

TECHNICAL SUMMARY – REMEDIATION OF HIGH PRIORITY HOTSPOTS IN WESTERN BALKANS

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COUNTRY : UNATSCR 1244 KOSOVO

SITE: 1 Mitrovica: re-opened lead-zinc mine (Stari Trg)

SITE: 2 Novoberde: re-opened lead-zinc mine Artana)

ENVIRONMENTAL/HUMAN HEALTH PROBLEM

Historic and ongoing mining activities from the Trepca group of mines have contributed to a landscape level of heavy metal and acid mine drainage pollution of the areas in proximity to the Stari Trg and Artana mines with lead in particular having a well documented impact on human health particularly in the vicinity of Mitrovica where the water, soil and food produced in the area have high levels of reported lead. The past and present mining activities are principally impacting on the residence through heavy metals being transported either through the air as dust from tailings or through the water through tailings heaps slumping in the rivers (or close proximity)and through direct drainage from the mines into the rivers.

INTERVENTION & WORKS

The planned intervention for Stari Trg in proximity to Mitrovica is to divert atmospheric water around the current tailings dam through the construction of concrete channels; to stabilize the dry tailings benches with dust suppressants (ie barrier sprays or veneers) to stop heavy metals being blown onto Mitrovica; and to monitor of air and water pollution levels. For Artana works would involve the removal of the smaller tailings stockpile currently forming part of the river bank for reprocessing and recovery of metals and construction of erosion protection of the larger tailings stockpile which is currently slumped into the river and monitoring of the pollution levels in the river.

BASELINE AND EXISTING INFORMATION

There is considerable baseline data available for both Stari Trg and Artana as well as a number studies done on heavy metal loads (in particular lead) in the community and in agricultural products. The information shows that both water and dust contain levels of metals that exceed acceptable human health and environmental thresholds. The studies show considerable elevated lead blood levels in approx 58% of the children in Mitrovica. Further studies on a number of different crops show extremely high levels of lead with some crops (ie peppers) being particularly high. In general the information present points to the lead dust sources (through food and transported surface dusts) contributing to the worst aspects of lead load in the community and the water currently is secondary in importance. Information on arsenic, cadmium and mercury are inconsistently reported but would be expected in each of the mine sources of pollution at concentrations of concern.

SITE VISIT - 11 April 2008

The site visit at Stari Trg showed a mining facility in poor condition and running at a reduced level of production. A lot of surface fines and muds were present at the site and the mine drainage which channeled directly through the site and appeared to be quite clear though with sludge on the bottom of the channel. Information provided shows the mine drainage to be acidic and high in heavy metals. There were visible stockpile of ore concentrate (zinc/lead) though in areas this spills outside the shed were it could be carried as dist or washed into the drains and moved off the site. Particular attention was brought to the pipe work which carries the remnants of the floatation process off the site,

through a tunnel and into the tailings pond. The pipe work and tunnel is apparently in poor condition and tailings sludges fill the tunnel causing a problem for the workforce in clean out the tunnel in poor quality air and lighting. Spilt sludges can then be washed with the mine drainage and is cited as an environmental concern though it would need to be clarified that this is significant to the contamination already present in the mine drainage.

The tailings dam is perched above the town of Mitrovica with the dry tailings benches forming an elevated mound on top of the tailings dam wall. Metal levels are reported at 10,000mg/kg for lead. Severe scouring and channel marks from wind are apparent on the mounded tailings with a clear flight path for dust to be taken onto and around Mitrovica. The dam contained water mostly at the point of entry from the mine and some distance from the tailings wall. The tailings were reddish in colour, clearly oxidized and with apparent high iron content.

The Artana mine is present in a narrow river valley. The area is mostly rural in nature with a few farms and associated buildings. Due to travel conditions only the smaller tailings stockpile was inspected. The stockpile is raised above and forms part of the bank. It is comprised of approx 400,000m³ of material at apparent metal levels are 2% to 3% lead/zinc which is economic for reprocessing. The top surface of the stockpile is oxidized but reverts to a grayish un-oxidised layer. There is a distinct sulfur odour associated with. The river which runs clear upstream of the site becomes discolored as it intersects with the tailings and completely turbid at a point where the mine drainage (bright orange colour/strong sulfur smell) merges with it. Slumping of the stockpile into the river is apparent.

RECOMMENDATIONS

For "Stari Trg" based on the information on human and environmental health impacts it is recommended that a hierarchy of actions be established on where the most immediate gains can be made with the resources that are available based on risk to the community and environment. This may involve a reprioritizing of actions identified within the Programme Document that was based on the Montac Report. More specifically it is recommended that the priority action should be taken for the long term reduction of the sources of lead bearing dusts carried onto the community and that a longer term approach to containing the dusts from the tailings dam is investigated than the use of temporary barrier sprays. If a re-vegetation approach is followed ongoing maintenance of the vegetation will be critical and a responsible body would need to be identified to ensure this was continued.

It is also recommended that a community education program be considered based on the studies conducted on areas and crops which are more likely to represent a risk to the community and education be conducted on minimize the effects of lead intake through surface dusts (ie living with lead approaches). For "Artana" the planned actions in removing the smaller tailings through encouraging the initial reprocessing and constructing erosion structures around the second tailings stockpile. It is recommended that the savings in GHG from utilizing existing tailings compared to obtaining fresh ore is calculated and presented. It is estimated that reprocessing the tailings will deliver an estimated 40 to 60 million euros in ore concentrate (approx 3000 Euro per tonne of concentrate). It is recommended that some of this money is hypothecated into further environmental works including remediation of the tailings sites and management/monitoring of the discharging mine waters/waste management etc.