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The Mountain Institute – Huaraz, Ancash, Peru

### **Report #3**

Since the past report, much progress has been made with the Bioremediation analysis in Canrey Chico. After speaking at length with Professors of Environmental Engineering at the local University (Universidad Nacional Antunez San Mayolo), I was able to gain a much better appreciation of the technical side of the project in addition to various recommendations of how to go about the first steps towards implementation. I discussed at length with Prof. Julio Palomino how bioremediation projects are set up and how one goes about designing a pilot plot - the first step of the project. With the Professors guidance I have begun the process of:

- Evaluating native plant species that can extract the most harmful metals from the Rio Negro's water. Using native species is crucial as the community of Canrey Chico lies on the border of a national park and the bioremediation project cannot run the risk of introducing invasive species to the environment.

- Analyzing the impact of each of the 6 metal contaminants in the Rio Negro on human health and crop health. This analysis will help the plant selection process by prioritizing which metals to remove from the water. While the full scale project will seek to remove multiple metals, it is unlikely that the complete system can remove every single contaminant - therefore the effects of each contaminant must be analyzed to design the system with greatest impact.

- Analyzing data from each of the Rio Negro's tributaries to determine where best to place the pilot plot

In the coming weeks I will also be interviewing various community members in Canrey Chico to get personal testimony regarding how the increasingly contaminated water of the Rio Negro has affected the personal health of members of the community and how it has affected health of crops and animals. I also will be meeting with Fidel Rodriguez - the technical secretary of the Three Watersheds Commonwealth - to discuss potential funding sources for the project. With a draft of the bioremediation report given to TMI Director Jorge Recharte on the 25th of September, I will use my final 3 weeks in Huaraz to fill in missing gaps and polish the report, completing it by the 15th of October.

My other project involving the Sewage Treatment Plant in the community of Huasta continues to come together as I piece together a grant proposal to get money for the town to repair the plant. I continue to work in conjunction with Engineers Without Borders in the US and keep them up to date on the projects progress - as they will be involved in the future with the community of Huasta on this and other projects.

I look forward to giving everyone at JJCF my final report on my work in Peru in October!

Sincerely,

Neil Borland