 24, p. 189) - Article 17	https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text
	Regulation on the State Service of Geology and Subsoil of Ukraine, approved by the Resolution of the Cabinet of Ministers of Ukraine of 30 December 2015 No. 1174 (Official Gazette of Ukraine, 2016, No. 3, pp. 284, Article 192)	https://zakon.rada.gov.ua/laws/show/1174-2015-%D0%BF#Text
State Environmental Inspectorate of Ukraine (SEI)	The Water Code of Ukraine of 6 June 1995, No. 213/95-BP (Bulletin of the Verkhovna Rada of Ukraine (VVR), 1995, No. 24, p. 189) - Article 15^2	https://zakon.rada.gov.ua/laws/show/213/95-%D0%B2%D1%80#Text
	Regulation on the State Ecological Inspection of Ukraine, approved by the Resolution of the Cabinet of Ministers of Ukraine of 19 April 2017, No. 275 (Official Gazette of Ukraine, 2017, No. 36, pp. 73, Article 1131)	https://zakon.rada.gov.ua/laws/show/275-2017-%D0%BF#Text
	Regulation on Territorial and Interregional Territorial Bodies of the State Environmental Inspectorate, approved by the Order of the Ministry of Energy and Environmental Protection of Ukraine dated 07 April 2020 No. 230, registered with the Ministry of Justice of Ukraine on 16 April 2020 under No. 350/34633 (Official Gazette of Ukraine, 2020, No. 33, pp. 25, Article 1116)	https://zakon.rada.gov.ua/laws/show/z0350-20#Text

11 THE PROCEDURE FOR OBTAINING INFORMATION, , INCLUDING PRIMARY INFORMATION, ON THE STATE OF SURFACE AND GROUNDWATER

In order to ensure proper organisation of access to public information, implementation of the Law of Ukraine "On Access to Public Information", Presidential Decree No. 547 of 05 May 2011 "Issues of Ensuring Access to Public Information by Executive Authorities", resolutions of the Cabinet of Ministers of Ukraine No. 583 of 25 May 2011 "Issues of Implementation of the Law of Ukraine "On Access to Public Information" in the Secretariat of the Cabinet of Ministers of Ukraine, Central and Local Executive Authorities", No. 835 of 21 October 2015 "On Approval of the Regulatio
No. 123/37459, approved the Procedure for Preparation, Submission and Processing of Requests for Information Managed by the Ministry of Environmental Protection and Natural Resources of Ukraine, a form for submitting a request for information in writing, a form for submitting a request for information by e-mail and a form for submitting a request for information by telephone. (https://zakon.rada.gov.ua/laws/show/z0123-22#Text).

To regulate the procedure for access to public information, the State Agency of Ukraine for Water Resources adopted Order No. 152 dated 08.12.2023 "On Certain Issues of Implementation of the Law of Ukraine "On Access to Public Information" in the State Agency of Ukraine for Water Resources".

In accordance with paragraphs 16-18 of the Procedure for State Water Monitoring, approved by Resolution of the Cabinet of Ministers of Ukraine No. 758 of 19 September 2018, the results of state water monitoring are:

- Primary information (observation data) provided by the subjects of state water monitoring;
- generalised data relating to a certain period of time or a certain territory;
- Assessment of the ecological and chemical state of surface water bodies, the ecological potential of artificial or significantly modified surface water bodies, the quantitative and chemical state of groundwater bodies, the ecological state of marine waters and identification of sources of negative impact on them;
- forecasts of water conditions and their changes;
- scientifically based recommendations necessary for making management decisions in the field of water use and protection and water resources reproduction.

Subjects of state water monitoring are obliged to store primary information (observation data) obtained as a result of state water monitoring for an indefinite period of time.

The information obtained and processed by the state water monitoring bodies is official.

Primary information (observation data), generalised data, assessment results, forecasts and recommendations resulting from the state water monitoring are provided free of charge:

- for MNR (including coastal waters) - to the State Water Agency and the Ministry of Environment;
- for the Mine Action Plan - to the State Service of Geology and Mineral Resources and the Ministry of Environment, as well as to the State Water Agency in terms of generalised data, assessment results and forecasts;
- for marine waters - the Ministry of Environment.

The subjects of state water monitoring shall exchange information with each other on the data and results of state water monitoring on a free-of-charge basis.

The State Agency of Ukraine for Water Resources collects and publishes information on the state of surface waters in the public domain by maintaining the following information resources:

- geoportal "State Water Cadastre: Accounting of Surface Water Bodies" (http://geoportal.davr.gov.ua:81/);
- web-based system "Monitoring and environmenta assessment of water resources in Ukraine of Ukraine" (http://monitoring.davr.gov.ua/EcoWaterMon/GDKMap/Index).

Automatic data exchange has been set up between these information resources and the Ministry of Ecology's EcoThreat resource.

ANNEXES
TO THE CRIMEAN RIVER BASIN
MANAGEMENT PLAN 2025-2030

Annex 1 List of identified SWBs

Risk of not achieving the environmental objectives of the SWB: 1 - no risk, 2 - possibly at risk; 3 - at risk

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Essential	Lake. Lake Aigulskoye	-	10	HMWB	UA_M5.7_0001	-	-	3	3	-
rivers of Crimea	Essential	Lake. Lake Aigulskoye	-	3,2	HMWB	UA_M5.7_0002	-	-	3	3	-
rivers of Crimea	б. Virgin	Sea of Azov	-	11,9	HMWB	UA_M5.7_0003	-	-	3	3	-
rivers of Crimea	б. Virgin	Sea of Azov	-	9,1	HMWB	UA_M5.7_0004	-	-	3	3	-
rivers of Crimea	б. Driving	Sea of Azov	-	14,7	HMWB	UA_M5.7_0005	-	-	3	3	-
rivers of Crimea	Untitled	Sea of Azov	-	13,9	HMWB	UA_M5.7_0006	-	-	3	3	-
rivers of Crimea	Victory	Sea of Azov	-	17,7	HMWB	UA_M5.7_0007	-	-	3	3	-
rivers of Crimea	Victory	Sea of Azov	-	19,1	HMWB	UA_M5.7_0008	-	-	3	3	-
rivers of Crimea	Myrnivka	Victory	-	8,6	HMWB	UA_M5.7_0009	-	-	3	3	-
rivers of Crimea	Myrnivka	Victory	-	19,3	HMWB	UA_M5.7_0010	-	-	3	3	-
rivers of Crimea	Stepna	Myrnivka	-	13,7	HMWB	UA_M5.7_0011	-	-	3	3	-
rivers of Crimea	Steel	Sea of Azov	-	13,6	HMWB	UA_M5.7_0012	-	-	3	3	-
rivers of Crimea	Steel	Sea of Azov	-	8,4	HMWB	UA_M5.7_0013	-	-	3	3	-
rivers of Crimea	Salgir	Sea of Azov	UA_R_12_M_2_Si	12,8	River	UA_M5.7_0014	-	-	-	-	-
rivers of Crimea	Salgir	Sea of Azov	UA_R_12_M_2_Si	12	River	UA_M5.7_0016	-	-	-	-	-
rivers of Crimea	Salgir	Sea of Azov	UA_R_12_M_1_Si	41,2	River	UA_M5.7_0017	-	-	-	-	-
rivers of Crimea	Salgir	Sea of Azov	-	118,8	HMWB	UA_M5.7_0018	-	-	3	3	-
rivers of Crimea	Hangar	Salgir	UA_R_12_S_3_Si	3,4	River	UA_M5.7_0019	-	-	-	-	-
rivers of Crimea	Hangar	Salgir	UA_R_12_S_3_Ca	4	River	UA_M5.7_0020	-	-	-	-	-
rivers of Crimea	Hangar	Salgir	UA_R_12_S_2_Si	5,3	River	UA_M5.7_0021	-	-	-	-	-
rivers of Crimea	Harab Tavel	Salgir	UA_R_12_S_3_Si	2,6	River	UA_M5.7_0022	-	-	-	-	-
rivers of Crimea	Harab Tavel	Salgir	UA_R_12_S_2_Ca	3,6	River	UA_M5.7_0023	-	-	-	-	-
rivers of Crimea	Harab Tavel	Salgir	UA_R_12_S_2_Si	5	River	UA_M5.7_0024	-	-	-	-	-
rivers of Crimea	Maly Salgir	Salgir	UA_R_12_S_3_Si	0,9	River	UA_M5.7_0025	-	-	-	-	-
rivers of Crimea	Small Salgir	Salgir	-	19,7	HMWB	UA_M5.7_0026	-	-	3	3	-
rivers of Crimea	Galtchik-Kaya	Salgir	-	15	HMWB	UA_M5.7_0027	-	-	3	3	-
rivers of Crimea	Galtchik-Kaya	Salgir	-	6,7	HMWB	UA_M5.7_0028	-	-	3	3	-
rivers of Crimea	Galtchik-Kaya	Salgir	-	5,6	HMWB	UA_M5.7_0029	-	-	3	3	-
rivers of Crimea	Galtchik-Kaya	Salgir	-	1,9	HMWB	UA_M5.7_0030	-	-	3	3	-
rivers of Crimea	Zuya	Salgir	UA_R_12_S_3_Ca	4	River	UA_M5.7_0031	-	-	-	-	-
rivers of Crimea	Zuya	Salgir	UA_R_12_S_2_Ca	4,2	River	UA_M5.7_0032	-	-	-	-	-
rivers of Crimea	Zuya	Salgir	UA_R_12_S_2_Ca	8,6	River	UA_M5.7_0034	-	-	-	-	-
rivers of Crimea	Zuya	Salgir	UA_R_12_S_2_Si	2,1	River	UA_M5.7_0035	-	-	-	-	-
rivers of Crimea	Zuya	Salgir	UA_R_12_M_2_Si	3,5	River	UA_M5.7_0036	-	-	-	-	-
rivers of Crimea	Zuya	Salgir	UA_R_12_M_1_Ca	25,6	River	UA_M5.7_0037	-	-	-	-	-
rivers of Crimea	Zuya	Salgir	-	1	HMWB	UA_M5.7_0038	-	-	3	3	-
rivers of Crimea	Hazelnuts	Zuya	UA_R_12_S_2_Ca	11,9	River	UA_M5.7_0039	-	-	-	-	-
rivers of Crimea	Hazelnuts	Zuya	-	2,6	HMWB	UA_M5.7_0040	-	-	3	3	-
rivers of Crimea	Untitled	Zuya	-	8,8	HMWB	UA_M5.7_0041	-	-	3	3	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Untitled	Zuya	-	5,6	HMWB	UA_M5.7_0042	-	-	3	3	-
rivers of Crimea	Beshterek	Zuya	UA_R_12_S_3_Si	4,9	River	UA_M5.7_0043	-	-	-	-	-
rivers of Crimea	Beshterek	Zuya	UA_R_12_S_2_Si	3,3	River	UA_M5.7_0044	-	-	-	-	-
rivers of Crimea	Beshterek	Zuya	-	18,3	HMWB	UA_M5.7_0045	-	-	3	3	-
rivers of Crimea	Beshterek	Zuya	-	11,1	HMWB	UA_M5.7_0046	-	-	3	3	-
rivers of Crimea	б. Berguba	Salgir	UA_R_12_S_1_Ca	14,5	River	UA_M5.7_0047	-	-	-	-	-
rivers of Crimea	Burulcha	Salgir	UA_R_12_S_4_Ca	5,1	River	UA_M5.7_0048	-	-	-	-	-
rivers of Crimea	Burulcha	Salgir	UA_R_12_S_3_Ca	7,6	River	UA_M5.7_0049	-	-	-	-	-
rivers of Crimea	Burulcha	Salgir	UA_R_12_S_2_Ca	5,6	River	UA_M5.7_0050	-	-	-	-	-
rivers of Crimea	Burulcha	Salgir	UA_R_12_M_2_Ca	16,2	River	UA_M5.7_0051	-	-	-	-	-
rivers of Crimea	Burulcha	Salgir	UA_R_12_M_2_Si	7,5	River	UA_M5.7_0052	-	-	-	-	-
rivers of Crimea	Burulcha	Salgir	-	33,8	HMWB	UA_M5.7_0053	-	-	3	3	-
rivers of Crimea	pg. Su-At	Burulcha	UA_R_12_S_4_Ca	3,8	River	UA_M5.7_0054	-	-	-	-	-
rivers of Crimea	pg. Su-At	Burulcha	UA_R_12_S_3_Ca	8,1	River	UA_M5.7_0055	-	-	-	-	-
rivers of Crimea	pg. Su-At	Burulcha	UA_R_12_S_2_Ca	2,4	River	UA_M5.7_0056	-	-	-	-	-
rivers of Crimea	Karasivka	Salgir	-	2,3	HMWB	UA_M5.7_0057	-	-	3	3	-
rivers of Crimea	Karasivka	Salgir	-	0,5	HMWB	UA_M5.7_0059	-	-	3	3	-
rivers of Crimea	Karasivka	Salgir	-	2,2	HMWB	UA_M5.7_0060	-	-	3	3	-
rivers of Crimea	Karasivka	Salgir	UA_R_12_M_1_Si	14,8	River	UA_M5.7_0061	-	-	-	-	-
rivers of Crimea	Karasivka	Salgir	-	16,1	HMWB	UA_M5.7_0062	-	-	3	3	-
rivers of Crimea	Karasivka	Salgir	UA_R_12_M_1_Si	17,6	River	UA_M5.7_0063	-	-	-	-	-
rivers of Crimea	Karasivka	Salgir	UA_R_12_L_1_Si	28,1	River	UA_M5.7_0064	-	-	-	-	-
rivers of Crimea	Lianchin ravine	Karasivka	UA_R_12_S_4_Ca	1,1	River	UA_M5.7_0065	-	-	-	-	-
rivers of Crimea	Lianchin ravine	Karasivka	UA_R_12_S_3_Ca	6,3	River	UA_M5.7_0066	-	-	-	-	-
rivers of Crimea	Lianchin ravine	Karasivka	UA_R_12_S_2_Si	11,5	River	UA_M5.7_0067	-	-	-	-	-
rivers of Crimea	Lianchin ravine	Karasivka	-	0,5	HMWB	UA_M5.7_0069	-	-	3	3	-
rivers of Crimea	Tonas	Karasivka	UA_R_12_S_4_Si	1,1	River	UA_M5.7_0070	-	-	-	-	-
rivers of Crimea	Tonas	Karasivka	UA_R_12_S_3_Si	4,7	River	UA_M5.7_0071	-	-	-	-	-
rivers of Crimea	Tonas	Karasivka	UA_R_12_S_2_Si	9,2	River	UA_M5.7_0072	-	-	-	-	-
rivers of Crimea	Tonas	Karasivka	-	9,6	HMWB	UA_M5.7_0073	-	-	3	3	-
rivers of Crimea	Tonas	Karasivka	-	2,2	HMWB	UA_M5.7_0074	-	-	3	3	-
rivers of Crimea	Malbay-Uzen	Tonas	UA_R_12_S_3_Ca	01,01,3752	River	UA_M5.7_0075	-	-	-	-	-
rivers of Crimea	Malbay-Uzen	Tonas	UA_R_12_S_2_Ca	3,3	River	UA_M5.7_0076	-	-	-	-	-
rivers of Crimea	Malbay-Uzen	Tonas	UA_R_12_S_2_Si	5,4	River	UA_M5.7_0077	-	-	-	-	-
rivers of Crimea	Sarisu	Karasivka	-	7,5	HMWB	UA_M5.7_0078	-	-	3	3	-
rivers of Crimea	Sarisu	Karasivka	-	7	HMWB	UA_M5.7_0079	-	-	3	3	-
rivers of Crimea	Sarisu	Karasivka	-	2	HMWB	UA_M5.7_0080	-	-	3	3	-
rivers of Crimea	Sarisu	Karasivka	UA_R_12_M_1_Si	4,2	River	UA_M5.7_0081	-	-	-	-	-
rivers of Crimea	Tashkent	Sarisu	UA_R_12_S_3_Ca	2,5	River	UA_M5.7_0082	-	-	-	-	-
rivers of Crimea	Tashkent	Sarisu	UA_R_12_S_2_Ca	8,6	River	UA_M5.7_0083	-	-	-	-	-
rivers of Crimea	Tashkent	Sarisu	UA_R_12_S_2_Si	1,5	River	UA_M5.7_0084	-	-	-	-	-
rivers of Crimea	Deren-Dilga	Sarisu	-	1,8	HMWB	UA_M5.7_0085	-	-	3	3	-
rivers of Crimea	Deren-Dilga	Sarisu	-	6,3	HMWB	UA_M5.7_0086	-	-	3	3	-
rivers of Crimea	Deren-Dilga	Sarisu	-	2,7	HMWB	UA_M5.7_0087	-	-	3	3	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Kuchuk-Karasu	Karasivka	UA_R_12_S_3_Si	5,7	River	UA_M5.7_0088	-	-	-	-	-
rivers of Crimea	Kuchuk-Karasu	Karasivka	UA_R_12_S_2_Si	15,3	River	UA_M5.7_0089	-	-	-	-	-
rivers of Crimea	Kuchuk-Karasu	Karasivka	UA_R_12_M_2_Si	8,2	River	UA_M5.7_0090	-	-	-	-	-
rivers of Crimea	Kuchuk-Karasu	Karasivka	-	9,7	HMWB	UA_M5.7_0091	-	-	3	3	-
rivers of Crimea	Kuchuk-Karasu	Karasivka	-	10,9	HMWB	UA_M5.7_0092	-	-	3	3	-
rivers of Crimea	Kuchuk-Karasu	Karasivka	UA_R_12_M_1_Si	14,8	River	UA_M5.7_0093	-	-	-	-	-
rivers of Crimea	Sujilka, dry channel	Sea of Azov	-	20,4	HMWB	UA_M5.7_0094	-	-	3	3	-
rivers of Crimea	Untitled	Sea of Azov	-	4,8	HMWB	UA_M5.7_0095	-	-	3	3	-
rivers of Crimea	Untitled	Sea of Azov	-	9,8	HMWB	UA_M5.7_0096	-	-	3	3	-
rivers of Crimea	Eastern Bulganak (Bulganak)	Sea of Azov	-	11,7	HMWB	UA_M5.7_0097	-	-	3	3	-
rivers of Crimea	Eastern Bulganak (Bulganak)	Sea of Azov	-	33,3	HMWB	UA_M5.7_0098	-	-	3	3	-
rivers of Crimea	Untitled	Eastern Bulganak (Bulganak)	UA_R_12_S_1_Si	12,7	River	UA_M5.7_0099	-	-	-	-	-
rivers of Crimea	Wet Indole	Eastern Bulganak (Bulganak)	-	45,9	HMWB	UA_M5.7_0100	-	-	3	3	-
rivers of Crimea	Sala	Wet Indole	UA_R_12_S_1_Ca	2,6	River	UA_M5.7_0101	-	-	-	-	-
rivers of Crimea	Sala	Wet Indole	-	12,4	HMWB	UA_M5.7_0102	-	-	3	3	-
rivers of Crimea	Indole	Wet Indole	UA_R_12_S_1_Ca	7,1	River	UA_M5.7_0103	-	-	-	-	-
rivers of Crimea	Indole	Wet Indole	UA_R_12_S_1_Si	15	River	UA_M5.7_0104	-	-	-	-	-
rivers of Crimea	Indole	Wet Indole	-	0,8	HMWB	UA_M5.7_0105	-	-	3	3	-
rivers of Crimea	б. Kurtynska	Indole	UA_R_12_S_1_Ca	5,1	River	UA_M5.7_0106	-	-	-	-	-
rivers of Crimea	б. Kurtynska	Indole	UA_R_12_S_1_Si	7,1	River	UA_M5.7_0107	-	-	-	-	-
rivers of Crimea	Dry Indole	Wet Indole	UA_R_12_S_1_Ca	6	River	UA_M5.7_0108	-	-	-	-	-
rivers of Crimea	Dry Indole	Wet Indole	-	29	HMWB	UA_M5.7_0109	-	-	3	3	-
rivers of Crimea	Subash, Subba	Sea of Azov	-	24,5	HMWB	UA_M5.7_0110	-	-	3	3	-
rivers of Crimea	Subash, Subba	Sea of Azov	-	10,9	HMWB	UA_M5.7_0111	-	-	3	3	-
rivers of Crimea	Khour Gila	Subash, Subba	-	21,1	HMWB	UA_M5.7_0112	-	-	3	3	-
rivers of Crimea	Khour Gila	Subash, Subba	-	5,3	HMWB	UA_M5.7_0113	-	-	3	3	-
rivers of Crimea	Chorokh-Su	Sea of Azov	UA_R_12_S_2_Si	4,1	River	UA_M5.7_0114	-	-	-	-	-
rivers of Crimea	Chorokh-Su	Sea of Azov	-	20,7	HMWB	UA_M5.7_0115	-	-	3	3	-
rivers of Crimea	Chorokh-Su	Sea of Azov	-	11,5	HMWB	UA_M5.7_0116	-	-	3	3	-
rivers of Crimea	Untitled	Chorokh-Su	UA_R_12_S_1_Si	11,2	River	UA_M5.7_0117	-	-	-	-	-
rivers of Crimea	Untitled	marsh to the east of Feodos	-	11,7	HMWB	UA_M5.7_0118	-	-	3	3	-
rivers of Crimea	б. Koy-Asan	Sea of Azov	UA_R_12_S_1_Si	1,7	River	UA_M5.7_0120	-	-	-	-	-
rivers of Crimea	б. Koy-Asan	Sea of Azov	UA_R_12_S_1_Si	9,8	River	UA_M5.7_0122	-	-	-	-	-
rivers of Crimea	Untitled	Black Sea	-	11,4	HMWB	UA_M5.7_0123	-	-	3	3	-
rivers of Crimea	б. Ali Bai	Black Sea	UA_R_12_S_1_Si	24,7	River	UA_M5.7_0124	-	-	-	-	-
rivers of Crimea	б. Ali Bai	Black Sea	UA_R_12_M_1_Si	1,6	River	UA_M5.7_0125	-	-	-	-	-
rivers of Crimea	б. Ali Bai	Black Sea	-	3,3	HMWB	UA_M5.7_0126	-	-	3	3	-
rivers of Crimea	б. Ali Bai	Black Sea	UA_R_12_M_1_Si	7,9	River	UA_M5.7_0127	-	-	-	-	-
rivers of Crimea	Untitled	б. Ali Bai	UA_R_12_S_1_Si	8,1	River	UA_M5.7_0128	-	-	-	-	-
rivers of Crimea	Untitled	б. Ali Bai	-	1,4	HMWB	UA_M5.7_0129	-	-	3	3	-
rivers of Crimea	Untitled	б. Ali Bai	UA_R_12_S_1_Si	5,8	River	UA_M5.7_0130	-	-	-	-	-
rivers of Crimea	Seven Wells	Lake. Aktaskoye Lake	UA_R_12_S_1_Si	20,7	River	UA_M5.7_0131	-	-	-	-	-
rivers of Crimea	Seven Wells	Lake. Aktaskoye Lake	-	6,5	HMWB	UA_M5.7_0132	-	-	3	3	-
rivers of Crimea	Samarli	Astana marsh	UA_R_12_S_1_Si	27,4	River	UA_M5.7_0134	-	-	-	-	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Samarli	Astana marsh	UA_R_12_M_1_Si	23,6	River	UA_M5.7_0135	-	-	-	-	-
rivers of Crimea	б. Chaltyrska	Samarli	UA_R_12_S_1_Si	9,2	River	UA_M5.7_0137	-	-	-	-	-
rivers of Crimea	б. Chaltiirskaya	Samarli	UA_R_12_S_1_Si	1,8	River	UA_M5.7_0139	-	-	-	-	-
rivers of Crimea	Untitled	Samarli	UA_R_12_S_1_Si	17,4	River	UA_M5.7_0140	-	-	-	-	-
rivers of Crimea	Zelenyi Yar	Black Sea	-	10	HMWB	UA_M5.7_0141	-	-	3	3	-
rivers of Crimea	Zelenyi Yar	Black Sea	-	4,1	HMWB	UA_M5.7_0143	-	-	3	3	-
rivers of Crimea	Untitled	Black Sea	UA_R_12_S_1_Si	21,1	River	UA_M5.7_0144	-	-	-	-	-
rivers of Crimea	Untitled	Black Sea	UA_R_12_M_1_Si	1,3	River	UA_M5.7_0145	-	-	-	-	-
rivers of Crimea	б. Karalar	Black Sea	UA_R_12_S_1_Si	10,2	River	UA_M5.7_0146	-	-	-	-	-
rivers of Crimea	Melek-Cesme	Black Sea	-	14,8	HMWB	UA_M5.7_0147	-	-	3	3	-
rivers of Crimea	Melek-Cesme	Black Sea	-	0,9	HMWB	UA_M5.7_0148	-	-	3	3	-
rivers of Crimea	Katarzyz	Melek-Cesme	UA_R_12_S_1_Si	15,7	River	UA_M5.7_0149	-	-	-	-	-
rivers of Crimea	б. Churbashskaya	Black Sea	UA_R_12_S_1_Si	7	River	UA_M5.7_0150	-	-	-	-	-
rivers of Crimea	б. Churbashskaya	Black Sea	-	1,1	HMWB	UA_M5.7_0151	-	-	3	3	-
rivers of Crimea	б. Churbashskaya	Black Sea	UA_R_12_S_1_Si	12,3	River	UA_M5.7_0152	-	-	-	-	-
rivers of Crimea	б. Churbashskaya	Black Sea	-	10,6	HMWB	UA_M5.7_0153	-	-	3	3	-
rivers of Crimea	Ichkin-Dzhilga	Lake. Lake Tobechytske	-	18,1	HMWB	UA_M5.7_0154	-	-	3	3	-
rivers of Crimea	Chit-Oba	Black Sea	UA_R_12_S_1_Si	12,5	River	UA_M5.7_0155	-	-	-	-	-
rivers of Crimea	б. Uzunlar	Lake. Uzunlarskoye Lake	UA_R_12_S_1_Si	11,6	River	UA_M5.7_0156	-	-	-	-	-
rivers of Crimea	б. Shaklar	Lake. Uzunlarskoye Lake	UA_R_12_S_1_Si	12	River	UA_M5.7_0157	-	-	-	-	-
rivers of Crimea	б. Tash Alchin	Lake. Uzunlarskoye Lake	UA_R_12_S_1_Si	11,8	River	UA_M5.7_0158	-	-	-	-	-
rivers of Crimea	б. Bash-Kyrgyzstan	Lake. Kachik	UA_R_12_S_1_Si	11	River	UA_M5.7_0159	-	-	-	-	-
rivers of Crimea	б. Jaw Tobe	Lake. Kachik	UA_R_12_S_1_Si	5,4	River	UA_M5.7_0160	-	-	-	-	-
rivers of Crimea	б. Jaw Tobe	Lake. Kachik	-	1,3	HMWB	UA_M5.7_0161	-	-	3	3	-
rivers of Crimea	б. Jaw Tobe	Lake. Kachik	UA_R_12_S_1_Si	7,9	River	UA_M5.7_0162	-	-	-	-	-
rivers of Crimea	б. Mercenary	Black Sea	UA_R_12_S_1_Si	11,4	River	UA_M5.7_0163	-	-	-	-	-
rivers of Crimea	Untitled	Black Sea	UA_R_12_S_1_Si	15,5	River	UA_M5.7_0164	-	-	-	-	-
rivers of Crimea	б. Sandy	Black Sea	-	14,2	HMWB	UA_M5.7_0165	-	-	3	3	-
rivers of Crimea	Baibuga	Black Sea	-	16,7	HMWB	UA_M5.7_0166	-	-	3	3	-
rivers of Crimea	Baibuga	Black Sea	-	3,3	HMWB	UA_M5.7_0167	-	-	3	3	-
rivers of Crimea	pg. Kiziltasky	Otuz	UA_R_12_S_2_Ca	3,4	River	UA_M5.7_0168	-	-	-	-	-
rivers of Crimea	pg. Kiziltasky	Otuz	UA_R_12_S_1_Ca	3,2	River	UA_M5.7_0169	-	-	-	-	-
rivers of Crimea	pg. Kiziltasky	Otuz	-	3,9	HMWB	UA_M5.7_0170	-	-	3	3	-
rivers of Crimea	Otuz	Black Sea	-	3,4	HMWB	UA_M5.7_0171	-	-	3	3	-
rivers of Crimea	б. Bugaska	Black Sea	UA_R_12_S_2_Ca	1,8	River	UA_M5.7_0172	-	-	-	-	-
rivers of Crimea	б. Bugaska	Black Sea	-	7,6	HMWB	UA_M5.7_0173	-	-	3	3	-
rivers of Crimea	б. Bugaska	Black Sea	-	2,1	HMWB	UA_M5.7_0174	-	-	3	3	-
rivers of Crimea	Taraktash	Black Sea	UA_R_12_S_3_Si	1,1	River	UA_M5.7_0175	-	-	-	-	-
rivers of Crimea	Taraktash	Black Sea	UA_R_12_S_2_Si	7,3	River	UA_M5.7_0176	-	-	-	-	-
rivers of Crimea	Taraktash	Black Sea	UA_R_12_S_1_Si	1	River	UA_M5.7_0177	-	-	-	-	-
rivers of Crimea	Taraktash	Black Sea	UA_R_12_S_1_Ca	3,2	River	UA_M5.7_0178	-	-	-	-	-
rivers of Crimea	Taraktash	Black Sea	-	4,8	HMWB	UA_M5.7_0179	-	-	3	3	-
rivers of Crimea	Taraktash	Black Sea	-	1,4	HMWB	UA_M5.7_0180	-	-	3	3	-
rivers of Crimea	Taraktash	Black Sea	-	2,4	HMWB	UA_M5.7_0181	-	-	3	3	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Taraktash	Black Sea	-	1,6	HMWB	UA_M5.7_0182	-	-	3	3	-
rivers of Crimea	Karagach	Taraktash	UA_R_12_S_3_Si	0,2	River	UA_M5.7_0183	-	-	-	-	-
rivers of Crimea	Karagach	Taraktash	UA_R_12_S_2_Si	5,2	River	UA_M5.7_0184	-	-	-	-	-
rivers of Crimea	Karagach	Taraktash	UA_R_12_S_1_Si	5	River	UA_M5.7_0185	-	-	-	-	-
rivers of Crimea	Karagach	Taraktash	-	3,8	HMWB	UA_M5.7_0186	-	-	3	3	-
rivers of Crimea	Raven	Black Sea	UA_R_12_S_3_Si	0,2	River	UA_M5.7_0187	-	-	-	-	-
rivers of Crimea	Raven	Black Sea	UA_R_12_S_2_Si	4,8	River	UA_M5.7_0188	-	-	-	-	-
rivers of Crimea	Raven	Black Sea	-	8,4	HMWB	UA_M5.7_0189	-	-	3	3	-
rivers of Crimea	Ai-Serez	Raven	UA_R_12_S_4_Si	0,2	River	UA_M5.7_0190	-	-	-	-	-
rivers of Crimea	Ai-Serez	Raven	UA_R_12_S_3_Si	2,2	River	UA_M5.7_0191	-	-	-	-	-
rivers of Crimea	Ai-Serez	Raven	UA_R_12_S_2_Si	5	River	UA_M5.7_0192	-	-	-	-	-
rivers of Crimea	Ai-Serez	Raven	UA_R_12_S_1_Si	3,1	River	UA_M5.7_0193	-	-	-	-	-
rivers of Crimea	Shelen	Black Sea	UA_R_12_S_2_Si	3,5	River	UA_M5.7_0194	-	-	-	-	-
rivers of Crimea	Shelen	Black Sea	-	8	HMWB	UA_M5.7_0195	-	-	3	3	-
rivers of Crimea	Uskut	Black Sea	UA_R_12_S_3_Si	0,7	River	UA_M5.7_0196	-	-	-	-	-
rivers of Crimea	Uskut	Black Sea	UA_R_12_S_2_Si	3,3	River	UA_M5.7_0197	-	-	-	-	-
rivers of Crimea	Uskut	Black Sea	-	8,4	HMWB	UA_M5.7_0198	-	-	3	3	-
rivers of Crimea	Arpat	Uskut	UA_R_12_S_2_Si	4,1	River	UA_M5.7_0199	-	-	-	-	-
rivers of Crimea	Arpat	Uskut	-	7	HMWB	UA_M5.7_0200	-	-	3	3	-
rivers of Crimea	Andus	Black Sea	UA_R_12_S_2_Si	1,9	River	UA_M5.7_0201	-	-	-	-	-
rivers of Crimea	Andus	Black Sea	-	4,9	HMWB	UA_M5.7_0202	-	-	3	3	-
rivers of Crimea	Alachuk	Andus	UA_R_12_S_4_Ca	2,1	River	UA_M5.7_0203	-	-	-	-	-
rivers of Crimea	Alachuk	Andus	UA_R_12_S_3_Ca	1,5	River	UA_M5.7_0204	-	-	-	-	-
rivers of Crimea	Alachuk	Andus	UA_R_12_S_2_Ca	1,1	River	UA_M5.7_0205	-	-	-	-	-
rivers of Crimea	Alachuk	Andus	UA_R_12_S_2_Si	1,9	River	UA_M5.7_0206	-	-	-	-	-
rivers of Crimea	Alachuk	Andus	UA_R_12_S_1_Si	6	River	UA_M5.7_0207	-	-	-	-	-
rivers of Crimea	p. Orta-Uzen	Black Sea	UA_R_12_S_4_Ca	0,2	River	UA_M5.7_0208	-	-	-	-	-
rivers of Crimea	p. Orta-Uzen	Black Sea	UA_R_12_S_3_Ca	1,8	River	UA_M5.7_0209	-	-	-	-	-
rivers of Crimea	p. Orta-Uzen	Black Sea	UA_R_12_S_2_Ca	1,4	River	UA_M5.7_0210	-	-	-	-	-
rivers of Crimea	p. Orta-Uzen	Black Sea	UA_R_12_S_2_Si	1,5	River	UA_M5.7_0211	-	-	-	-	-
rivers of Crimea	p. Orta-Uzen	Black Sea	-	7	HMWB	UA_M5.7_0212	-	-	3	3	-
rivers of Crimea	Ulu-Uzen	Black Sea	UA_R_12_S_4_Ca	0,3	River	UA_M5.7_0213	-	-	-	-	-
rivers of Crimea	Ulu-Uzen	Black Sea	UA_R_12_S_3_Ca	1,5	River	UA_M5.7_0214	-	-	-	-	-
rivers of Crimea	Ulu-Uzen	Black Sea	UA_R_12_S_2_Ca	0,6	River	UA_M5.7_0215	-	-	-	-	-
rivers of Crimea	Ulu-Uzen	Black Sea	UA_R_12_S_2_Si	3,1	River	UA_M5.7_0216	-	-	-	-	-
rivers of Crimea	Ulu-Uzen	Black Sea	UA_R_12_S_1_Si	7	River	UA_M5.7_0217	-	-	-	-	-
rivers of Crimea	Demerji	Black Sea	UA_R_12_S_4_Si	0,8	River	UA_M5.7_0218	-	-	-	-	-
rivers of Crimea	Demerji	Black Sea	UA_R_12_S_3_Si	2,3	River	UA_M5.7_0219	-	-	-	-	-
rivers of Crimea	Demerji	Black Sea	UA_R_12_S_2_Si	3	River	UA_M5.7_0220	-	-	-	-	-
rivers of Crimea	Demerji	Black Sea	-	7,1	HMWB	UA_M5.7_0221	-	-	3	3	-
rivers of Crimea	Safun-Uzen	Black Sea	UA_R_12_S_4_Si	0,4	River	UA_M5.7_0222	-	-	-	-	-
rivers of Crimea	Safun-Uzen	Black Sea	UA_R_12_S_3_Si	1,7	River	UA_M5.7_0223	-	-	-	-	-
rivers of Crimea	Safun-Uzen	Black Sea	UA_R_12_S_2_Si	3,6	River	UA_M5.7_0224	-	-	-	-	-
rivers of Crimea	Safun-Uzen	Black Sea	UA_R_12_S_1_Si	7,8	River	UA_M5.7_0225	-	-	-	-	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Derekoyka (Badka, Bala, Bist	Black Sea	UA_R_12_S_4_Si	2,5	River	UA_M5.7_0226	-	-	-	-	-
rivers of Crimea	Derekoyka (Badka, Bala, Bist	Black Sea	UA_R_12_S_3_Si	1,9	River	UA_M5.7_0227	-	-	-	-	-
rivers of Crimea	Derekoyka (Badka, Bala, Bist	Black Sea	UA_R_12_S_2_Si	2	River	UA_M5.7_0228	-	-	-	-	-
rivers of Crimea	Derekoyka (Badka, Bala, Bist	Black Sea	-	3,9	HMWB	UA_M5.7_0229	-	-	3	3	-
rivers of Crimea	Black	Black Sea	UA_R_12_S_3_Ca	1	River	UA_M5.7_0230	-	-	-	-	-
rivers of Crimea	Black	Black Sea	UA_R_12_S_2_Ca	6,3	River	UA_M5.7_0231	-	-	-	-	-
rivers of Crimea	Black	Black Sea	UA_R_12_S_2_Si	0,4	River	UA_M5.7_0232	-	-	-	-	-
rivers of Crimea	Black	Black Sea	-	3,4	HMWB	UA_M5.7_0234	-	-	3	3	-
rivers of Crimea	Black	Black Sea	UA_R_12_M_1_Si	21,3	River	UA_M5.7_0235	-	-	-	-	-
rivers of Crimea	Black	Black Sea	-	4,9	HMWB	UA_M5.7_0236	-	-	3	3	-
rivers of Crimea	Kayak	Black	UA_R_12_S_2_Si	3,1	River	UA_M5.7_0237	-	-	-	-	-
rivers of Crimea	Kayak	Black	UA_R_12_S_2_Ca	4,1	River	UA_M5.7_0238	-	-	-	-	-
rivers of Crimea	Kayak	Black	UA_R_12_S_2_Si	4	River	UA_M5.7_0239	-	-	-	-	-
rivers of Crimea	Aitodorka	Black	UA_R_12_S_3_Si	0,5	River	UA_M5.7_0240	-	-	-	-	-
rivers of Crimea	Aitodorka	Black	UA_R_12_S_2_Si	7	River	UA_M5.7_0241	-	-	-	-	-
rivers of Crimea	Aitodorka	Black	-	9,1	HMWB	UA_M5.7_0242	-	-	3	3	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_S_4_Ca	1	River	UA_M5.7_0243	-	-	-	-	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_S_3_Ca	2,4	River	UA_M5.7_0244	-	-	-	-	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_S_2_Ca	2,5	River	UA_M5.7_0245	-	-	-	-	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_S_2_Si	13,8	River	UA_M5.7_0246	-	-	-	-	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_M_2_Si	1,1	River	UA_M5.7_0247	-	-	-	-	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_M_1_Si	15	River	UA_M5.7_0248	-	-	-	-	-
rivers of Crimea	Belbek	Black Sea	-	15	HMWB	UA_M5.7_0249	-	-	3	3	-
rivers of Crimea	Belbek	Black Sea	UA_R_12_M_1_Si	10,1	River	UA_M5.7_0250	-	-	-	-	-
rivers of Crimea	Coccozka	Belbek	UA_R_12_S_4_Ca	0,5	River	UA_M5.7_0251	-	-	-	-	-
rivers of Crimea	Coccozka	Belbek	UA_R_12_S_3_Ca	5,4	River	UA_M5.7_0252	-	-	-	-	-
rivers of Crimea	Coccozka	Belbek	UA_R_12_S_2_Ca	3,2	River	UA_M5.7_0253	-	-	-	-	-
rivers of Crimea	Coccozka	Belbek	UA_R_12_S_2_Si	7,4	River	UA_M5.7_0254	-	-	-	-	-
rivers of Crimea	Uraus-Deresi	Belbek	UA_R_12_S_2_Si	5,4	River	UA_M5.7_0255	-	-	-	-	-
rivers of Crimea	Uraus-Deresi	Belbek	-	4,6	HMWB	UA_M5.7_0256	-	-	3	3	-
rivers of Crimea	Uraus-Deresi	Belbek	-	2,3	HMWB	UA_M5.7_0257	-	-	3	3	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_S_4_Ca	2,6	River	UA_M5.7_0258	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_S_3_Ca	1,5	River	UA_M5.7_0259	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_S_3_Si	4,4	River	UA_M5.7_0260	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_S_2_Si	5,6	River	UA_M5.7_0261	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_M_2_Si	3,4	River	UA_M5.7_0262	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_M_2_Si	9,7	River	UA_M5.7_0264	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	-	5,8	HMWB	UA_M5.7_0265	-	-	3	3	-
rivers of Crimea	Kacha	Black Sea	UA_R_12_M_1_Ca	15,2	River	UA_M5.7_0266	-	-	-	-	-
rivers of Crimea	Kacha	Black Sea	-	19,6	HMWB	UA_M5.7_0267	-	-	3	3	-
rivers of Crimea	Kospana	Kacha	UA_R_12_S_4_Ca	2,5	River	UA_M5.7_0268	-	-	-	-	-
rivers of Crimea	Kospana	Kacha	UA_R_12_S_3_Ca	2,8	River	UA_M5.7_0269	-	-	-	-	-
rivers of Crimea	Kospana	Kacha	UA_R_12_S_3_Si	0,5	River	UA_M5.7_0270	-	-	-	-	-
rivers of Crimea	Kospana	Kacha	UA_R_12_S_2_Si	4,8	River	UA_M5.7_0271	-	-	-	-	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	Style.	Kacha	UA_R_12_S_4_Ca	2,2	River	UA_M5.7_0272	-	-	-	-	-
rivers of Crimea	Style.	Kacha	UA_R_12_S_3_Ca	2	River	UA_M5.7_0273	-	-	-	-	-
rivers of Crimea	Style.	Kacha	UA_R_12_S_3_Si	2,3	River	UA_M5.7_0274	-	-	-	-	-
rivers of Crimea	Style.	Kacha	UA_R_12_S_2_Si	6,7	River	UA_M5.7_0275	-	-	-	-	-
rivers of Crimea	Martha	Kacha	UA_R_12_S_3_Si	1,1	River	UA_M5.7_0276	-	-	-	-	-
rivers of Crimea	Martha	Kacha	UA_R_12_S_2_Si	18	River	UA_M5.7_0277	-	-	-	-	-
rivers of Crimea	Churuk-Su	Kacha	UA_R_12_S_2_Si	1,4	River	UA_M5.7_0278	-	-	-	-	-
rivers of Crimea	Churuk-Su	Kacha	UA_R_12_S_2_Ca	2,1	River	UA_M5.7_0279	-	-	-	-	-
rivers of Crimea	Churuk-Su	Kacha	-	8,1	HMWB	UA_M5.7_0280	-	-	3	3	-
rivers of Crimea	Alma	Alma	UA_R_12_S_4_Si	0,8	River	UA_M5.7_0281	-	-	-	-	-
rivers of Crimea	Alma	Alma	UA_R_12_S_3_Si	8,3	River	UA_M5.7_0282	-	-	-	-	-
rivers of Crimea	Alma	Alma	UA_R_12_S_2_Si	11,6	River	UA_M5.7_0283	-	-	-	-	-
rivers of Crimea	Alma	Black Sea	UA_R_12_M_2_Si	10,8	River	UA_M5.7_0284	-	-	-	-	-
rivers of Crimea	Alma	Black Sea	UA_R_12_M_2_Si	3,8	River	UA_M5.7_0286	-	-	-	-	-
rivers of Crimea	Alma	Black Sea	UA_R_12_M_1_Si	41,1	River	UA_M5.7_0287	-	-	-	-	-
rivers of Crimea	Dry Alma	Alma	UA_R_12_S_3_Si	3,5	River	UA_M5.7_0288	-	-	-	-	-
rivers of Crimea	Dry Alma	Alma	UA_R_12_S_2_Si	8	River	UA_M5.7_0289	-	-	-	-	-
rivers of Crimea	Spit	Alma	UA_R_12_S_4_Si	0,5	River	UA_M5.7_0290	-	-	-	-	-
rivers of Crimea	Spit	Alma	UA_R_12_S_3_Si	3,3	River	UA_M5.7_0291	-	-	-	-	-
rivers of Crimea	Spit	Alma	UA_R_12_S_2_Si	9,7	River	UA_M5.7_0292	-	-	-	-	-
rivers of Crimea	Bodrak	Alma	UA_R_12_S_2_Si	12,7	River	UA_M5.7_0293	-	-	-	-	-
rivers of Crimea	Bodrak	Alma	UA_R_12_S_1_Si	4,1	River	UA_M5.7_0294	-	-	-	-	-
rivers of Crimea	Eski-Kishav	Alma	UA_R_12_S_2_Ca	2,7	River	UA_M5.7_0295	-	-	-	-	-
rivers of Crimea	Eski-Kishav	Alma	-	5,1	HMWB	UA_M5.7_0296	-	-	3	3	-
rivers of Crimea	Eski-Kishav	Alma	-	6,1	HMWB	UA_M5.7_0297	-	-	3	3	-
rivers of Crimea	Buranchi Ichi	Eski-Kishav	-	2,8	HMWB	UA_M5.7_0298	-	-	3	3	-
rivers of Crimea	Buranchi Ichi	Eski-Kishav	UA_R_12_S_1_Ca	5,8	River	UA_M5.7_0299	-	-	-	-	-
rivers of Crimea	Buranchi Ichi	Eski-Kishav	UA_R_12_S_1_Si	4,6	River	UA_M5.7_0300	-	-	-	-	-
rivers of Crimea	Western Bulganak	Black Sea	-	4	HMWB	UA_M5.7_0301	-	-	3	3	-
rivers of Crimea	Western Bulganak	Black Sea	-	9,3	HMWB	UA_M5.7_0302	-	-	3	3	-
rivers of Crimea	Western Bulganak	Black Sea	-	16,2	HMWB	UA_M5.7_0303	-	-	3	3	-
rivers of Crimea	Western Bulganak	Black Sea	-	17,5	HMWB	UA_M5.7_0304	-	-	3	3	-
rivers of Crimea	Untitled (Tereklav)	Lake. Lake Bogaili	UA_R_12_S_1_Si	10,7	River	UA_M5.7_0305	-	-	-	-	-
rivers of Crimea	Tobe Chokrak	Lake. Kizil-Yar Lake	-	3,6	HMWB	UA_M5.7_0306	-	-	3	3	-
rivers of Crimea	Tobe Chokrak	Lake. Kizil-Yar Lake	-	28,1	HMWB	UA_M5.7_0307	-	-	3	3	-
rivers of Crimea	б. Mikhailovskaya	Lake. Sakske Lake	-	17,6	HMWB	UA_M5.7_0308	-	-	3	3	-
rivers of Crimea	б. Mikhailovskaya	Lake. Sakske Lake	UA_R_12_M_1_Si	4,6	River	UA_M5.7_0309	-	-	-	-	-
rivers of Crimea	б. Gorkovskaya	б. Mikhailovskaya	UA_R_12_S_1_Si	12,8	River	UA_M5.7_0310	-	-	-	-	-
rivers of Crimea	б. Temesch	Lake. Sasyk Lake	-	15,5	HMWB	UA_M5.7_0311	-	-	3	3	-
rivers of Crimea	б. Career	Lake. Sasyk Lake	-	10,8	HMWB	UA_M5.7_0312	-	-	3	3	-
rivers of Crimea	б. Career	Lake. Sasyk Lake	-	16	HMWB	UA_M5.7_0313	-	-	3	3	-
rivers of Crimea	б. Listovskaya	Lake. Sasyk Lake	-	9,7	HMWB	UA_M5.7_0314	-	-	3	3	-
rivers of Crimea	б. Listovskaya	Lake. Sasyk Lake	-	5	HMWB	UA_M5.7_0315	-	-	3	3	-
rivers of Crimea	б. Lyubimovskaya	б. Listovskaya	-	13,2	HMWB	UA_M5.7_0316	-	-	3	3	-

River basin	Name of the SWB	Where does the SWb go?	Type of SWB	Length, km	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental goals	
rivers of Crimea	б. Baranovskaya	б. Listovskaya	-	1,3	HMWB	UA_M5.7_0317	-	-	3	3	-
rivers of Crimea	б. Baranovskaya	б. Listovskaya	UA_R_12_S_1_Ca	10,8	River	UA_M5.7_0318	-	-	-	-	-
rivers of Crimea	б. Baranovskaya	б. Listovskaya	UA_R_12_S_1_Si	6,8	River	UA_M5.7_0319	-	-	-	-	-
rivers of Crimea	б. Baranovskaya	б. Listovskaya	UA_R_12_M_1_Si	5,3	River	UA_M5.7_0320	-	-	-	-	-
rivers of Crimea	б. Tashkinskaya	Black Sea	-	3,6	HMWB	UA_M5.7_0321	-	-	3	3	-
rivers of Crimea	б. Tashkinskaya	Black Sea	-	12,7	HMWB	UA_M5.7_0322	-	-	3	3	-
rivers of Crimea	б. Old Donuzlav	Lake. Donuzlav Lake	-	5,1	HMWB	UA_M5.7_0323	-	-	3	3	-
rivers of Crimea	б. Old Donuzlav	Lake. Donuzlav Lake	-	7	HMWB	UA_M5.7_0324	-	-	3	3	-
rivers of Crimea	б. Old Donuzlav	Lake. Donuzlav Lake	UA_R_12_M_1_Si	20	River	UA_M5.7_0325	-	-	-	-	-
rivers of Crimea	б. Old Donuzlav	Lake. Donuzlav Lake	UA_R_12_M_1_Ca	12,2	River	UA_M5.7_0326	-	-	-	-	-
rivers of Crimea	б. Donuzlav	б. Old Donuzlav	-	16,5	HMWB	UA_M5.7_0327	-	-	3	3	-
rivers of Crimea	б. Donuzlav	б. Old Donuzlav	-	3	HMWB	UA_M5.7_0328	-	-	3	3	-
rivers of Crimea	б. Donuzlav	б. Old Donuzlav	-	1,3	HMWB	UA_M5.7_0329	-	-	3	3	-
rivers of Crimea	б. Dzharylgach	Black Sea	UA_R_12_S_1_Si	0,3	River	UA_M5.7_0330	-	-	-	-	-
rivers of Crimea	б. Dzharylgach	Black Sea	UA_R_12_S_1_Ca	15,8	River	UA_M5.7_0331	-	-	-	-	-
rivers of Crimea	б. Dzharylgach	Black Sea	UA_R_12_M_1_Ca	7,5	River	UA_M5.7_0332	-	-	-	-	-
rivers of Crimea	б. Kirovska	б. Dzharylgach	UA_R_12_S_1_Si	4,5	River	UA_M5.7_0333	-	-	-	-	-
rivers of Crimea	б. Kirovska	б. Dzharylgach	UA_R_12_S_1_Ca	11,3	River	UA_M5.7_0334	-	-	-	-	-
rivers of Crimea	б. Dzhugenskaya-Akhtanskaya	Black Sea	UA_R_12_S_1_Si	13,5	River	UA_M5.7_0335	-	-	-	-	-
rivers of Crimea	б. Dzhugenskaya-Akhtanskaya	Black Sea	UA_R_12_M_1_Si	8,6	River	UA_M5.7_0336	-	-	-	-	-
rivers of Crimea	Samarchik	Black Sea	UA_R_12_S_1_Si	10,2	River	UA_M5.7_0337	-	-	-	-	-
rivers of Crimea	Samarchik	Black Sea	-	38	HMWB	UA_M5.7_0338	-	-	3	3	-
rivers of Crimea	Untitled	Samarchik	UA_R_12_S_1_Si	16,4	River	UA_M5.7_0339	-	-	-	-	-
rivers of Crimea	Untitled	Samarchik	UA_R_12_S_1_Si	12,3	River	UA_M5.7_0340	-	-	-	-	-
rivers of Crimea	Untitled	Samarchik	-	22,7	HMWB	UA_M5.7_0341	-	-	3	3	-
rivers of Crimea	Chatarlyk	Black Sea	-	11,3	HMWB	UA_M5.7_0342	-	-	3	3	-
rivers of Crimea	Chatarlyk	Black Sea	-	33,2	HMWB	UA_M5.7_0343	-	-	3	3	-
rivers of Crimea	Chatarlyk	Black Sea	-	52,7	HMWB	UA_M5.7_0344	-	-	3	3	-
rivers of Crimea	Vorontsovka	Chatarlyk	-	5,8	HMWB	UA_M5.7_0345	-	-	3	3	-
rivers of Crimea	Vorontsovka	Chatarlyk	-	19,9	HMWB	UA_M5.7_0346	-	-	3	3	-
rivers of Crimea	Untitled	Vorontsovka	-	8,9	HMWB	UA_M5.7_0347	-	-	3	3	-
rivers of Crimea	Untitled	Vorontsovka	-	12,2	HMWB	UA_M5.7_0348	-	-	3	3	-
rivers of Crimea	North Crimean Canal	Kakhovka reservoir	-	146,4	SHMPV	UA_M5.7_0349	-	-	-	-	-
rivers of Crimea	Razdolnensky Canal	North Crimean Canal	-	34	SHMPV	UA_M5.7_0350	-	-	-	-	-
rivers of Crimea	East Razdolnenskaya branch	Razdolnensky Canal	-	19,3	SHMPV	UA_M5.7_0351	-	-	-	-	-
rivers of Crimea	Connecting channel	Razdolnensky Canal	-	41,5	SHMPV	UA_M5.7_0352	-	-	-	-	-
rivers of Crimea	Black Sea Canal	Connecting channel	-	44,5	SHMPV	UA_M5.7_0353	-	-	-	-	-
rivers of Crimea	Rch-2	Connecting channel	-	52	SHMPV	UA_M5.7_0354	-	-	-	-	-
rivers of Crimea	Saki Canal	Connecting channel	-	57	SHMPV	UA_M5.7_0355	-	-	-	-	-
rivers of Crimea	Razdolnenskaya branch	Razdolnensky Canal	-	11,8	SHMPV	UA_M5.7_0357	-	-	-	-	-
rivers of Crimea	Zapadno-Rozdolnenskaya branch	Razdolnensky Canal	-	33	SHMPV	UA_M5.7_0358	-	-	-	-	-
rivers of Crimea	Azov Canal	North Crimean Canal	-	43,3	SHMPV	UA_M5.7_0359	-	-	-	-	-
rivers of Crimea	The Red Guard branch of the	Connecting channel	-	78,9	SHMPV	UA_M5.7_0360	-	-	-	-	-

Polygonal SWBs

River basin	Name of the SWB	Type of SWBs	Area, km2	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental objectives	
									Good ecological status/potential	good chemical status
rivers of Crimea	Simferopol reservoir	-	2,8	HMWB	UA_M5.7_0015	-	-	3	3	-
rivers of Crimea	Balanovskoye reservoir	-	0,4	HMWB	UA_M5.7_0033	-	-	3	3	-
rivers of Crimea	Belogorskoye Reservoir	-	1,9	HMWB	UA_M5.7_0058	-	-	3	3	-
rivers of Crimea	Taiga reservoir	-	1,8	HMWB	UA_M5.7_0068	-	-	3	3	-
rivers of Crimea	Feodosia reservoir	-	2,0	HMWB	UA_M5.7_0119	-	-	3	3	-
rivers of Crimea	Lake. Lake Parpach-Kol	UA_L_12_S_1_SH_Si	0,7	lake	UA_M5.7_0121	-	-	-	-	-
rivers of Crimea	Lake. Aktaskoye Lake	UA_L_12_L_1_SH_Si	24,0	lake	UA_M5.7_0133	-	-	-	-	-
rivers of Crimea	Astana reservoir	-	11,9	HMWB	UA_M5.7_0136	-	-	3	3	-
rivers of Crimea	Yuzmak reservoir	-	1,5	HMWB	UA_M5.7_0138	-	-	3	3	-
rivers of Crimea	Zelenoyarskoye reservoir	-	0,3	HMWB	UA_M5.7_0142	-	-	3	3	-
rivers of Crimea	Chornorichenskoye Reservoir	-	6,0	HMWB	UA_M5.7_0233	-	-	3	3	-
rivers of Crimea	Zahirske Reservoir	-	1,5	HMWB	UA_M5.7_0263	-	-	3	3	-
rivers of Crimea	Partizanske Reservoir	-	1,8	HMWB	UA_M5.7_0285	-	-	3	3	-
rivers of Crimea	Mezhyhirya reservoir	-	3,5	SHMPV	UA_M5.7_0356	-	-	-	-	-
rivers of Crimea	Samarli reservoir	-	1,4	SHMPV	UA_M5.7_0361	-	-	-	-	-
rivers of Crimea	Kerch reservoir	-	2,0	SHMPV	UA_M5.7_0362	-	-	-	-	-
rivers of Crimea	Lake. Lake Yangul (Lake Churyumskoye)	UA_L_12_M_1_SH_Si	2,8	lake	UA_M5.7_0363	-	-	-	-	-
rivers of Crimea	Lake. Krugloe	UA_L_12_M_1_SH_Si	2,6	lake	UA_M5.7_0364	-	-	-	-	-

River basin	Name of the SWB	Type of SWBs	Area, km2	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental objectives	
	(Adaman Lake)									
rivers of Crimea	Fish farming pond	-	3,2	SHMPV	UA_M5.7_0365	-	-	-	-	-
rivers of Crimea	Fish farming pond	-	3,0	SHMPV	UA_M5.7_0366	-	-	-	-	-
rivers of Crimea	Fish farming pond	-	1,7	SHMPV	UA_M5.7_0367	-	-	-	-	-
rivers of Crimea	Fish farming pond	-	1,1	SHMPV	UA_M5.7_0368	-	-	-	-	-
ivers of Crimea	Lake. Chokratske Lake	UA_L_12_M_1_SH_Si	8,5	lake	UA_M5.7_0369	-	-	-	-	-
rivers of Crimea	Lake. Lake Marfovskoye	UA_L_12_M_1_SH_Si	2,4	lake	UA_M5.7_0370	-	-	-	-	-
rivers of Crimea	lake. No name (near Borysiv village)	UA_L_12_S_1_SH_Si	0,8	lake	UA_M5.7_0371	-	-	-	-	-
rivers of Crimea	Lake. Lake Kiroyashskoye	UA_L_12_S_1_SH_Si	0,6	lake	UA_M5.7_0372	-	-	-	-	-
rivers of Crimea	Lake. Koyashskoye	UA_L_12_M_1_SH_Si	5,3	lake	UA_M5.7_0373	-	-	-	-	-
rivers of Crimea	Lake. Kachik	UA_L_12_M_1_SH_Si	4,4	lake	UA_M5.7_0374	-	-	-	-	-
rivers of Crimea	Frontline reservoir	-	5,6	SHMPV	UA_M5.7_0375	-	-	-	-	-
rivers of Crimea	Lake. Kamyshinsky Lug	UA_L_12_M_1_SH_Si	4,3	lake	UA_M5.7_0376	-	-	-	-	-
rivers of Crimea	Lake. Achi Lake	UA_L_12_M_1_SH_Si	2,4	lake	UA_M5.7_0377	-	-	-	-	-
rivers of Crimea	Lake. Lake Ajigol (Lake Ashchigol)	UA_L_12_S_1_SH_Si	0,6	lake	UA_M5.7_0378	-	-	-	-	-
rivers of Crimea	Lake. Solone	UA_L_12_M_1_SH_Si	1,6	lake	UA_M5.7_0379	-	-	-	-	-
rivers of Crimea	Lake. Lake Adzhibaychytske	UA_L_12_S_1_SH_Si	0,8	lake	UA_M5.7_0380	-	-	-	-	-
rivers of Crimea	Lake. Lake Oiburskoye	UA_L_12_M_1_SH_Si	4,8	lake	UA_M5.7_0381	-	-	-	-	-
rivers of Crimea	Lake. Lake Liman	UA_L_12_M_1_SH_Si	1,5	lake	UA_M5.7_0382	-	-	-	-	-
rivers of Crimea	Lake. Panske Lake	UA_L_12_M_1_SH_Ca	5,5	lake	UA_M5.7_0383	-	-	-	-	-
rivers of Crimea	Lake. Yarilgach Lake	UA_L_12_M_1_SH_Ca	1,8	lake	UA_M5.7_0384	-	-	-	-	-
rivers of Crimea	Filling pond	-	0,5	SHMPV	UA_M5.7_0385	-	-	-	-	-
rivers of Crimea	Filling pond	-	1,1	SHMPV	UA_M5.7_0386	-	-	-	-	-
rivers of Crimea	Filling pond	-	5,3	SHMPV	UA_M5.7_0387	-	-	-	-	-

River basin	Name of the SWB	Type of SWBs	Area, km2	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental objectives	
rivers of Crimea	Filling pond	-	4,2	SHMPV	UA_M5.7_0388	-	-	-	-	-
rivers of Crimea	Filling pond	-	1,0	SHMPV	UA_M5.7_0389	-	-	-	-	-
rivers of Crimea	Filling pond	-	0,6	SHMPV	UA_M5.7_0390	-	-	-	-	-
rivers of Crimea	Lake. Uzunlarskoye Lake	UA_TW_M5_H_C	21,4	transitional waters	UA_M5.7_0391	-	-	-	-	-
rivers of Crimea	Lake. Lake Bagaili	UA_TW_M5_H_C	1,0	transitional waters	UA_M5.7_0392	-	-	-	-	-
rivers of Crimea	Lake. Kizil-Yar Lake	UA_TW_M5_H_C	8,5	transitional waters	UA_M5.7_0393	-	-	-	-	-
rivers of Crimea	Lake. Sakske Lake	UA_TW_M5_H_C	9,7	transitional waters	UA_M5.7_0394	-	-	-	-	-
rivers of Crimea	Lake. Sasyk Lake	UA_TW_M5_H_C	79,3	transitional waters	UA_M5.7_0395	-	-	-	-	-
rivers of Crimea	Lake. Donuzlav Lake	UA_TW_M5_H_O	50,6	transitional waters	UA_M5.7_0396	-	-	-	-	-
rivers of Crimea	Lake. Dzharylgach Lake	UA_TW_M5_H_C	8,5	transitional waters	UA_M5.7_0397	-	-	-	-	-
rivers of Crimea	Lake. Bakalske Lake	UA_TW_M5_H_C	6,9	transitional waters	UA_M5.7_0398	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_SH_D_SS	88,2	coastal waters	UA_M5.7_0418	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_SH_I_S	187,9	coastal waters	UA_M5.7_0414	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M6_M_SH_S_CS	109,3	coastal waters	UA_M5.7_0412	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_SH_I_SS	138,2	coastal waters	UA_M5.7_0423	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_EX_I_SS	599,1	coastal waters	UA_M5.7_0421	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_EX_I_S	204,9	coastal waters	UA_M5.7_0420	-	-	-	-	-
rivers of Crimea	coastal waters of the	UA_CW_M5_M_SH_I_SS	163,7	coastal waters	UA_M5.7_0416	-	-	-	-	-

River basin	Name of the SWB	Type of SWBs	Area, km2	Category of SWB	SWB code	Point sources	Diffuse sources	Hydromorphology	Risk of not achieving environmental objectives	
	Crimea									
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_EX_D_CS	559,2	coastal waters	UA_M5.7_0415	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M6_M_EX_S_CS	166,7	coastal waters	UA_M5.7_0411	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_EX_S_SS	316,2	coastal waters	UA_M5.7_0413	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_EX_I_SS	401,0	coastal waters	UA_M5.7_0422	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_SH_D_CS	613,4	coastal waters	UA_M5.7_0417	-	-	-	-	-
rivers of Crimea	coastal waters of the Crimea	UA_CW_M5_M_SH_D_CS	110,5	coastal waters	UA_M5.7_0419	-	-	-	-	-

Annex 2. Characteristics of the identified GWBs

Table 1 - Characteristics of MWM in alluvial Neopleistocene-Holocene sediments

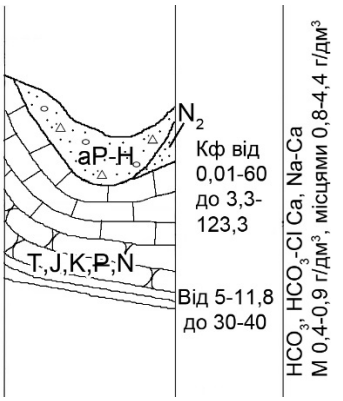
Parameters.	Characteristics	Lithological and hydrogeological column
IPPC code	UAM5700Q100	
Name of the MOU	MWP in alluvial Neopleistocene-Holocene sediments	
The area of the MPSV group	1080,0	
Geological index	aP-H	
Lithology of water-bearing rocks	Pebble-gravel and crushed stone material with sandy loam or loamy filler; loamy sandy deposits	
Type of aquifer: unconfined or artesian	Non-pressure	
Overlapping rocks	-	
Capacity of the MPSV group, min-max/average, m	From 5-11.8 to 30-40 N.v.	
Filtration coefficient, k min.-max./average, m/day	From 0.01-60 to 3.3-123.3 19,39-25,13	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	From 0.5-2.4 to 9.4-13.5 N.v.	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 0.4-0.9 g/dm^3 , HCO_3 , , HCO_3 -Cl Ca, Na-Ca In some areas, mineralisation is 0.8-4.4 g/dm^3	
Main power supply	Infiltration of precipitation, surface water, flow from underlying horizons	
Relationship to surface water	Directly related	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	386-653	

Table 2 - Characteristics of MWM in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments

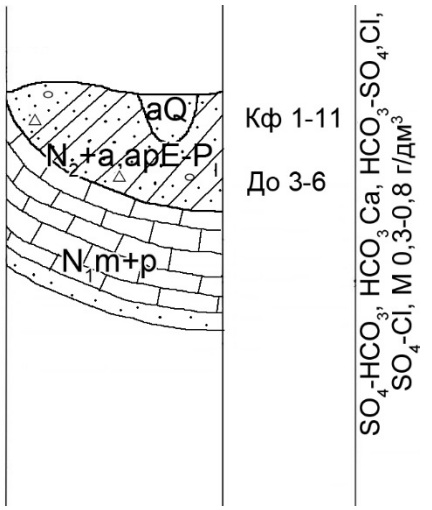
Parameters.	Characteristics	Lithological and hydrogeological column
IPPC code	UAM570NQ100	
Name of the MOU	MPZV in Pliocene and alluvial, alluvial-proluvial Eopleistocene-Lower Neopleistocene sediments	
The area of the MPSV group	530,7	
Geological index	N_2 +a,apE-P_I	
Lithology of water-bearing rocks	gravel and pebble formations with loamy fill, sandy loam and loam	
Type of aquifer: unconfined or artesian	Non-pressure	
Overlapping rocks	-	
Capacity of the MPSV group, min-max/average, m	Up to 3-6 N.v.	
Filtration coefficient, k min.-max./average, m/day	1,0-11,0 N.v.	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	from 1.4-9.1 m to 18 N.v.	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 0.3-0.8 g/dm^3 , SO_4 -HCO_3 , HCO_3 Ca, HCO_3 - SO_4 Cl, SO -Cl_4	
Main power supply	Infiltration of precipitation, surface water, flow from horizons underlying the irrigation	
Relationship to surface water	Yes	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	kind	
Reliability of information	High	
Annual precipitation, mm	386-512	

Table 3 - Characteristics of MWM in Meotian and Pontic sediments

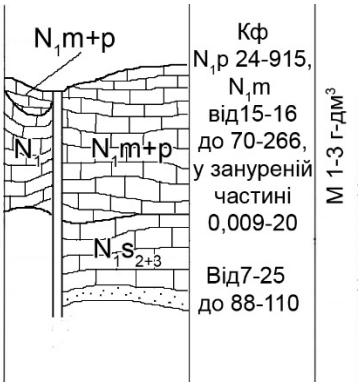
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM5700N100	
Name of the MH&S group	MWP in meotic and pontic sediments	
The area of the MPSV group	5179,0	
Geological index	(N_1 m+p)	
Lithology of water-bearing rocks	shell limestone, porous, karstic, rarely oolitic, with marl layers, quartz and shell sands, sandstones with clay layers	
Type of aquifer: unconfined or artesian	Mostly pressure	
Overlapping rocks	water-resistant Upper Pontic marls, sands and clays of the Upper and Middle Pliocene, and Quaternary loams within the uplands	
Capacity of the MPSV group, min-max/average, m	from 7-25 to 88-110/. 20-57	
Filtration coefficient, k min.-max./average, m/day	Pontic Limestone 24 -915, Meotian Limestone - from 15-16 less frequently, up to 70-266. In the submerged part 0.009-20	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	From 4-20 to 200-244/ N.v.	
Head, m	0-190	
Average annual fluctuations in the level of PV, m	0,2-0,7	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 1-3 g/dm^3 , HCO^3 , HCO_3 -So_4 Ca-Mg	
Main power supply	Infiltration of precipitation,	
Relationship to surface water	-	
RPV trend	Stable	
The predominant human activity	Operation for water supply and irrigation	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	386-512	

Table 4 - Characteristics of the MWM in the Middle-Upper Sarmatian, Meotian and Pontic sediments

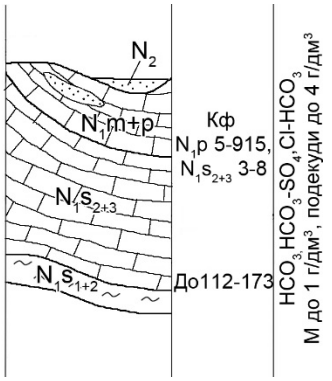
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM5700N200	
Name of the MH&S group	MWP in the Middle-Upper Sarmatian, Meotian and Pontic sediments	
The area of the MPSV group	3171,0	
Geological index	(N s_{12+3} +m+p)	
Lithology of water-bearing rocks	Fractured, porous, cavernous limestone, sands and sandstones in the lower part of the section	
Type of aquifer: unconfined or artesian	Pressure, in places of access to the earth's surface and shallow occurrence - non-pressure	
Overlapping rocks	clays of the Cimmerian regional layer, in some areas - sandy Pliocene deposits	
Capacity of the MPSV group, min-max/average, m	To 112-173 N.v.	
Filtration coefficient, k min.-max./average, m/day	limestones Pontic region 5-915, Sarmatian region 3-8	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	18-25 N.v.	
Head, m	Up to 68-86	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation up to 1 g/dm prevails^3 , in some places up to 4 g/dm^3 HCO_3 , HCO_3 -SO_4 , Cl-HCO_3 , in the submerged part - Cl Na, mineralisation up to 17-22 g/dm3	
Main power supply	Infiltration of precipitation, flow of irrigation water from overlying horizons	
Relationship to surface water	-	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	386-512	

Table 5 - Characteristics of the MWM in the Middle-Upper Sarmatian outcrops

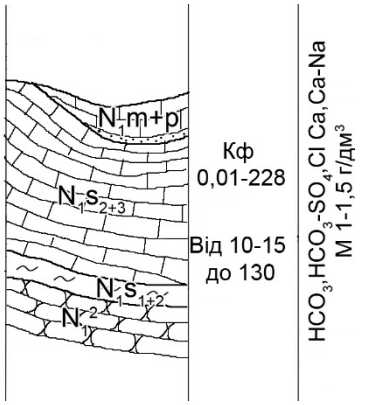
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM5700N300	
Name of the MH&S group	MWP in the Middle-Upper Sarmatian sediments	
The area of the MPSV group	8197,0	
Geological index	(N s)12+3	
Lithology of water-bearing rocks	Limestone with interbedded sands, sandstones, clays and conglomerates	
Type of aquifer: unconfined or artesian	Pressure, in places of access to the earth's surface and shallow occurrence - non-pressure	
Overlapping rocks	clays and marls of the meotis	
Capacity of the MPSV group, min-max/average, m	From 10-15 to 130 N.v.	
Filtration coefficient, k min.-max./average, m/day	0,01-228	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	3-150	
Head, m	N.v.	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 1.0-1.5 g/dm^3 , HCO_3 , HCO_3 -SO_4 , Cl Ca, Ca-Na. In coastal areas - Cl Na, mineralisation up to 10-46.8 g/dm^3	
Main power supply	Infiltration of precipitation, flow from overlying horizons	
Relationship to surface water	-	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	386-512	

Table 6 - Characteristics of the MWM in the Middle Miocene sediments

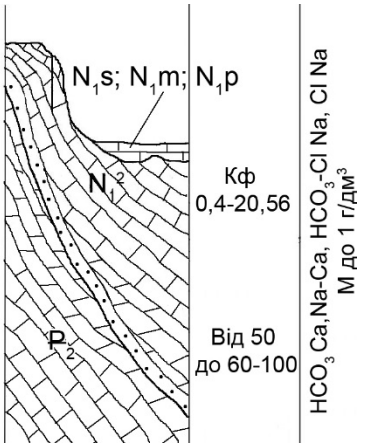
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM5700N400	
Name of the MHPS group	Group of MWPs in Middle Miocene sediments	
The area of the MPSV group	3277,0	
Geological index	N_1^2	
Lithology of water-bearing rocks	limestone, sands, sandstones	
Type of aquifer: unconfined or artesian	Pressure, in places of access to the earth's surface and shallow occurrence - non-pressure	
Overlapping rocks	Lower and Middle Sarmatian clays	
Capacity of the MPSV group, min-max/average, m	From 50 to 60-100 N.v.	
Filtration coefficient, k min.-max./average, m/day	0,4-20,56	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	0.6-29 (foothills)	
Head, m	75-554,5	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation does not exceed 1 g/dm^3 , HCO_3 , Ca, Na-Ca, HCO_3- Cl Na, Cl Na In the submerged part, mineralisation is up to 3 g/dm3 and more	
Main power supply	Infiltration of precipitation, flow from overlying horizons	
Relationship to surface water	-	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	386-512	

Table 7 - Characteristics of MWM in Eocene sediments

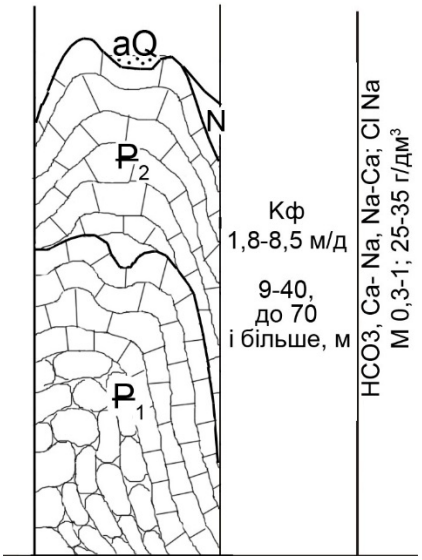
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM570PG100	
Name of the MH&S group	MWP in Eocene sediments	
The area of the MPSV group	350,15	
Geological index	(P)2	
Lithology of water-bearing rocks	Numulitic limestone facies replaced by marl and calcareous sandstones in the northern part	
Type of aquifer: unconfined or artesian	Pressure, in places of access to the earth's surface and shallow occurrence - non-pressure	
Overlapping rocks	Upper Eocene marls	
Capacity of the MPSV group, min-max/average, m	From 9 to 40, increasing to the north to 70 metres or more	
Filtration coefficient, k min.-max./average, m/day	1,8-8,5	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	24-33 in the field of power supply	
Head, m	Up to 122 and more	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 0.3-1 g/dm^3 , HCO_3 , Ca-Na, Na-Ca In the submerged parts, mineralisation is up to 25-35 g/dm3 Cl Na	
Main power supply	Infiltration of precipitation, surface water, flow from underlying horizons	
Relationship to surface water	Discharge into the erosion network	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	412-512	

Table 8 - Characteristics of MWP in Paleocene sediments

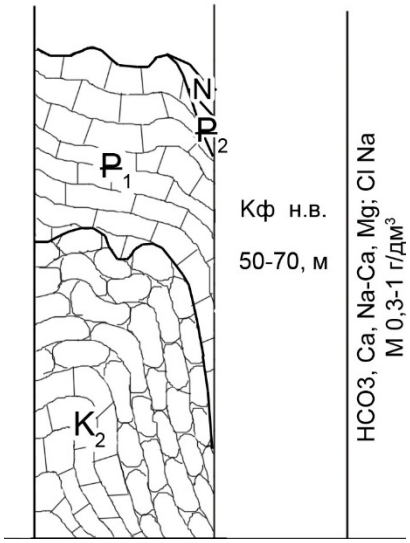
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV		
Name of the MH&S group	MWP in Paleocene sediments	
The area of the MPSV group	125,1	
Geological index	~~P~~$_1$	
Lithology of water-bearing rocks	Limestone	
Type of aquifer: unconfined or artesian	Pressure, in places of access to the earth's surface and shallow occurrence - non-pressure	
Overlapping rocks	Eocene clay rocks	
Capacity of the MPSV group, min-max/average, m	50-70 N.v.	
Filtration coefficient, k min.-max./average, m/day	N.v.	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	24-33 in places of feeding areas N.v.	
Head, m	N.v.	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 0.3-1 g/dm^3 , HCO_3 , Ca, Na-Ca, Mg In the submerged areas, mineralisation increases, Cl Na	
Main power supply	Infiltration of precipitation, surface water, flow from underlying horizons	
Relationship to surface water	Discharge into the erosion network	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	412-512	

Table 9 - Characteristics of the Lower Cretaceous deposits

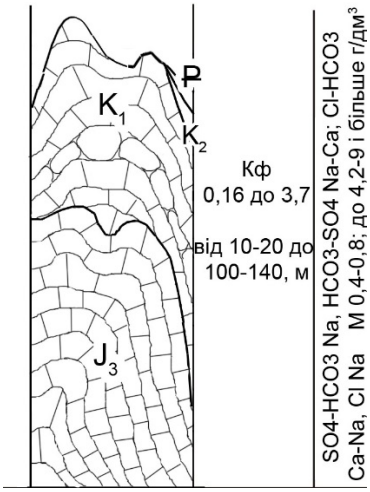
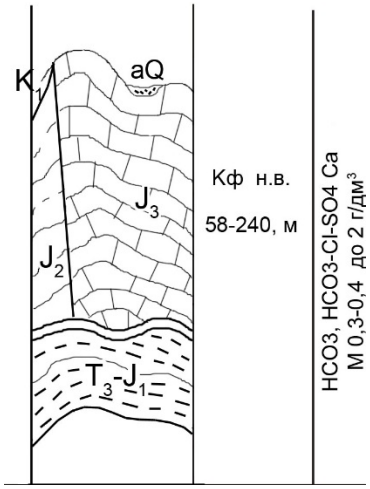
Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM5700K100	
Name of the MHPS group	MWR in Lower Cretaceous sediments	
The area of the MPSV group	922,3	
Geological index	K_1	
Lithology of water-bearing rocks	Limestone, sandstone, conglomerates and gravels, locally separated by clayey rocks	
Type of aquifer: unconfined or artesian	Pressure, in places of access to the earth's surface and shallow occurrence - non-pressure	
Overlapping rocks	Clay rocks, Paleogene limestone	
Capacity of the MPSV group, min-max/average, m	From 10-20 to 100-140 N.v.	
Filtration coefficient, k min.-max./average, m/day	0.156 to 3.76	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	From 3-5 to 309.1 N.v.	
Head, m	61,65-310,0	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of captive sources	N.v.	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 0.4-08 g/dm^3 , SO_4 - HCO_3 Na, HCO3-SO4 Na-Ca In the submerged part of Cl-HCO3 Ca-Na, Cl Na, mineralisation up to 4.2-9 g/dm3 and more	
Main power supply	Infiltration of precipitation, surface water, flow from the Upper Jurassic aquifer	
Relationship to surface water	Discharge into the erosion network	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	412-653	

Table 10 - Characteristics of MWM in Upper Jurassic sediments

Parameters.	Characteristics	Lithological and hydrogeological column
Group code of the MPZV	UAM5700J100	
Name of the MHPS group	Group of IPPCs in legal deposits	
The area of the MPSV group	1275,0	
Geological index	J_3	
Lithology of water-bearing rocks	Intensively karstic fractured limestone and, less frequently, conglomerates and sandstones	
Type of aquifer: unconfined or artesian	Mostly pressure	
Overlapping rocks	-	
Capacity of the MPSV group, min-max/average, m	58-240 N.v.	
Filtration coefficient, k min.-max./average, m/day	N.v.	
Water supply, km, min-max/average, m /day^2	N.v.	
PV level, min-max/average, m	N.v.	
Head, m	115-630	
Average annual fluctuations in the level of PV, m	N.v.	
Use for water abstraction> 10 m^3 /day: yes/no	Yes	
Number of sources	More than 2,000	
Number of operational units.	N.v.	
Chemical composition (mineralisation, major anions, cations)	Mineralisation 0.3-0.4 g/dm^3 , up to 2 g/dm^3 HCO_3 , HCO_3 -Cl-SO4 Ca	
Main power supply	Infiltration of precipitation,	
Relationship to surface water	Unloading in the zone of tectonic faults and erosion network	
RPV trend	Stable	
The predominant human activity	Operation for water supply	
Chemical status of the IPPC group	Good	
Quantitative status of the MHPSS group	Good	
Reliability of information	High	
Annual precipitation, mm	412-653	

Annex 3 List of sites in the Crimean River Basin Emerald Network

№	Name of the territory	Code.
1	Crimean Nature Reserve	UA0000005
2	Cape Martian Nature Reserve	UA0000007
3	Karadazh Nature Reserve	UA0000008
4	Opuk Nature Reserve	UA0000009
5	Yalta Mountain and Forest Nature Reserve	UA0000021
6	Kazantip Nature Reserve	UA0000022
7	Sevastopol Nature Reserve	UA0000126
8	Bakhchisaray-Alushta Nature Reserve	UA0000127
9	Belogorskii reserve	UA0000128
10	Karalar Nature Reserve	UA0000129
11	National Nature Park "Magic Harbour"	UA0000130
12	Vostochny Syvash Nature Reserve	UA0000131
13	Baidar reserve and Cape Aya	UA0000132
14	Black Sea Dolphins Protected Area	UA0000148
15	Protected area "Mount White"	UA0000152
16	Tepe-Oba protected area	UA0000155
17	Ayu-Dag protected area	UA0000200
18	Ak-Monai Steppe Protected Area	UA0000201
19	Meganom protected area	UA0000204
20	Kovylna protected area	UA0000352
21	Sary-Bash protected area	UA0000353
22	Slavne protected area	UA0000354
23	Protected area "Crimean foothill steppes"	UA0000373
24	Protected area "Tarkhankut"	UA0000376
25	Protected area "Kerch Peninsula"	UA0000377
26	Saki Nature Reserve	UA0000378
27	Donuzlav Nature Reserve	UA0000379
28	Kizil-Yar protected area	UA0000380
29	Kerch Strait Protected Area	UA0000381
30	Sea area off the Tarkhanskut Peninsula and Lake Karadzha	UA0000388
31	Protected area - Dzharylgach, Yarilgach and Panske lakes	UA0000390
32	Protected area "Cape Ai-Todor"	UA0000391
33	Laspi and Sarych Protected Area	UA0000392
34	Protected area "Aigulsky site and Istochne"	UA0000394
35	Cape Plaka Protected Area	UA0000395
36	Protected area - Mount Kosh-Kaya and the Swan Wing and Maiden rocks	UA0000397
37	Protected area - Karkinit Bay and Bakal Spit	UA0000398
38	Protected area - Solnechnohirske and Malorichynske	UA0000399
39	Protected area "Crimean coast of Syvash"	UA0000411
40	Protected area of Eski-Kishlav and Buranci-Echi	UA0000431
41	Gerakleysky Nature Reserve	UA0000462
42	Kanaka protected area	UA0000603
43	Protected area "Kuchuk-Lambat stone chaos"	UA0000604