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The on-site sulfuric acid processing plant proposed at Copper World poses significant dangers, both from its direct emissions and the potential for accidents and long-term environmental damage. These risks include air pollution, water contamination, chronic health problems for nearby residents, and the degradation of ecosystems. Without strict regulatory oversight and fail-safe measures, the plant could become a major source of toxic pollution, affecting southern Arizona for generations. The combination of industrial-scale sulfuric acid production and a massive mining operation makes this a particularly dangerous project.

The production, handling, and storage of sulfuric acid involve serious dangers:

1. Air Pollution

The production of sulfuric acid can release hazardous air pollutants, including:

-Sulfur dioxide (SO₂): This gas is a significant contributor to air pollution. When released into the atmosphere, it can form fine particulate matter and lead to the formation of acid rain, which harms ecosystems, soils, and water sources.

-Particulate matter: During processing, fine particles can be released, which pose risks to human respiratory health.

Without stringent emission controls and continuous monitoring, the sulfuric acid plant could emit thousands of tons of these pollutants annually. Exposure to sulfur dioxide is particularly dangerous, especially for people with asthma, young children, and the elderly, as it can irritate the respiratory system and cause severe health problems.

2. Water Contamination

There is a significant risk of water contamination from sulfuric acid production and storage. Accidental leaks or spills from the plant or from storage tanks could result in the acid seeping into the ground and contaminating groundwater sources. This could have long-lasting effects, as sulfuric acid can alter the pH of water, making it acidic and harmful to aquatic life, soil quality, and vegetation.

Additionally, acidic runoff from mining operations could lead to the leaching of heavy metals like lead, arsenic, and mercury into water bodies, contaminating drinking water supplies and local ecosystems.

3. Health Risks

Handling sulfuric acid poses direct health hazards to workers and nearby communities. The dangers include:

-Skin and eye burns: Sulfuric acid is highly corrosive. Direct contact with the skin or eyes can cause severe burns, and inhaling sulfuric acid mists can lead to respiratory damage.

-Chronic respiratory conditions: Long-term exposure to low levels of sulfuric acid in the air can result in chronic respiratory issues, particularly asthma and bronchitis. Communities near the mine could suffer long-term health consequences from prolonged exposure to sulfuric acid emissions.

4. Risk of Accidents

The on-site sulfuric acid plant introduces the risk of industrial accidents, including chemical spills, tank failures, and gas releases. If safety protocols fail, a large spill or release could have catastrophic consequences, such as:

- Evacuations of nearby areas due to the release of harmful chemicals into the air.
- Soil and water contamination that could take years or decades to remediate.
- Fires or explosions in cases where sulfuric acid comes into contact with other chemicals or combustible materials.

5. Acid Mine Drainage

Sulfuric acid is a major contributor to acid mine drainage (AMD), a phenomenon where mining operations create conditions for sulfur-bearing minerals to oxidize and produce acidic runoff. This acidic runoff can persist long after the mining operation ends, contaminating nearby water sources for decades or even centuries. It poses a significant risk to the health of entire watersheds, harming aquatic life and reducing water quality for human use.

6. Impact on Local Ecosystems

The Santa Rita Mountains, where the Copper World mine is located, are an ecologically sensitive area. Emissions and leaks from the sulfuric acid plant could harm the biodiversity of the region. Acid rain formed by sulfur dioxide emissions could damage plant life, disrupt food chains, and harm endangered species that rely on the region's unique habitats.

7. Cumulative Environmental Impact

The sulfuric acid plant is only one component of a much larger mining operation. The cumulative effects of the mine's activities, including ore processing, blasting, and transportation, combined with sulfuric acid production, could create widespread environmental degradation. When sulfuric acid emissions mix with other pollutants from the mine, it could exacerbate the overall impact on air quality, water safety, and public health.