

## Opinion No. 68-05

January 11, 1968

**BY:** OPINION OF BOSTON E. WITT, Attorney General

**TO:** Honorable Robert D. Jordan State Representative P. O. Box 104 Albuquerque, New Mexico

### QUESTIONS

#### FACTS

In the southeastern portion of New Mexico, two types of potash ore deposits are mined. One of these deposits is KCl and NaCl in a combination of the crystalline minerals sylvite and halite; this ore is called sylvinite. The other ore is  $K_2SO_4 \cdot 2MgSO_4$  and NaCl and is called langbeinite. Southeastern New Mexico is one of the few areas of the world where langbeinite is found.

The principal use of potash is for fertilizer and the most widely used product is muriate of potash derived from the sylvinite ore. However, in some areas the chemical content of the soil is such that the sylvinite product cannot be used because of the chloride content. The refined langbeinite is used primarily in certain areas for its low chloride and high magnesium content. However in areas where a higher potassium content is derived, with the same low chloride, and magnesium is not necessary, there is a need for potassium sulphate. An additional benefit, in the case of alkaline soils, is the available sulphur of potassium sulphate.

The process of combining muriate and langbeinite to produce potassium sulphate was developed due to a need for the product and because the mineral does not occur naturally.

The sylvinite ore, after being mined and brought to the surface, is crushed, screened ground, deslimed, separated, dried and sized. It can be sold at a reduced price after the first crushing and screening process. At this point it is a physical mixture of KCl and NaCl known as manure salts. In the additional process the NaCl is removed and the muriate product is nearly pure KCl. The crystalline structure of the KCl remains **unchanged** from the structure of the sylvinite as it is found at the point of mining. The impurities, however, including the NaCl, have been removed.

The langbeinite ore is also mined, brought to the surface, crushed, leached dried, screened, and sized, at which point it is saleable. The crystalline structure of the saleable product remains **unchanged** from that found in the ore at the point of mining, although the impurities are removed, including the NaCl.

The companies concede for the purpose of this opinion that the process, to this step, is within the definition of "mineral property" of our statutes which provide for assessment of such property by the State Tax Commission, including improvements, equipment, materials, supplies, transportation and personal property used in connection therewith.

At this point, the two companies having deposits of sylvinite and langbeinite ores commence a unique operation which they term their "chemical process." This process requires muriate of potash and washed langbeinite as raw materials. By means of complicated and delicate time and temperature controls a base exchange and recrystallization takes place. This results in the combination of potassium and sulphate and the elimination of the magnesium chloride. In this process a new crystalline structure is obtained, which is termed an "artificial crystal" by **Dana's Textbook of Mineralogy** (4th Ed.), p. 747. This crystalline structure does not occur naturally and is not the same crystalline structure that is found in either the sylvinite ore or the langbeinite ore. A third company obtains the same product in another way by shipping the muriate to a plant in Texas, where it is combined with sulphuric acid in order to obtain the base exchange and artificial crystalline structure.

The companies concerned contend that the process of this base exchange and creation of the artificial crystalline structure does not come within the definition of "mineral property" contained in the New Mexico statutes. It is their contention that this portion of their plant equipment and product is analogous to manufacturing and should be treated for ad valorem tax purposes the same as any other such operation. They further support this argument on the basis that, for income tax purposes, the Internal Revenue Service of the U.S. Treasury and the New Mexico Bureau of Revenue treat this process as a post-mining activity or manufacturing operation, much the same as the alloying of brass or bronze.

Section 72-6-7, N.M.S.A., 1953 Compilation, provides that mineral property as therein defined is returned to and valued by the State Tax Commission. This Section, insofar as pertinent reads:

Mineral property -- Valuation. -- 1. "Mineral property" as used in this act shall mean and include all mineral property in this state, any interest therein, and any products thereof, and all improvements, equipment, materials, supplies, and personal property held or used in connection therewith, and the surface value of all mineral lands for grazing, timber, agricultural or other purposes when held in the same ownership as the mineral rights therein.

2. Mineral property, any interest therein, and any products thereof for the purposes of taxation, shall be divided into the three following classes:

Class One: Mineral lands held in fee in private ownership and mineral rights and interests therein.

Class Two: The severed mineral products from mineral lands held by possessory title under the laws of the United States.

Class Three: The severed mineral products from leasehold and contract mineral rights in lands, the fee of which is in the United States or the state of New Mexico.

3. Mineral properties falling in Class One shall be subclassified into either productive or nonproductive.

Productive properties shall be such as are mined or operated in good faith for the mineral values therein, with a reasonable degree of continuity during the year for which the return, hereinafter required, is made, and to an extent in keeping with the market demand and conditions affecting the extraction and disposition of the product.

Nonproductive properties shall be such as are known to contain minerals in commercially workable quantities, of such character as add present value to the land in addition to its value for other purposes, and are not operated so as to fall in the class of productive properties as above defined. \* \* \*

In addition thereto, every owner or operator of any productive mineral property, and every owner or operator of any mineral property falling in classes Two and Three shall, between the first day of January and the first day of February in each year, make and forward to the commission at its office in Santa Fe, New Mexico, a sworn return or statement showing, in such form and detail as the commission shall prescribe the total quantities and kinds of ores, metals, coal, coke, petroleum, natural gas, and other valuable minerals or metals produced and sold during, and on hand at the end of, the next preceding calendar year, together with the name and post-office address of the owner and operator, and such information as to the description, location and area of such mineral property and the cost of production, value and amount realized from such output, and such other facts as may be required by the commission. Every person engaged in mining or operating any such property shall keep and preserve at such mine, mineral property, or at the principal office of such person in this state, accurate books and accounts showing in such detail as may be prescribed by the commission, all facts relating to the quantities and kinds of minerals and metals produced, the cost of production, milling, reduction, treatment, transportation and sale thereof, the quantities sold, the amount realized therefrom and the quantities and value of such mineral and metal produced and not disposed of.

6. From such returns and statements, and such other information as may be available, the commission shall ascertain and determine the market value of the average annual output of such productive mineral property, including any bonus or subsidy payments, less the actual cost of producing and bringing the output to the surface and of milling, treating, reducing, transporting and selling the same, over the period of five (5) years (or so much of such period as the property has been in operation) next preceding the year in which such return is required to be made. Provided, however, that any person may elect to have his output valuation computed on an annual basis instead of on a five-year

average basis. If such election is exercised, such person may not change from the one-year basis except with the approval of the commission.

But there shall not be included as part of such cost any amounts paid for salaries of any persons not actually engaged in the operation of such property or the milling, treatment, reduction, transportation, or selling such output, or in the immediate management or superintendence of such operations; nor shall there be included as part of such cost any amounts paid for improvements or the purchase of machinery, equipment, appliances, or for construction of mills, reduction works, transportation facilities or other buildings or structures. \* \* \*

8. For the purpose of the exercise of the option hereinafter provided for, as to the method of determining the ad valorem value of productive properties, such properties are hereby divided into the following two classes:

1. Gas and oil wells,
2. All other properties.

\* \* \*

The commission shall, between the date when this act takes effect and the third Monday in February, 1922, cause an appraisal of the productive mineral properties falling within class 2 of this subsection, for the purpose of comparison with the result of using the output method mentioned in subsection 10 hereof. The data facts, and figures gathered by the commission in making the above appraisal shall be a public record open to inspection at all reasonable times.

9. The commission may, in any particular year, determine the ad valorem value of the mineral in all productive mineral properties falling in any one of two classes enumerated in subsection 2 hereof, with the respective allocated reserves, by appraisal thereof. In such case the commission shall use all factors and elements which reasonably enter in and are necessary to determine such value, and the commission shall make specific findings of facts in writing, setting out in detail the factors, elements and method of calculation used in determining the value of each specific productive mineral property. Such findings shall be preserved in the official records of the commission and certified copies thereof shall be furnished to the taxpayer on request.

10. The commission may, in any particular year, determine such average annual output value, being the market value of such average annual output, including any bonus or subsidy payments, less the deductions provided for in subsection 6 hereof, to be the ad valorem value of the mineral in all productive mineral properties and the respective reserves allocated thereto, falling in any one of the two classes enumerated in subsection 8 hereof for the purpose of taxation for such year.

11. The commission shall determine the ad valorem value of mineral in nonproductive mineral property by appraisal thereof. In determining the value of such properties the commission shall take into consideration the distance from railroad, the condition for extracting and disposing of the minerals and the probable length of time before transportation facilities and market demand will warrant production and sale thereof.

12. The commission shall, in each year, determine the average annual output value, being the market value of such average annual output, including any bonus or subsidy payments, less the deductions provided for in subsection 6 hereof, to be the taxable value of such year of all properties falling in classes (2) and (3) enumerated in subsection (2) hereof. In calculating the average annual output value of the severed product falling in class 3, the commission shall first deduct from the gross product any royalties belonging to the state or United States. \* \* \*

Are the K[2]SO[4] products of the "chemical plant" and the improvements, equipment, materials, supplies and personal property held or used in connection therewith considered as "mineral property" as defined by the foregoing statutes so as to be returned to and valued by the New Mexico State Tax Commission or are they to be returned to and valued by the local county assessor in the same manner as non-mineral property?

## CONCLUSION

The local assessor, but see analysis.

## OPINION

### {\*10} ANALYSIS

The statute concerning taxation of mineral property permits {\*11} the taxpayer to deduct all costs of mining in arriving at his valuation for such purpose. Subsection 6 sets forth items to be considered as such cost and names milling, treating and reducing as being a part of the cost of mining. There being no statutory definition of "mining property", it follows that if the process described is milling, treating or reducing, then the finished product is mineral property within the meaning of the section as is the equipment and improvements used in the process.

Milling in **Webster's New International Dictionary** (2nd Ed.) is defined as follows:

\* \* \* The act or employment of grinding or passing through a mill, or cloth, metal sugar, soap, etc. \* \* \*

Treating is therein defined as follows:

\* \* \* To subject to some action, as of a chemical reagent; as to treat a substance with sulfuric acid; often, to subject a natural or manufactured article to some process to

improve its appearance, taste, usefulness, etc., to process; as to treat wigs by washing; port is a wine that is treated.

To bring or put a person or thing into a specific or implied condition by treating.

Reducing is therein defined as follows:

\* \* \* to bring a certain state or condition by grinding, pounding, kneading, rubbing, etc; as to reduce a substance to powder; to reduce fruit or wood to pulp.

\* \* \* Chem. a also **metal**. To bring to the metallic state by removal of nonmetallic elements; as metals are **reduced** from their ores. To deoxidize; as, to **reduce** anthraquinon to anthracene. To combine with, or subject to the action of hydrogen; as to **reduce** an aldehyde to an alcohol. By extension, to change (a compound) by decreasing the proportion of the electronegative part, or to change (an element) from a higher to a lower positive valence; to supply (an atom or ion) with electrons; as to **reduce** ferric to ferrous chloride; to reduce ferric to ferrous iron. Cf oxidize.

Based on the facts presented we can state that the process does not come within the definition of milling.

A **Textbook on Mineralogy**, Dana (Rev. Ed.) Page 1, states:

1. Structure. -- Structure in Inorganic nature is a result of mathematical symmetry in the action of cohesive attraction. The forms produced are regular solids called crystals; whence morphology is, in the Inorganic kingdom, called crystallogogy. It is the science of structure in this kingdom of nature.

It is stated in **Crystal and Mineral Collection**, William B. Sanborn at page 52 as follows:

A crystal is the ideal mineral form, crystallization is the physical and chemical process that produced it and crystallography is the study of both. \* \* \*

Most mineral substances, under ideal natural conditions, will produce a smooth multisided or faced solid form called a crystal. This is done through the process of crystallization as the mineral turns into a solid, from either a gaseous or liquid state. Crystals are produced or may form, from hot gases, hot or cold solutions, or molten silicate melts under the influence of proper pressure and temperature. Crystallization is an interatomic force, and the resulting concrete external {<sup>12</sup>} shape is directly related to the atomic structure of the mineral. **Consequently a crystal is the most important, definitive, and characteristic physical aspect of a mineral. Minerals** seldom crystallize exactly alike, but any given mineral species adheres strictly to its own laws of crystallization irrespective of where it may be found. \* \* \* (Emphasis added)

It is stated in **Dana's Manual of Mineralogy**, (17th Ed.) at page 172 et seq. that a mineral is identifiable only by considering **both its chemical composition and its structural framework**. For example there are minerals such as calcite and aragonite which share the same chemical composition but vary in nearly every other aspect.

Under the facts submitted, the  $K_2SO_4$  product being considered varies from materials found in nature, both in chemical composition and in structure. The structure or crystal, is an artificial one created in the described processes.

The authorities cited are considered to be the leading authorities in the field and, insofar as we are here concerned, are uncontradicted. Applying these statements to the definition of "reduction", the process set forth does not fall within such definition. Although the minerals are being subjected to chemical action they are not being oxidized or combined with hydrogen. Neither is the process one of removal of a non-metallic substance from a metallic substance.

The process does not fall within the stated definition of "treatment" and it is a mineral product since basic minerals are treated with a chemical reagent to improve their usefulness. This, however, does not answer the question of whether the processes described result in "mineral property" within the statutory meaning or constitute an industrial process without the statute.

Stating that every mineral product which resulted from treatment within the dictionary definition comes under the statute in question would be to state that all products of smelting, fabricating and manufacturing of metallic substances are within the purview of the statute. This would include, for example, making copper tubing; making steel; manufacturing automobiles; and a host of other examples. No legislative intent to include such activities appears in the statute. The problem is to determine where "mineral property" within the legislative intent ends and industrial processes and products, outside such legislative intent, commences.

It has been urged that this point is determined by the point of the first bona fide sale, with all processes thereafter being excluded from the definition of "mineral property." There are authorities so holding, but they appear to be based on different statutes or on different considerations. Such a basis for determination of this point does not seem to bear any real relationship to the problem presented and could be considered as arbitrary and capricious.

An examination of comparable legislation is of little aid. In Alaska, mining is defined as including the "ordinary treatment process normally applied by mine owners or operators." In the case of potash such ordinary treatment is enumerated as follows: crushing; grinding and beneficiation by concentration (gravity flotation, amalgamation, or magnetic, cyanidation, leaching, crystallization, precipitation, but excluding electrolytic deposition, roasting, thermal or electric smelting or refining), or by substantially equivalent processes or combination of processes used in the **separation or extraction** of a product from the ore. Sec. 43.65.010 Alaska Statutes. It is obvious that

the process here being considered is not an ordinary {<sup>13</sup>} treatment process" under the Alaskan definition.

Nevada statutes, Section 362.100 et seq., specifically include smelting facilities in the definition of property considered as mining property under such statute and is much broader than our statute. The same is true as to Washington, 59-5-3, Washington Statutes.

It is our conclusion that the definition of mineral property under our tax statutes in the absence of contrary legislative intent disclosed, must bear a reasonable relationship to the mining operation. Milling, reduction and ordinary treatment does bear such a relationship. However, the treatment with which we are here concerned is not such treatment as is ordinarily or normally applied to the ore by mine owners or operators and does not fall within Section 72-6-7, supra. In substance this engrafts the Alaskan definition upon our statute, but this appears the most feasible and practical method of determining when a product or process ceases to be a mining process or property and becomes instead an industrial product or process. Since it is a process that is beyond "milling," "reduction," "mining" and "ordinary treatment" by mine owners or operators it is beyond the definition of "mining property" as it is contained in the statute in question.

It is again noted that the property and products up to the point where the actual chemical treatment described takes place, are "mineral properties" and are returnable and assessed as such. After such point, the equipment and products are returned locally and assessed as required by the reappraisal program for ad valorem purposes.

Ample opportunity has been afforded to the Tax Commission and to the companies involved to present information as to the reasonableness of the regulations placing a broader interpretation on the statute in question. All have responded and furnished a considerable volume of material, all of which has been considered in arriving at the conclusion herein expressed that the regulation of the Tax Commission classifying the described operation and related property as mining or mining property under the said statute is invalid.

By: James V. Noble

Assistant Attorney General