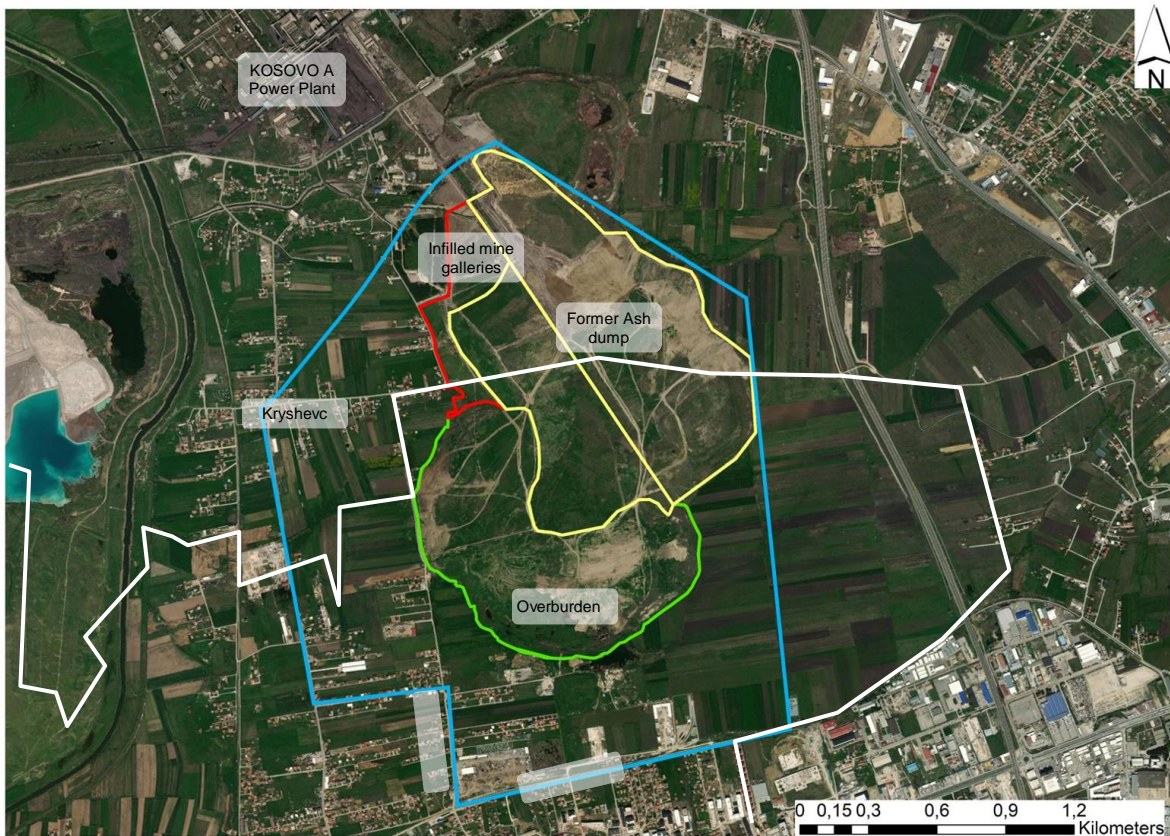


The project site is in an area linking three municipalities Fushe Kosova, Obiliq and the capital of Kosovo, Prishtina. Figure 1 shows the location of the project area, consisted of the infilled mine galleries area marked with the red lines, the area with the green line is the overburden site and the yellow line is the former ash dump which is not included in this project.



The surrounding region is rich in lignite which has been used as a source of energy for local coal-fired power plants over the last 50 years. The areas surrounding the KEK-overburden site have been mined for lignite. The surroundings have also been used to dispose of waste ash from the coal-fired power plants.

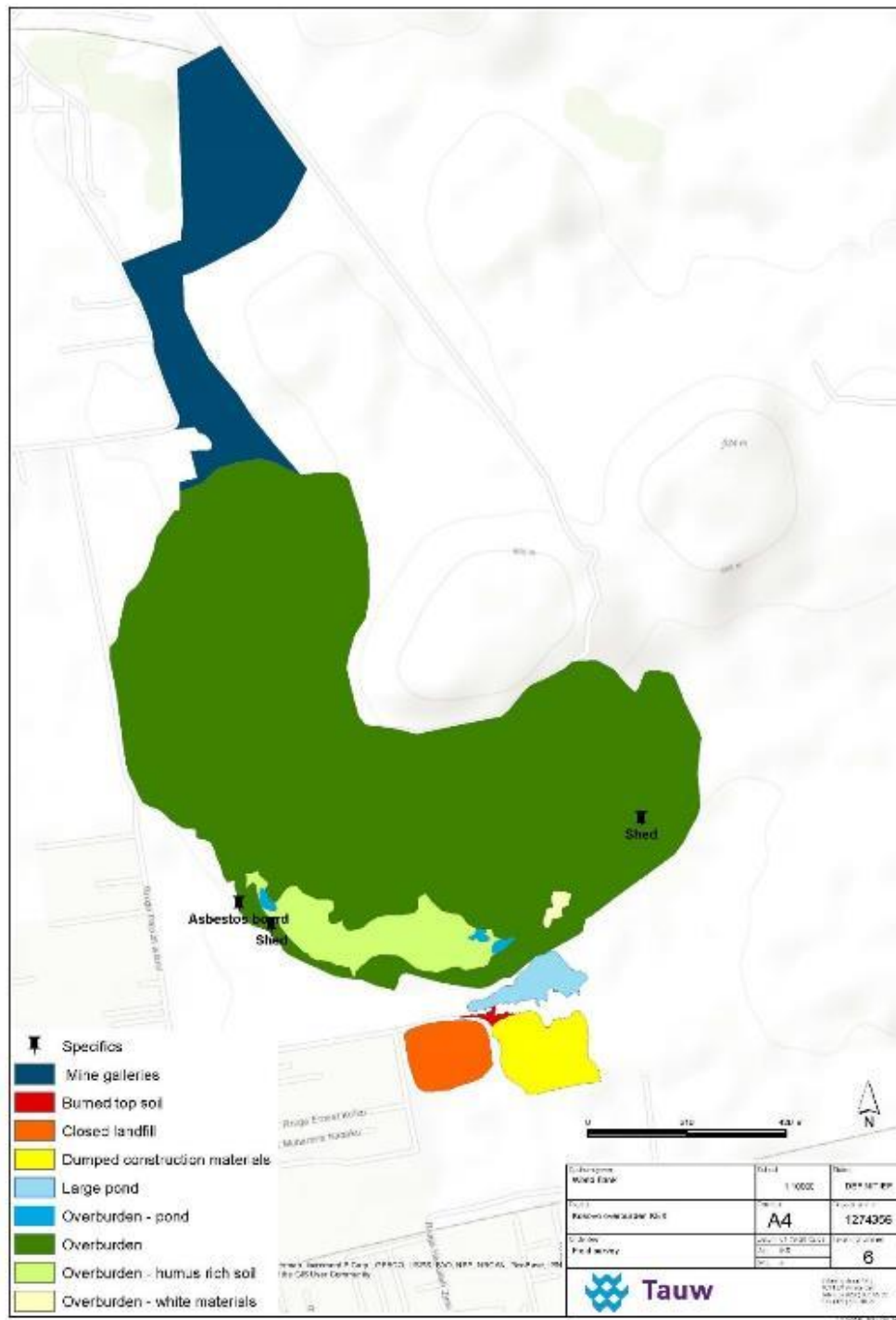


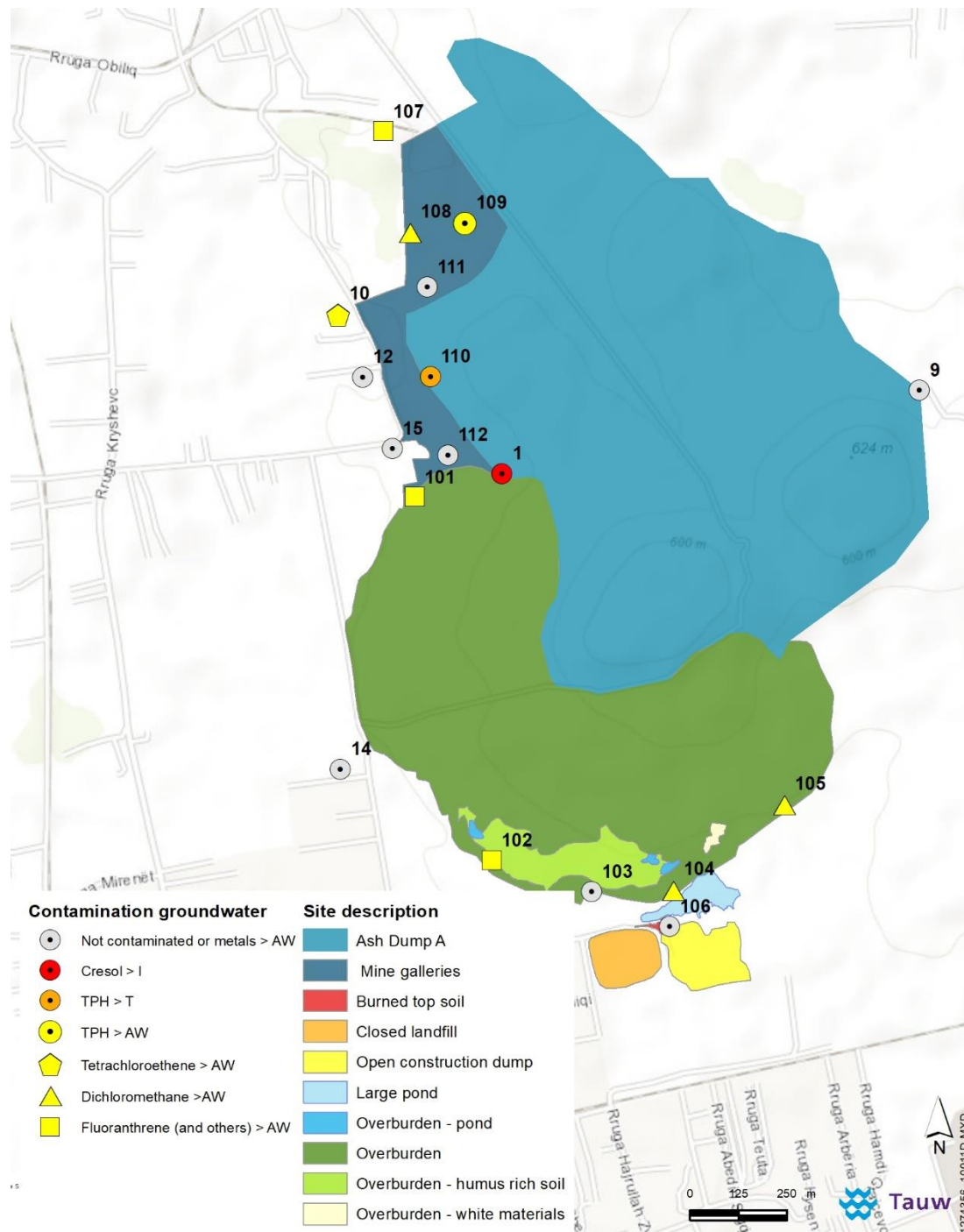
Figure 2. The KEK-overburden site, with the Ash Dump A on its eastern border. Appendix 3 contains the same picture with more detailed view

The KEK-overburden site is the dumped overburden of a former nearby open lignite mine. The overburden is built up with material excavated by a rotary excavator. The soil of the overburden was deposited on former

agriculture land via a conveyor belt. The deposition of overburden soil by a conveyor belt mixed the different soil materials that were removed during lignite mining. The original topography of the area consisted of an area with numerous hillocks. The deposited overburden was levelled again mixing the soil materials. After the overburden was levelled a second layer was dumped on top of it etc. The eventual dome of the overburden was profiled before its current height was reached. These operations resulted in a heterogenous dome of overburden.

Local inhabitants have also deposited construction waste and domestic solid waste in between the hillocks, however the amount of dumped waste is limited as the KEK-overburden site is far from the nearest urban areas. The dumping, levelling and profiling took place over period of several years. The adjacent Ash Dump A has dumped ash from the nearby coal-fired power plant, that used the locally mined lignite. As the ash was uncapped for an extensive period, wind erosion may have deposited ashes on the overburden. Wind erosion was deliberately reduced by KEK, who discharged water from the lignite drying plant on the ash dump. The water compacted and solidified the top layer of the ash resulting in a surface less susceptible to wind erosion. The discharged water contained Phenol.

In order to identify and properly evaluate if the site is suitable for remediation and re-vegetation, KEK together with INKOS and TAUW (the Netherlands) did a sampling campaign on soil and groundwater analysis, where the results of this campaign are presented as follows:



What has resulted from the sampling campaign and as seen from the map, the contaminated locations/points are identified with yellow, orange and red colours. While the level of the grey and yellow is clean or low and do not need remediation actions, the point identified in orange and red requires some measures in order to make the park ready for public use. **Based on an extensive investigation and international (Dutch) risk models there are no human health risks related to the overburden area. Not now and not in the future situation as a park.**

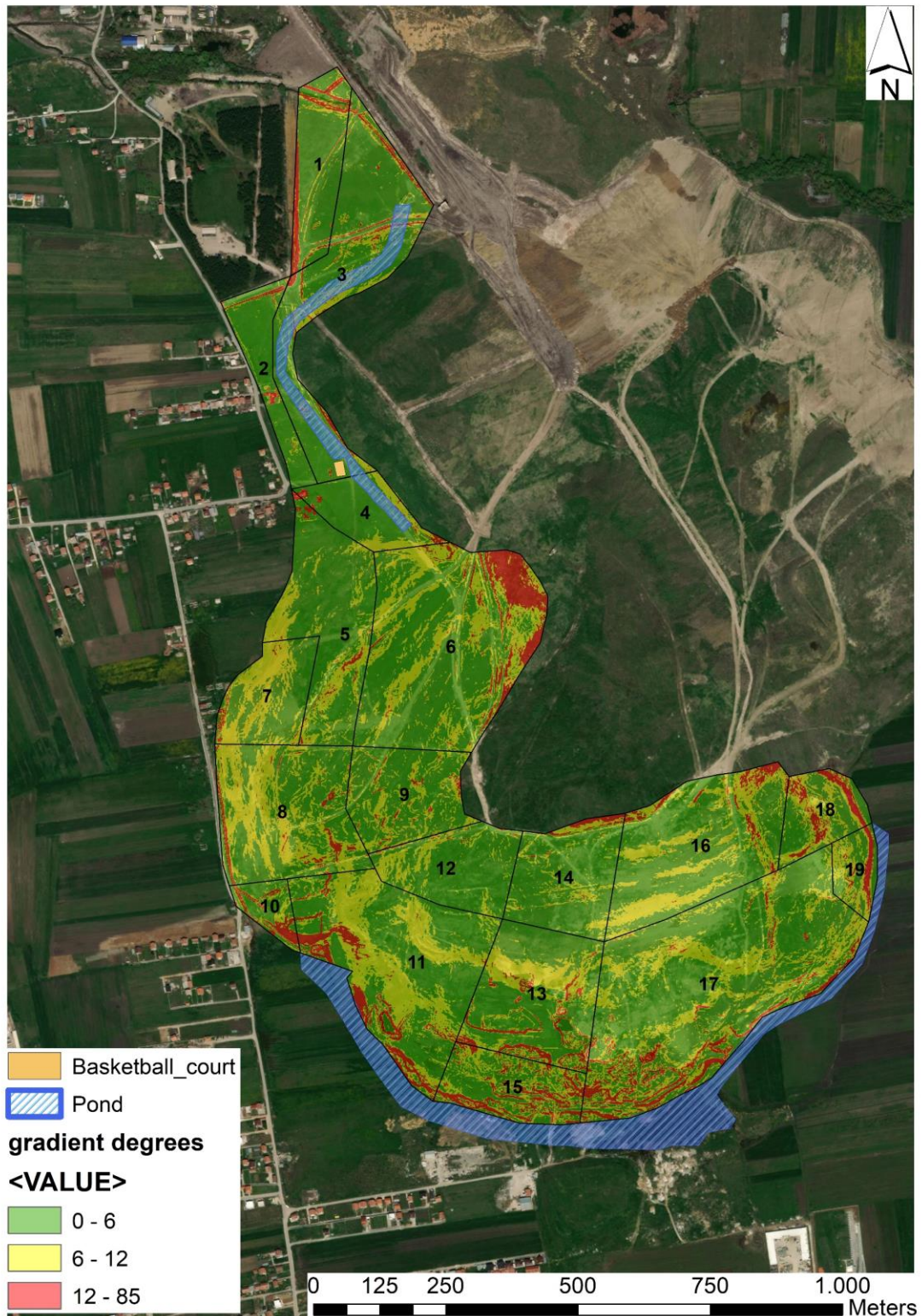
The concept is to redevelop the area into a tranquillity park. The redevelopment will take place in two phases. The first phase is the redevelopment of the infilled mine galleries area, followed by the redevelopment of the overburden site. For this last section an agreement with the various landowners should be established.

The table below gives an explanation on the function of each sector of the park, which is divided based on the quality of the land use

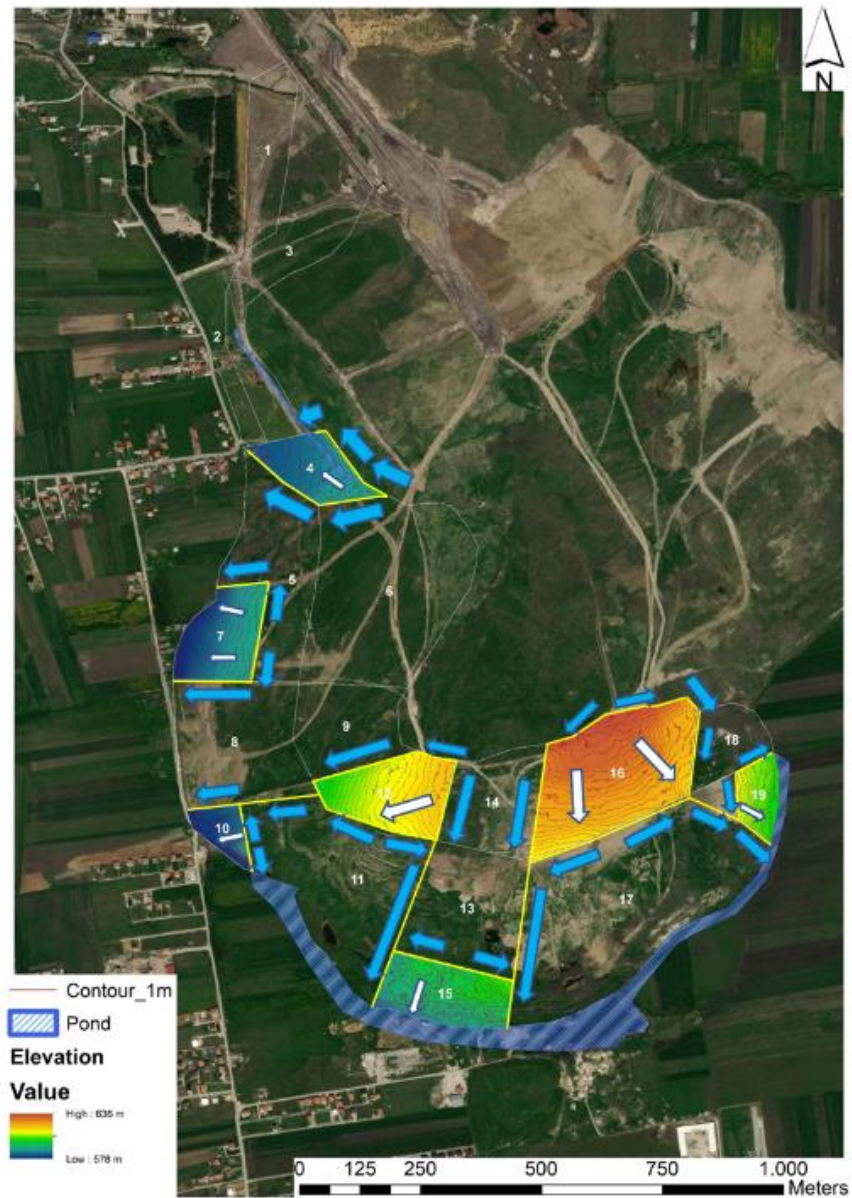
Element	Function	Area in ha	Average gradient
1	Greening -reforestation	3,0	5,5
2	Greening -reforestation	2,1	3,5
3	Greening -reforestation	7,4	4,2
4	Sport facility	2,3	4,6
5	Greening -reforestation	5,7	5,1
6	Greening -reforestation	11,1	6,3
7	Parking	2,8	6,2
8	Greening -reforestation	6,5	6,3
9	Greening -reforestation	3,7	5,1
10	Parking	1,0	8,4
11	Greening -reforestation	9,3	7,0
12	Small Businesses	3,4	4,6
13	Greening -reforestation	5,6	6,1
14	Greening -reforestation	3,9	4,5
15	Parking	3,1	8,2
16	Sport and recreational facility	7,2	5,6
17	Greening -reforestation	14,9	5,8
18	Greening -reforestation	2,1	7,6
19	Parking	1,2	7,3

While the map below explains the sectors, the area each sector will cover and the gradient (slope) of the location





As the terrain is sloping, there was a solution of water runoff proposed by TAUW experts, in order to help the rain water be drained without causing any damage to rehabilitated site/park. The arrows explain how the water runoff will be moving toward small ponds, formed naturally at the bottom of the ash dumpsites in edges (northern and southern), which in addition will provide attraction to users of the park.

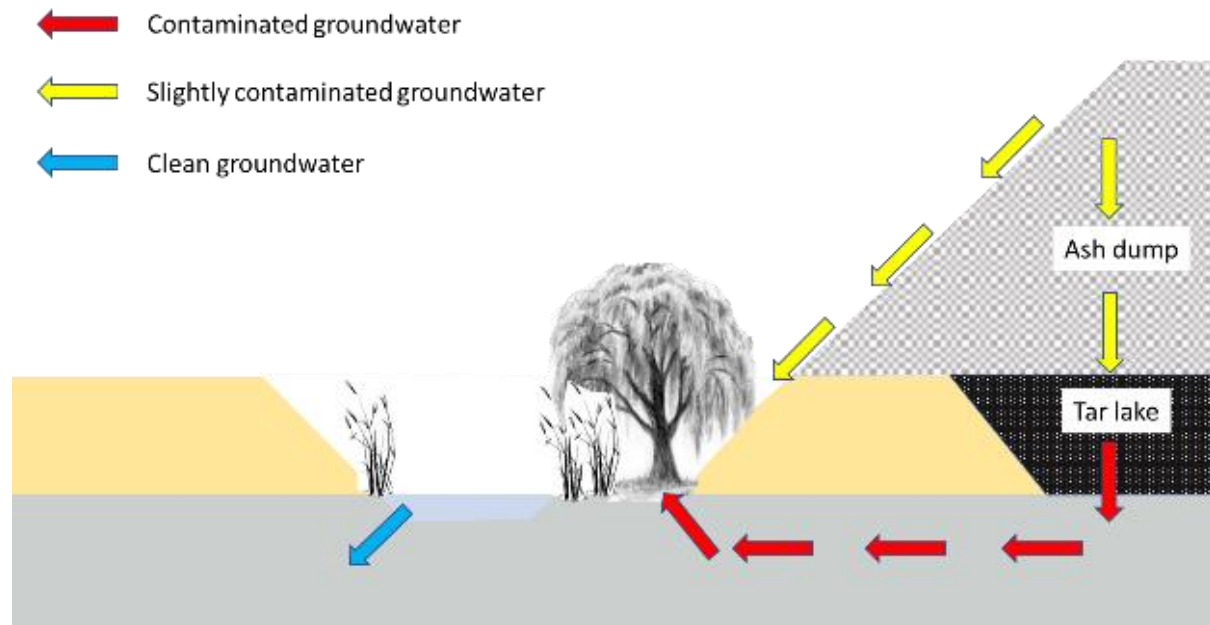


While designing the park, KEK and international experts (TAUW) have thought of making best use of the location, where the sectors with lowest land quality, were proposed to serve as parking lots for users of park who would approach the park by car. This is illustrated in map below:





Last picture/figure, illustrates how the contaminated water (from historical pollution) will be treated by the help of the special plants (phytoremediation).





## **Conclusions**

- The entire area linking three municipalities, Fushe Kosova, Obiliq and Prishtina will be redeveloped into a public park. The park will serve the community in the direct vicinity of the project area but parking places will also allow for access to people from further away. The park will have a tranquillity concept with recreation and sports being important points for the usage. No large scale public gatherings (i.e. concerts, festivals etc.) are anticipated for.
- The park will be created in two phase; phase 1 is the redevelopment of the infilled mine galleries area, phase 2 is the redevelopment of the overburden site. For phase 2 of the project agreement with various owners should take place.
- Soil will be re-used within the project area where possible. The large scale off-site transport of soil is not anticipated for. Exception to this is the soil from the burned area at the footslope of the overburden site
- There will be no permanent buildings on top of the overburden or infilled mining areas. The overburden site simply does not have sufficient bearing capacity. Any buildings to be constructed on top of the site should be of lightweight materials (i.e. steel or wood) and should be adjustable over time to compensate for differential settling of the site surface
- Contaminated groundwater originates from the tar lake underneath the current ash dump and is at present not moving. .
- The infilled mines have, in general, all collapsed. Further large scale mine collapses are not anticipated for. Nonetheless smaller scale sinkholes cannot be excluded.
- Illegally dumped wastes consist of municipal solid wastes and construction wastes, no chemical, industrial or hospital wastes has been dumped in the area

