



North Carolina Department of Revenue

Roy Cooper
Governor

Ronald G. Penny
Secretary

January 17, 2018

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Re: Private Letter Ruling

Taxpayer: [REDACTED]

Taxpayer's FEIN: [REDACTED]

Dear [REDACTED]:

The Department has completed its review of your request for a written determination on behalf of your client, [REDACTED] ("Taxpayer"). In making this written determination, the Department has considered the facts presented in your request.

This private letter ruling is a written determination issued under N.C. Gen. Stat. § 105-264.2 and applies the tax law to a specific set of existing facts furnished by you on behalf of Taxpayer. This written determination is applicable only to the taxpayer addressed herein and as such has no precedential value except to the taxpayer to whom the determination is issued on behalf of the Department.

Overview and Relevant Facts

You advise that Taxpayer "is a [REDACTED] company located in [REDACTED], where it maintains all its operations. [Taxpayer] is primarily engaged in life science research and developmental activities at its [REDACTED] location and is classified under NAICS 54171." You state that "[Taxpayer] is the [REDACTED] of the [REDACTED] that can precisely modify the [REDACTED] of any living cell or organism. [REDACTED] manipulates the function of a living cell or organism by directly modifying the chromosomal [REDACTED] sequence. [REDACTED] requires a precise tool to perform gene modification at the specified location. The backbone of the [REDACTED] technology is the [REDACTED] — a fully synthetic enzyme — which is engineered into a custom gene editing tool." Genes are edited by Taxpayer "in both human and plant applications in an effort to treat cancers, cure genetic diseases and enable the development of safer and more productive food products." This technology "can be used to delete, insert or edit [REDACTED]"

In your letter you provide that "cancer immunotherapy is a form of cancer treatment that harnesses and redirects the immune system to ward off cancer. Immunotherapies take advantage of the fact that there are often tumor-associated antigens (TAA) on cancer cells that

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mark the cells for detection and destruction by the immune system. One approach to cancer immunotherapy is adoptive T-cell therapy, where T-cells are removed from a patient, genetically re-engineered to incorporate a receptor, such as a chimeric antigen receptor (CAR) or a recombinant T-cell receptor (rTCR), that allows the cells to recognize TAA on cancer cells. The reprogrammed cells are multiplied and then returned to the patient to target the tumor. [Taxpayer] [REDACTED] technology enables the production of CAR T-cells derived from [REDACTED]. This approach aims to overcome the manufacturing-related limitations with existing T-cell therapies, greatly expanding the number of patients that can be treated with adoptive T-cell therapies and enable a broader range of cancers to be targeted.”

You advise that “[i]n the plant sciences arena, [Taxpayer] is focused on developing food, fuel and feed-based products. A rapidly rising global population, climate change and shrinking arable landmass are creating increasing demands on the world's food supply. . . . By [REDACTED], [Taxpayer] aims to advance food products and recover genes lost through breeding in the existing food stock. Generating these products in a safe, non-GMO and non-breeding environment will greatly expand choices for sustainable produce and help ensure an adequate global food supply.”

You advise in your letter that “[e]very [REDACTED] gene editing tool is tested extensively in cells prior to its use. As part of the testing process, cells are grown to confirm whether the edit was successfully performed. [Taxpayer] also must standardize the process for production. Ultimately, [Taxpayer]’s research and development activities result in the creation of new [REDACTED] strands, new cells and new organisms.”

Your request provides the function and usage of various equipment, which your letter advises is capitalized by Taxpayer under the Internal Revenue Code. The various pieces or categories of equipment and key information regarding the use of such include the following:

- [REDACTED] Equipment - “The [REDACTED] technology . . . allows [Taxpayer] to transport the [REDACTED] directly into the [REDACTED]. The equipment that [Taxpayer] uses for this purpose includes the [REDACTED], the [REDACTED] and the [REDACTED].”
- Plant [REDACTED] Guns - Taxpayer uses [REDACTED] Particle Delivery System as a “method to introduce [REDACTED] material into the cell, specifically a plant cell.”
- Incubators & Shakers - “Once a [REDACTED] is edited, it is necessary to [REDACTED]. [Taxpayer] uses a variety of incubators for this purpose, including the [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED], [REDACTED].”
- Growth Chambers – “[Taxpayer] uses growth chambers to provide optimal growth conditions, including the [REDACTED] Growth Chamber.”

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- Laminar Flow Hoods - Used “to maintain a sterile environment and to prevent the contamination of the products under development. . . . The flow hoods provide an aseptic work environment. The equipment that [Taxpayer] uses for this purpose includes the [REDACTED]”
- Biosafety Cabinets - Cabinets “[n]ecessary to protect employees, the product and the environment. Biosafety cabinets are used when [Taxpayer] employees handle materials that may be contaminated. The cabinets filter the air through a HEPA filter to create a safe, clean and controlled environment. The equipment that [Taxpayer] uses for this purpose includes the [REDACTED]”
- Measurement and Quality Control Equipment - Taxpayer utilizes a variety of equipment to verify the results of Taxpayer’s research and development processes and for quality control purposes. Your letter states that “[o]ne method to verify the success of a particular process is to measure [REDACTED]. The [REDACTED] equipment allows [Taxpayer] to investigate cellular pathways which indicate [REDACTED] . . . this equipment allows [Taxpayer] to learn how the [REDACTED] [REDACTED] are affecting the cell. The equipment [Taxpayer] uses for this purpose includes the [REDACTED] and [REDACTED] [REDACTED] [REDACTED] Detection Cartridge. The [REDACTED] [REDACTED] Kit is used to quantify [REDACTED]”
- Special Equipment - In instances where “the sample that must be analyzed is quite small or the [REDACTED] changes are difficult to perceive. . . . [Taxpayer] uses special equipment to identify and quantify the [REDACTED] and to quantify [REDACTED] changes. The equipment that [Taxpayer] uses for these purposes includes the [REDACTED] Spectrophotometer and the [REDACTED]”

“Another method [Taxpayer] uses to understand the effect of a [REDACTED] [REDACTED] is to [REDACTED] the [REDACTED] [REDACTED] sequencing can be described as “decoding- genetic material. The parts of the [REDACTED] that affect an outcome are often intermingled with other genetic material that has no effect on the intended outcome. To understand the genetic [REDACTED] and the effect the [REDACTED] [REDACTED] have had, [Taxpayer] uses specialized equipment to [REDACTED] the [REDACTED] and ‘read’ the genetic text. Specifically, [Taxpayer] uses the [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] the [REDACTED] to [REDACTED] the [REDACTED]”

“Yet another method to understand how [REDACTED] has affected a cell is to identify and quantify [REDACTED]. A [REDACTED] is a measurable substance in an [REDACTED], [REDACTED]. [REDACTED] can indicate environmental exposure, disease or infection. [Taxpayer] uses three pieces of equipment to identify and measure [REDACTED] in altered [REDACTED] the [REDACTED] [REDACTED] and [REDACTED]”

“Another piece of diagnostic equipment [Taxpayer] uses for quality control purposes is the [REDACTED] imager. . . . the [REDACTED] is used to [REDACTED] and then they are further analyzed with [REDACTED] Software. This process allows a control sample to be readily compared with an [REDACTED] sample, which enables [Taxpayer] to understand the effect a process has had on a piece of [REDACTED]”

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- Reproduction of Material - “Whenever [REDACTED] needs to be reproduced, [Taxpayer] engages in a process called [REDACTED]. It may be necessary for [Taxpayer] to reproduce or [REDACTED] for a variety of reasons, including [REDACTED]. [REDACTED] is integral to [Taxpayer]’s overall processes and is itself a multi-step activity. The equipment that [Taxpayer] uses for this purpose includes an [REDACTED] Thermal Cycler and [REDACTED] Thermal Cycler.”
- Production of Products - “After a specific process has been created, verified and standardized, production of the product on a larger scale can begin. The [REDACTED] is a ‘mini-factory’ that converts source material into a final product using [Taxpayer]’s standardized processes.”
- Other Equipment - “[Taxpayer] uses a variety of other equipment in its research and development activities. . . . at various points in many processes. For example, [Taxpayer] uses a variety of centrifuges, including a [REDACTED] Centrifuge, [REDACTED] Centrifuge, [REDACTED] Centrifuge and a [REDACTED] centrifuge for preparing material.”

“[Taxpayer] also uses a [REDACTED] Ultralow Temperature Freezer to [REDACTED] material, a [REDACTED] Glassware Washer to clean Glassware and an [REDACTED] Water System to produce ultra-clean water for laboratory use. Sterilization is often the first and last step in the production cycle and [Taxpayer] uses a [REDACTED] AutoClave for this purpose.”

“At times, material must be stored and preserved for later use or maintained at a certain temperature while performing processes on it. [Taxpayer] uses a [REDACTED] Refrigerator for storage and preservation. It uses ice from a [REDACTED] to maintain material at certain temperatures while [Taxpayer] employees work on the material.”

“Microscopes are also used throughout the processes. . . . in the plant science area, they are used to [REDACTED] cultures and plants.”

Issue

Taxpayer requests that the Department issue a ruling that purchases of the equipment qualify for the mill machinery privilege tax imposed by N.C. Gen. Stat. § 105-187.51B and therefore are exempt from the sales and use tax imposed by Article 5 of Chapter 105 of the North Carolina General Statutes and the local sales and use taxes authorized by Subchapter VIII of Chapter 105 of the North Carolina General Statutes.

Applicable Statutes and References

N.C. Gen. Stat. § 105-187.51B(a)(2) provides a privilege tax is imposed on “[a] company primarily engaged at the establishment in research and development activities in the physical, engineering, and life sciences included in industry 54171 of NAICS and that purchases equipment or an attachment or repair part for equipment that meets all of the following requirements:

- a. Is capitalized by the company for tax purposes under the Code.

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- b. Is used by the company at the establishment in the research and development of tangible personal property.
- c. Would be considered mill machinery or mill machinery parts or accessories under G.S. 105-187.51 if it were purchased by a manufacturing industry or plant and used in the research and development of tangible personal property manufactured by the industry or plant.”

N.C. Gen. Stat. § 105-187.51B(b) provides “[t]he tax is one percent (1%) of the purchase price of the equipment or other tangible personal property. The maximum tax is eighty dollars (\$80.00) per article.”

N.C. Gen. Stat. § 105-164.3 defines “tangible personal property” as “[p]ersonal property that may be seen, weighed, measured, felt, or touched or is in any other manner perceptible to the senses. The term includes electricity, water, gas, steam, and prewritten computer software.”

Published for the purpose of presenting the administrative interpretation and application of the Act, the Department’s administrative rules and Sales and Use Tax Technical Bulletins are considered “prima facie correct.” The following administrative rule is applicable to the classification of manufacturing activities for the application of the 1% privilege tax rate:

17 NCAC 07D .0102(a) provides, in part, “[f]or the purposes of administering the privilege tax, the following classifications are based on the three principal activities of manufacturers and industrial processors and shall be followed by manufacturers purchasing tangible personal property which is used or consumed in different phases of the operation of an industrial plant:

- (1) Production as a phase of industrial or manufacturing operations shall mean all steps performed in processing and refining rooms, and in other quarters and departments of a plant, where conditioning, treating or other operations are done on ingredient materials as an actual routine on a processing or assembly line turning out a finished product of manufacture. . . . *The term production shall also mean the work of experimentation and research performed on the manufactured products. Purchases by a manufacturing industry or plant of research and development equipment and supplies for quality control or the improvement of its manufactured products or for the development of products which it will manufacture are classified as mill machinery and mill machinery parts and accessories [emphasis added].* Items which are not classified as mill machinery and mill machinery parts and accessories when purchased by manufacturing industries and plants for use in their research and development areas include such items as desks, calculators, personal computers and chairs and are subject to the applicable statutory state and local sales or use tax. Production does not include any activity connected with the movement of raw materials or ingredients into inventory nor does it include distribution as defined in Subparagraph (a)(2) of this Rule. Sales to manufacturing industries and plants of machinery, parts and accessories to such machinery, or other items of tangible personal property which are used in the movement of raw materials or ingredients into inventory or in distribution activities as defined or which are used for other similar purposes are subject to the applicable statutory state and local sales or use tax.

17 NCAC 07D .0201 provides a list of items that when purchased by manufacturing industries and plants for use in their manufacturing process, are considered mill machinery, mill machinery

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parts and accessories within the meaning of Article F of Chapter 105 of the North Carolina General Statutes. The list is not all inclusive. The list of items that are not subject to the tax imposed under Article F as mill machinery, mill machinery parts and accessories pursuant to 17 NCAC 07D .0201 include “storage places for fuels and water, or reserve tanks, bins or other similar items located either inside or outside power rooms or buildings. Storage tanks, bins or other facilities for water, fuel, raw materials or manufactured products are not considered as mill machinery or accessories to such machinery and are therefore subject to the applicable statutory state and local sales or use tax.”

17 NCAC 07D .0202 provides a list of items that “are not considered mill machinery or mill machinery parts and accessories to manufacturing industries and plants and are therefore subject to the applicable statutory state and local sales or use tax.”

Under Article 5 (“Article”) of the North Carolina Revenue Act (“Act”), N.C. Gen. Stat. § 105-164.1 *et. seq.*, Subchapter VIII: Local Government Sales and Use Tax, and Chapter 1096 of the 1967 Session Laws, State, local, and applicable transit sales and use taxes are imposed on a retailer engaged in business in the State on the retailer’s net taxable sales or gross receipts of tangible personal property, certain digital property, and certain services at the percentage rates listed in subdivision N.C. Gen. Stat. § 105-164.4(a). N.C. Gen. Stat. §§ 105-164.3(24), 105-164.3(35), 105-164.3(46), 105-164.4, 105-164.8, 105-467, 105-468, 105-483, 105-498, 105-507.2, 105-509.1, and 105-537.

N.C. Gen. Stat. § 105-164.6(a) provides, in part, that “[a]n excise tax at the applicable rate set in [N.C. Gen. Stat. §] 105-164.4 is imposed on” the purchase price of “[t]angible personal property or digital property purchased inside or outside this State for storage, use, or consumption in this State, . . . [t]angible personal property or digital property leased, or rented inside or outside this State for storage, use, or consumption in this State” or “[s]ervices sourced to this State.” N.C. Gen. Stat. § 105-164.6(b) states “[t]he tax imposed by this section is payable by the person who purchases, leases, or rents tangible personal property or digital property or who purchases a service. N.C. Gen. Stat. §§ 105-164.3(14), 105-164.3(32), 105-164.3(33), 105-164.3(44), 105-164.3(49), and 105-164.6.

N.C. Gen. Stat. §105-164.13(5a) provides an exemption from the sales and use tax imposed by Article 5 of the Act for the sale at retail and the use, storage, or consumption in this State of “[p]roducts that are subject to tax under Article 5F [Certain Machinery and Equipment of the Act].”

Ruling

Based on assertions presented to the Department, the Taxpayer is “[a] company primarily engaged at the establishment in research and development activities in the physical, engineering, and life sciences included in industry 54171 of NAICS” in accordance with N.C. Gen. Stat. § 105-187.51B. Therefore, Taxpayer’s purchases of equipment or an attachment or repair part for equipment that meet all of the following requirements are subject to the one percent (1%) tax rate:

- a. Is capitalized by the company for tax purposes under the Code.
- b. Is used by the company at the establishment in the research and development of tangible personal property.
- c. Would be considered mill machinery or mill machinery parts or accessories under G.S. 105-187.51 if it were purchased by a manufacturing industry or plant and used in the

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research and development [emphasis added] of tangible personal property manufactured by the industry or plant.

The Department does not confirm or deny that each piece or category of equipment included in the request for a private letter ruling meets the capitalization requirement or whether such purchases “[w]ould be considered mill machinery or mill machinery parts or accessories under G.S. 105-187.51 if it were purchased by a manufacturing industry or plant and used in the *research and development* [emphasis added] of tangible personal property manufactured by the industry or plant.” To make a determination as to the taxability of each piece or category of equipment would require a multitude of private letter requests in accordance with the Department’s Written Determination and Letters of General Applicability policy.

The Taxpayer must determine if the use of each piece of equipment or category of equipment is used for research and development activities which in accordance with 17 NCAC 07D .0102 provides, in part, “[t]he term production shall also mean the work of experimentation and research performed on the manufactured products. Purchases by a manufacturing industry or plant of research and development equipment and supplies for quality control or the improvement of its manufactured products or for the development of products which it will manufacture are classified as mill machinery and mill machinery parts and accessories.”

Taxpayer is encouraged to review in detail 17 NCAC 07D .0201 and 17 NCAC 07D .0202 available on the North Carolina Office of Administrative Hearings website to assist with the determination of the tax applicable to specific equipment and categories of equipment used by the Taxpayer. However, it is important that consideration be given as to whether all of the requirements of N.C. Gen. Stat. § 105-187.51B(a)(2) are met.

Purchases by Taxpayer of machinery, parts and accessories to such machinery, or other items of tangible personal property which are not primarily used in research and development activities as herein described are subject to the general 4.75% State, 2.25% [REDACTED] County rate of sales and use tax, and 0.50% transit tax currently in effect.

This ruling is based solely on the facts submitted to the Department of Revenue for consideration of the transactions described. If the facts and circumstances given are not accurate, or if they change, then the taxpayer requesting this ruling may not rely on it. If a taxpayer relies on this letter ruling and the Department discovers, upon examination, that the fact situation of the taxpayer is different in any material aspect from the facts and circumstances given in this letter ruling, the letter ruling will not afford the taxpayer any protection. It should be noted that this letter ruling is not to be cited as precedent and that a change in statute, a regulation, or case law could void this ruling.

Issued on behalf of the Secretary of Revenue
By the Sales and Use Tax Division