**Scientific Paper**

**Biolixiviación en la industria minera**

**Bioleaching in the mining industry**

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**Resumen**

La biolixiviación es una tecnología que disuelve los metales en un medio acuoso, por medio de bacterias (thiobacilus ferooxidans) que liberan cobre en mayor cantidad y pureza que con los métodos convencionales. Estas bacterias o microorganismos que se llaman wenelen se alimentan principalmente de hierro y azufre. Los sulfuros de baja ley eran considerados minera inerte y por lo tanto estéril, es por esto que la bio minería es considerada una revolución dentro de la industria. en las cercanías de Calama opera la planta industrial de bio masa Codelco la cual es una de las principales industria que usan la biolixiviación para conseguir cobre de alta pureza y en gran cantidad. La lixiviación con microorganismos utiliza menos agua que la flotación y no produce relaves (Desechos tóxicos), por lo que sus hallazgos traerían ventajas ambientales. **(10)**

**Palabras claves:** biolixiviación, bacterias, microorganismos, wenelen, revolución, lixiviación. **(6)**

**Abstract**

Bioleaching is a technology that dissolves metals in an aqueous medium, by means of bacteria (thiobacilus ferooxidans) that release copper in greater quantity and purity than with conventional methods. These bacteria or microorganisms called wenelen feed mainly on iron and sulphur. The low grade sulfides were considered inert and therefore sterile mining, which is why bio-mining is considered a revolution within the industry. Near Calama operates the industrial bio-mass plant Codelco which is one of the main industries that use bio-leaching to obtain high purity copper in large quantities. Leaching with microorganisms uses less water than flotation and does not produce tailings (toxic waste), so their findings would bring environmental advantages. **(9)**

**Keywords:** bioleaching, bacteria, microorganisms, wenelen, revolution, leaches. **(6)**

**Body structure-------Development/Desarollo** (English)

* **Introduction**

Bioleaching is a technology that dissolves metals in an aqueous medium, through bacteria (thiobacilus ferooxidans) that release copper in greater quantity and purity than with conventional methods. These bacteria or microorganisms that called wenelen feed mainly on arsenic and sulphur**. (4)**

* **Problem:**

However, this process is limited by the solubilization (which can be dissolved) of the copper contained in the ore, since only when they are oxidized resources can hydrometallurgy be used (a set of techniques to extract the metals contained in the ores and transform them), but when the ore is a copper sulfide, bacteria are needed, which is known as bioleaching. Bioleaching, today, is successfully used for secondary copper ores, but when the copper is as chalcopyrite, that is, as primary copper sulfides, there is no technology capable of bioleaching these minerals, which are the most abundant species. **(9)**

* **Methodology:**

First what I did to arrive at this information by checking different websites verifying the information, then on each website by underlining or writing keywords, titles, subtitles, names and the bioleaching process of the mining industry. then matching the keywords, titles, subtitles, names and the bioleaching process of the mining industry, then at the end of this whole process reading each of the sites to arrive at a final scientific article, then making a mind map where I explain each of the things that the rubric and structure suggested, checking until I started creating the word to make the scientific article**. (9)**

* **Solution**

The successful results in bioleaching tests made by BioSigma S.A., performed with 18 samples of sulphide minerals using microorganisms, increased the optimism in Codelco. This goes through electrowinning, this final stage of oxidized copper aims to obtain copper cathodes of 99.99% purity through the use of electrical energy**. (5)**

**References/referencia:**

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