

# Lead and Zinc Water Poisoning Pipelines

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Lead and zinc contaminating pipelines have been a problem for decades ever since water systems and sewages have been invented. Of course, over the years, scientists have used sterile cleaning solutions to keep the pipelines sanitized but bacteria just seem to always find a way back to live and replicate. During the 1960's, scientists and plumbers would coat the pipes with the element zinc which enhanced the lifespan of bacteria; however, over time, the pipes would corrode and eventually build rust that creates lead stores. These lead stores have caused human sickness such as growth delay, learning disabilities, anemia and more. To understand this problem and how this issue is being taken care of, an interview was conducted with Dr. Garry Marley who is a microbiology professor at Oklahoma State University. Dr. Marley elaborated on the solution to this issue. "Wentz project. Old lead mines in Bartlesville Oklahoma. Mines were super contaminated with bacteria. Students took soil samples from the downhill stream and found a lot of lead and zinc in the pipelines of Pitcher, Oklahoma." The student he was referencing, in particular, is Jessica Cornell, a graduate student in the works of acquiring her Ph.D. According to Dr. Marley, she works at a super fund site called Accurate Chemicals that is linked to the federal government for bioinformatics and bioremediation. Samples are brought back by graduate students to be sampled and then a DNA isolation is performed which is sequenced through bioinformatics to detect the type of bacteria found in the pipes. Accurate Chemicals places a high standard for processing sewage that could identify harmful and beneficial bacteria and/or any other organism that thrives in contaminated areas. Other areas of bioinformatics have highlighted on what they intend to do to keep the pipelines clean and saline such as, "...creation of large data warehouses, bioinformatics algorithms to analyze 'big data' that identify novel drug targets and/or biomarkers, programs to assess the tractability of targets, and prediction of repositioning opportunities that use licensed drugs to treat additional indications"(Wooler). Their mission is to provide services to the public by using purification of water streams and analyzing bacteria for future enhancement. In other words, keeping water more clean and finding ways to prevent future contamination. Bioinformatics is becoming a trendy practice in the world of modern medicine and genetics. Bacteria is the leading cause of this research and development. Due to advances in modern technology such as bioinformatics and bioremediation, what was once thought to be a harmful organism that could cause disease and sickness, has been demonstrated to bring benefits to human health. If you are looking to find a career with Accurate Chemicals or are in need of their services, you can always find their website by typing in their title. They have numerous locations in Oklahoma, Texas, and Kansas. Headquarters is located at 505 s lowry street in Stillwater, Oklahoma.

## References

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