

NEW MEXICO TECH OFFERS

Online-Distance Education MSc-PhD COURSE

HYDROGEOLOGY AND GEOCHEMISTRY OF TAILINGS AND WASTE ROCKS GEOC-572, ME 589-2 FALL 2015

Ore deposits, especially mined and processed, are a potential environmental hazard. Exposure of fresh rock surfaces during mining, as well as the produced crushed and milled waste, will be subject to weathering processes, causing large-scale environmental damage if not sufficiently managed. Sulfide-bearing mineralization, in particular, is readily oxidized at surface, and has the potential to produce acid/neutral rock drainage (A/NRD), as well as release of heavy metals. Significant contamination of surface and groundwater may readily result from these two processes. In addition to the contamination threat, there is also a geotechnical threat to the environment; tailings dams, waste rock piles, and spent leach ore may fail if poorly designed, mismanaged or subject to physical/geochemical weathering.

Goals: The potential environmental threat and appropriate action from tailings and waste rocks can only be assessed properly through a thorough understanding of the hydrogeological and geochemical processes within the waste material. The course will, therefore provide students with the an advanced knowledge required to evaluate the potential geochemical hazard from tailings and waste rock material.

Issues to be covered:

- Introduction to unsaturated hydrology
- Introduction tailings and waste rock
- Macro, Matrix, Micro flow effect on water quality
- Kinematic wave theory
- Metal recycling in tailings
- Drain-down issues of leach piles
- Reclamation/Remediation issues

Teacher: Drs. Ingar Walder, Assoc. Prof. Geochemistry and Jan Hendrickx, Prof. Hydrology

Location: NMTech, Room Cramer 123 or Distance Education interactive web-class

Time: Monday and Wednesday 15.15-16.30

First lecture August 24
Last Lecture Oct. 28

Contact : Ingar Walder
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Credits: 2 crt.

Cost: distance education cost see details <http://distance.nmt.edu/tuition-and-fees.html>

Registration: registrar@admin.nmt.edu / See also registration help file



