

OFFICE OF TAX APPEALS
STATE OF CALIFORNIA

In the Matter of the Appeal of:) OTA Case No. 21068042
D. BERNSTEIN AND)
K. BERNSTEIN)
_____)

OPINION

Representing the Parties:

For Appellants: Russell Garth Garza, Attorney

For Respondent: Pamela W. Bertani, Attorney

Office of Tax Appeals: William J. Stafford, Attorney

A. VASSIGH, Administrative Law Judge: Pursuant to California Revenue and Taxation Code (R&TC) section 19324, D. Bernstein and K. Bernstein (appellants) appeal an action by respondent Franchise Tax Board (FTB) denying appellant’s claim for refund of \$83,097 for the 2007 tax year.¹

Appellants waived their right to an oral hearing; therefore, the matter is being decided based on the written record.

ISSUE

Whether appellants have demonstrated that they are entitled to research credits under Internal Revenue Code (IRC) section 41(d)(1).²

¹ Appellants did not timely appeal FTB’s Notice of Action affirming a proposed assessment for the 2012 tax year. As a result, the Office of Tax Appeals only has jurisdiction in this appeal to review FTB’s action denying appellants’ refund claim for the 2007 tax year.

² With some modifications, California conforms to IRC section 41 pursuant to R&TC section 23609 and section 17052.12.

FACTUAL FINDINGS

General Background

1. D. Bernstein was an engineer and 69 percent shareholder in the engineering firm of Processes Unlimited International, Inc. (Processes Unlimited), a California S corporation.
2. Processes Unlimited filed an amended California Corporation Franchise or Income Tax Return (Form 100X) for the 2007 tax year, reporting total research credits of \$145,895 on California Form 3523, Research Credit, pursuant to IRC section 41, as modified by R&TC sections 23609 and 17052.³ Processes Unlimited reported a refund of \$25,846.

Appellants' Income Tax Return

3. During 2011, appellants filed an amended California Individual Income Tax Return (Form 540X) for the 2007 tax year, claiming pass-through research credits of \$92,639 from Processes Unlimited and a refund of \$83,097.⁴

Audit and Protest Proceedings

4. FTB audited Processes Unlimited's and appellant's amended tax returns and examined the claimed research credits. During the audit of Processes Unlimited, the parties agreed to use the following six sample projects to evaluate whether Processes Unlimited was entitled to the claimed research credits: (1) Station (#2896), (2) Midway-Sunset (#3271), (3) Burun (#3681), (4) Belridge-Filter (#3032), (5) Kuwait 120 MBOPD (#3748), and (6) Belridge-Sour Water (#3938).
5. At conclusion of the audit, FTB determined that Processes Unlimited was not entitled to any of the claimed research credits for the tax year at issue.
6. In response, Processes Unlimited and appellants filed timely protests. After reviewing the matter, FTB denied the claims for refund listed on their respective 2007 amended returns. FTB's denial was based on its determination that Processes Unlimited was not entitled to research credits that it claimed for the tax year at issue.

³ Processes Unlimited's California Form 3523 for the 2007 tax year lists total research credits of \$145,895, which are comprised of research credits of \$128,527 and carryover research credits of \$17,368.

⁴ Although appellants' amended 2007 return lists a total refund amount of \$83,097; only the refund amount related to research credits is at issue on appeal.

Appeal

7. Appellants filed this timely appeal for the 2007 tax year. Processes Unlimited did not file an appeal. A summary of each project is set forth immediately below.⁵

The Station Project (#2896)

8. This project involved designing physical improvements for Chevron's oil cleaning plant (Station 1-09) near Bakersfield, California. Processes Unlimited asserted during the audit and/or protest proceedings (hereinafter, underlying FTB proceedings) that a majority of its efforts went into designing systems to assist with the separation of oil and water. Those efforts included designing wash tanks, heat exchangers, electrical systems, structural supports, piping, and instrumentation.
9. Processes Unlimited asserted during the underlying FTB proceedings that some problems it faced in designing the applicable physical improvements included: (1) determining the best design to heat the oil and water (e.g., an electrical heater, a heat exchanger, steam, etc.), (2) determining the size and number of water/oil tanks, (3) calculating the thermal expansion of pumping due to high fluid temperatures, and (4) using the existing natural terrain to maximize flows due to gravity, and to minimize pumping.
10. In addition, Processes Unlimited asserted that to design the above-listed physical improvements, it had to conduct several simulations using an iterative design process.
11. The project had a start date of August 1, 2005, and an end date of May 29, 2006.⁶
12. A document titled, in part, "Control Narrative" describes the project's wash tank system as follows: "The entire wash tank system is virtually a duplicate of the same system at Cymric 31X Oil Cleaning Plant."

The Midway-Sunset Project (#3271)

13. This project involved designing two water tanks, and associated improvements, for Chevron's Midway-Sunset oilfield near Bakersfield, California.

⁵ Appellants submitted a single credit study for tax years 2006 through 2008. The credit study provides, among other things, a short one-paragraph description of each project.

⁶ As indicated in a footnote above, Processes Unlimited's California Form 3523 for the 2007 tax year lists total research credits of \$145,895, which are comprised of research credits of \$128,527 and carryover research credits of \$17,368.

14. Major facets of this project included an inlet distribution spreader, along with a fixed weir skimmer, to improve performance and reliability of oil/water separation in the project's two tanks. Processes Unlimited indicated during the underlying FTB proceedings that it conducted experimentation to develop the above-listed improvements, which included simulations.
15. Another feature of this project involved designing inlet piping so that oil and water streams would be equally split between both tanks. Processes Unlimited asserted that through an iterative process of experimentation, it was able to develop new inlet piping, which effectively split the flow between the two tanks.
16. In addition to designing inlet piping, Processes Unlimited had to make sure that oil did not come out of the tanks with the water. Processes Unlimited stated that to address the problem, it used an iterative design process to create baffles.
17. An additional facet of this project included the creation of measurement devices to control process parameters, including oil pad thickness and tank level. Processes Unlimited asserted that to address such issues, it conducted research with ultrasonic and capacitance measurement devices.

The Burun Project (#3681)

18. This project involved designing structural improvements for the Burun oilfield in western Turkmenistan.
19. A major feature of this project involved designing a sand removal system to address the sand produced with the oilfield's oil/water mixture.
20. Processes Unlimited asserted during the underlying FTB proceedings that through an iterative modeling process, it determined the usage of a clarifier surge tank (as opposed to using hydro-cyclones) was the optimal method for removing sand from the oil/water mixture.
21. Another aspect of this project included designing a system to remove gas when oil and water are separated. Processes Unlimited asserted that by using an evaluation and modeling process, it determined that a gas boot would be an acceptable solution. Further, Processes Unlimited stated that it conducted modeling calculations to determine the optimum diameter, height, and configuration of the gas boot.

22. An additional facet involved upgrading the oilfield's electrical system, which included designing a new electrical substation. Processes Unlimited asserted that through a process of experimentation, it determined that a new electrical substation was the correct solution to address safety, durability, performance, and reliability. Also, Processes Unlimited stated that the project incorporated vacuum circuit breakers, which Processes Unlimited asserted represented new technology for its personnel. In addition, Processes Unlimited asserted that through a process of experimentation, it discovered the appropriate grounding material to use for the oilfield's electrical grid.
23. Another aspect of this project included upgrading the oilfield's oil dehydration facilities. Processes Unlimited asserted that in designing the dehydration upgrades, it had to experiment with various heating methods, such as a hot oil system and firetube heaters. In addition, Processes Unlimited stated that the oil dehydration facilities included a new reject tank and a new hydrocarbon measuring unit. Also, Processes Unlimited asserted that in designing the upgrades, it performed modeling calculations to determine dimensions of a "knock out drum" (to remove liquids and oil from flare gases).

The Belridge Filter Project (#3032)

24. This project involved designing structural improvements for the Belridge oil/water treatment plant near Bakersfield, California.
25. A major feature of this project included a clarifier tank to remove oil and other insoluble matter from water. Processes Unlimited asserted during the underlying FTB proceedings that in designing the clarifier tank, it considered many configurations, including the use of a tank with a cone bottom and a rake to help remove solids from sedimentation.
26. Another facet of this project involved designing a duplex steel pump casing. Processes Unlimited stated that in designing the pump casing, it had to consider the composition of the fluid that the plant was pumping, maintenance costs, and the lifecycle of the pump.
27. An additional feature of this project included designing a structural foundation with the use of continuous welded rebar. Processes Unlimited described continuous welded rebar as a process wherein a crucible of metal (e.g., aluminum and iron) is ignited, setting off an energetic reaction that melts the metal, which then flows into a void space between the rebar, thereby locking the rebar into place. Processes Unlimited stated that in designing

the project's structural foundation, it performed test welds and considered alternatives, such as using conventional rebar.

28. Another aspect of the project involved designing a disk-stacked centrifuge for the separation of oil and water. Processes Unlimited asserted that the use of a disk-stacked centrifuge in an upstream oilfield application (i.e., upstream from the treatment plant) was a method that had to be researched and tested.

The Kuwait 120 MBOPD Project (#3748)

29. This project involved designing structural improvements for an oil facility in Kuwait.
30. A major facet of this project included designing a pipeline gathering system to transport liquids (oil, etc.) from the commodity's source (e.g., rock formations) to a processing facility. Processes Unlimited asserted during the underlying FTB proceedings that it performed extensive simulation work to determine the proper sizes of pipelines.
31. Another feature of this project involved designing a production facility for the processing of oil and gas. Processes Unlimited asserted that the facility relied upon motive-pressure (not pumps) for the processing of liquids and, therefore, Processes Unlimited had to experiment with various sizes of pipes, as well as various control schemes.
32. An additional facet of this project included designing a water treatment plant. Processes Unlimited stated that unusual elements of the water treatment plant included: (1) minimizing the use of tanks, (2) using motive pressure, and (3) conserving energy with less pumps. In addition, Processes Unlimited stated that it performed research to determine the optimal configuration of equipment for the water treatment plant.
33. Another aspect of this project involved designing an oil and gas export pipeline. Processes Unlimited asserted that in designing the export pipeline, it researched hydraulics and performed stress analyses to choose the optimal pipe diameter and configuration.
34. According to a project document titled "Master Services Agreement," this project commenced in March of 2008.

The Belridge Sour Water Project (#3938)

35. This project involved designing a sour gas stripper, a vent stack, and a variable frequency drive for the Belridge sour water facility near Bakersfield, California. Sour water is

water that contains, among other things, hydrogen sulfide. Through a process known as stripping, the contaminants are transferred from the sour water to a gaseous stripping agent (commonly, natural gas or steam), often in a vertical stripping column. Processes Unlimited asserted during the underlying FTB proceedings that through a process of experimentation, it designed a sour gas stripper that used a horizontal stripping column, along with a steam stripping agent.

36. Another facet of this project involved designing a ventilation stack to address potential hydrogen sulfide releases from the stripping column upon compressor shutdown. Processes Unlimited stated that in designing the ventilation stack, it tested various stack heights and diameters.
37. An additional feature of this project included designing a variable frequency drive for the project's compressor motor. Processes Unlimited asserted that in designing the system, it had to test and determine whether a variable frequency drive would be efficient, given the flow and pressure ranges of the oil facility.
38. According to the credit study provided by appellants, Processes Unlimited did not claim qualified research expenses in relation to this project for the 2007 tax year.

DISCUSSION

Burden of Proof

“Tax credits are a matter of legislative grace and statutes allowing tax credits must be strictly construed against a taxpayer, with any doubts resolved in favor of FTB.” (*Appeal of First Solar, Inc.*, 2023-OTA-052P.) Unsupported assertions are insufficient to satisfy a taxpayer's burden of proof. (*Appeal of Bindley*, 2019-OTA-179P.)

The taxpayer has the burden of showing that the requirements for the research credit are satisfied. (See, e.g., *Trinity Industries, Inc. v. U.S.* (N.D.Tex. 2010) 691 F.Supp.2d 688, 696 (*Trinity I*), *aff'd* in part & *rev'd* in part (5th Cir. 2014) 757 F.3d 400 (*Trinity II*).) Treasury Regulation section 1.41-4(d) provides that “[a] taxpayer claiming a credit under [IRC] section 41 must retain records in sufficiently usable form and detail to substantiate that the expenditures claimed are eligible for the credit.” However, “[a] taxpayer is not required to keep records in a particular manner so long as the records maintained substantiate his or her entitlement to the

credit.” (*Suder v. Commissioner*, T.C. Memo. 2014-201; see also *Shami v. Commissioner* (5th Cir. 2014) 741 F.3d 560, 567.)

Qualified Research

To be eligible for a research credit under IRC section 41(a)(1), as modified by R&TC sections 23609 and 17052.12, appellants must prove, among other things,⁷ that Processes Unlimited performed qualified research, or paid someone else to perform qualified research, during the years at issue. Qualified research is research that satisfies four tests:⁸

1. Section 174 Test: Expenditures connected with the research must be eligible for treatment as expenses under IRC section 174. (IRC, § 41(d)(1)(A));
2. Technological Information Test: Research must be undertaken for the purpose of discovering technological information. (IRC, § 41(d)(1)(B)(i));
3. Business Component Test: The taxpayer must intend that the information to be discovered be useful in the development of a new or improved business component (e.g., a product, technique, formula, or invention) of the taxpayer. (IRC, § 41(d)(1)(B)(ii)); and
4. Process of Experimentation Test: Substantially all of the research activities must constitute elements of a process of experimentation for a purpose relating to a new or improved function, performance, reliability, or quality. (IRC, § 41(d)(1)(C), 41(d)(3).)

Certain types of research are specifically excluded from the definition of qualified research. They include research conducted after the beginning of the commercial production of a business component, research related to the adaption of an existing business component to a particular customer’s requirement or need, foreign research, research in the social sciences, arts,

⁷ A California research credit is equal to the sum of 15 percent of the excess (if any) of the qualified research expenses for the tax year over a base amount. (IRC, § 41(a)(1), as modified by R&TC, § 23609(b)(3)(A).) Therefore, for each particular tax year, a taxpayer must substantiate its “qualified research expenses” and the “base amount.” (IRC, § 41(a)(1).) The term “base amount” is defined as the sum of (A) a fixed-based percentage, and (B) the “average gross receipts of the taxpayer for the 4 taxable years preceding the taxable year for which the credit is being determined” (IRC, § 41(c)(1).) The term “fixed-based percentage” is generally defined in IRC section 41(c)(3), as the lesser of 16 percent or the percentage that the aggregate qualified research expenses of the taxpayer for certain years (base period) is of the aggregate gross receipts of the taxpayer for those years. (IRC, § 41(c)(3)(A) and (C).)

⁸ For purposes of the California research credit, “qualified research” only includes research conducted in California. (R&TC, § 23609(c)(2)(A).)

or humanities, and funded research. (IRC, § 41(d)(4).) Furthermore, research relating to style, taste, cosmetic, or seasonal design factors is not for a qualified purpose under the process of experimentation test and is thus not qualified research. (IRC, § 41(d)(3)(B).)

The above tests are applied separately to each business component. (IRC, § 41(d)(2).) The Office of Tax Appeals (OTA) first discusses the business component test.

The Business Component Test

The business component test requires that the research is intended for the purpose of discovering information that is useful in the development of a new or improved business component of the taxpayer. (IRC, § 41(d)(1)(B)(ii).) A “business component” is defined as “any product, process, computer software, technique, formula, or invention” which is to be “held for sale, lease, or license” or “used by the taxpayer in a trade or business of the taxpayer.” (IRC, § 41(d)(2)(B).)

In order to apply IRC section 41(d)(1) tests and obtain a research credit, the taxpayer must identify the business components for which it claims as qualified research activities. (See, e.g., *Bayer Corp. and Subs. v. U.S.* (W.D. Pa. 2012) 850 F.Supp.2d 522, 540.)

Treasury Regulation section 1.41-4(b)(2) provides that, if the requirements of IRC section 41(d) are not met at the level of the identified business component, the requirements are then applied “at the most significant subset of elements of the product, process, computer software, technique, formula, or invention to be held for sale, lease, or license.” This is referred to as the “shrinking-back” rule. The shrinking-back continues “until either a subset of elements of the product that satisfies the requirements is reached, or the most basic element of the product is reached and such element fails to satisfy the test.” (*Id.*)

Treasury Regulation section 1.41-4(b)(3) provides an example where a credit is sought for building a new motorcycle engine that incorporates a new carburetor. If the modifications to the engine as a whole do not satisfy the requirements of IRC section 41(d)(1) (e.g., the process of experimentation test), then those requirements are next applied to the carburetor (assuming it is the next most significant subset of elements of the business component).

Thus, if a taxpayer claims an entire product as its business component, it first must apply the requirements of IRC section 41(d)(1) to the claimed research activities for the product as a whole. If the tests are not satisfied at this level, then the taxpayer may apply the shrinking-back rule to demonstrate that IRC section 41(d)(1) requirements are satisfied with respect to the most

significant subset of elements of the product. Where the shrinking-back rule applies, the taxpayer may be able to obtain some of its claimed research credit even if the taxpayer cannot show that all of its claimed research activities qualify for the credit. However, if there is not sufficient evidence to apply the shrinking-back rule (i.e., if there is not enough information to determine whether IRC section 41(d)(1) requirements are satisfied with respect to the most significant subset of elements of the product), then the credit must be denied. (See *Trinity II*, *supra*, 757 F.3d 400, 404-405.)⁹

Here, appellants have not attempted to segregate expenses related to subsets of any project, such as wash tanks, heat exchangers, piping, etc. As a result, appellants bear the burden of showing that the claimed research activities with respect to each project, considered as a whole, satisfy the requirements of IRC section 41(d)(1). OTA will discuss, however, whether appellants have satisfied their burden of proof in relation to various subsets of each project, such as wash tanks, heat exchangers, piping, etc.

The Process of Experimentation Test

The process of experimentation test has three elements: (A) substantially all of the research activities for each business component must constitute (B) elements of a process of experimentation (C) for a qualified purpose. (IRC, § 41(d)(1)(C).)

A. Substantially All: The “substantially all” element means that 80 percent or more of the taxpayer’s research activities for each business component, measured on a cost or other consistently applied reasonable basis, must constitute a process of experimentation for a qualified purpose. (Treas. Reg. § 1.41-4(a)(6).) If a business component fails the process of experimentation test because of the “substantially all” requirement, a court may apply the shrinking-back rule, discussed above, until an element that satisfies the test is reached. (*Suder v. Commissioner*, *supra*.)

B. Process of Experimentation: A process of experimentation is “a process designed to evaluate one or more alternatives to achieve a result where the capability or the method of

⁹ For example, in *Trinity I*, *supra*, 691 F.Supp.2d 688, 692, the taxpayer identified as its business components certain “first in class” ships. However, the taxpayer did not attempt to separately identify and segregate expenses related to specific new aspects of any of the ships. (*Trinity I*, *supra*, 691 F.Supp.2d 688, 692.) As a result, the trial court found, and the Fifth Circuit agreed, that the shrinking-back rule could not be applied. The trial court characterized the taxpayer’s approach as an “all or nothing approach” with respect to each ship because, if the taxpayer could not demonstrate that IRC section 41(d)(1) requirements were satisfied with respect to the entire ship, the taxpayer would receive no research credits for the ship, even if it appeared that qualified research may have been conducted with respect to some portion of the ship. (*Id.* at pp. 692-693.)

achieving that result, or the appropriate design of that result, is uncertain as of the beginning of the taxpayer's research activities.” (Treas. Reg. § 1.41-4(a)(5)(i).)

A process of experimentation must fundamentally rely on the principles of the physical or biological sciences, engineering, or computer science and “involves: [1] the identification of uncertainty concerning the development or improvement of a business component, [2] the identification of one or more alternatives intended to eliminate that uncertainty, and [3] the identification and the conduct of a process of evaluating the alternatives (through, for example, modeling, simulation, or a systematic trial and error methodology).” (Treas. Reg. § 1.41-4(a)(5)(i).) “Uncertainty concerning the development or improvement of the business component (e.g., its appropriate design) does not establish that all activities undertaken to achieve that new or improved business component constitute a process of experimentation.” (Treas. Reg. § 1.41-4(a)(5)(i).)

As the Tax Court has pointed out, a process of experimentation “requires the use of the scientific method.” (*Union Carbide Corp. and Subsidiaries v. Commissioner*, T.C. Memo. 2009-50 at p. *81, affd. (2d Cir. 2012) 697 F.3d. 104.) Whereas a simple trial and error method is not sufficient, a systematic trial and error methodology can be a process of experimentation (Treas. Reg. § 1.41-4(a)(5)(i)), which suggests “a methodical plan involving an iterative testing process in which a hypothesis is tested, data analyzed, and the hypothesis [is] refined and re-tested” (*Appeals of Swat-Fame, Inc., et al.*, 2020-OTA-046P (*Swat-Fame*) at p. *12.) If only one alternative is tested, the taxpayer should conduct a series of experiments with the alternative in order to constitute a process of experimentation. (*Ibid.*)

C. Qualified Purpose: A purpose is qualified “if it relates to a new or improved function, performance, reliability or quality of the business component.” (Treas. Reg. § 1.41-4(a)(5)(ii).) As previously noted, research relating to style, taste, cosmetic, or seasonal design factors is not for a qualified purpose, and certain types of research are specifically excluded from the definition of qualified research, such as research related to the adaption of an existing business component to a particular customer's requirement or need, foreign research, research in the social sciences, arts, or humanities, and funded research. (IRC, § 41(d)(3)(B) & (d)(4).)

Analysis

Here, appellants describe Processes Unlimited's general engineering design process as follows:

1. Discussing ideas for new projects.
2. Developing initial conceptual or schematic designs.
3. Analyzing alternative design elements and equipment through modeling and simulation.
4. Refining conceptual designs to incorporate additional details for design drawings.
5. Repeating the design development and refinement until final design drawings are developed.

Appellants contend that Processes Unlimited's research activities comply with the process of experimentation test of IRC section 41(d)(1) because Processes Unlimited sought to discover information concerning the physical sciences and implemented an iterative design process in which hypotheses were tested, analyzed, refined, and retested.

Appellants further assert that when defining a process of experimentation, Treasury Regulation section 1.41-4 merely describes a process of evaluating the alternatives, which appellants contend was the process used by Processes Unlimited.

In response, FTB contends that none of the documents appellants have submitted as evidence identify a hypothesis, a methodical plan to test the hypothesis, actual testing of the hypothesis, analysis of test results, refinement or discarding of the hypothesis, or repetition of previous steps. Also, FTB contends that appellants have not shown the starting and ending dates of the alleged processes of experimentation. Further, FTB contends that for some projects, evidence was submitted for tax years other than 2007.

In reply, appellants assert that although the word "hypothesis" may not be found in appellants' documentation, a review of such documentation establishes that a process of experimentation occurred.

Further, appellants contend that the amount of evidence FTB asserts is required to substantiate a process of experimentation (including the starting and ending dates of such experimentation) is not the accepted legal standard.

Treasury Regulation section 1.41-4(a)(5)(i) provides that "[u]ncertainty concerning the development or improvement of a business component (e.g., its appropriate design) does not establish that all activities undertaken to achieve that new or improved business component constitute a process of experimentation." Here, appellants must show that Processes Unlimited

instituted an “iterative testing process in which a hypothesis is tested, data analyzed, and the hypothesis [is] refined and re-tested . . .” (*Swat-Fame, supra*, at p. *12.) If only one alternative was tested, Processes Unlimited must show that it conducted “a series of experiments with the alternative in order to constitute a process of experimentation.” (*Ibid.*) This process of experimentation test must be applied to the claimed research activities with respect to each business component, which in this appeal are the six sample projects. (See *Id.* at p. *13.)

With the foregoing in mind, OTA considers, with respect to each of the six sample projects, whether appellants have shown that at least 80 percent of Processes Unlimited’s claimed research activities constituted a process of experimentation. With respect to various subsets of each project, OTA also considers whether appellants have shown that at least 80 percent of Processes Unlimited’s claimed research activities constituted a process of experimentation.

The Station Project (#2896)

As previously noted, the Station Project involved designing physical improvements for Chevron’s oil cleaning plant near Bakersfield, California.

It appears that this project presented many design challenges (e.g., wash tanks, heat exchangers, electrical systems, structural supports, instrumentation), but OTA cannot determine from the record what portion, if any, of Processes Unlimited’s work might be viewed as testing to overcome those design challenges, as opposed to the drawing of routine items. For example, while the creation of water tanks required Processes Unlimited to consider the sizes and configurations of such tanks, it is not clear what portion, if any, of those activities constituted a scientific process of experimentation, as opposed to standard engineering. Based on the record, OTA is unable to find that at least 80 percent of Processes Unlimited’s claimed research activities with respect to the project, or any subset thereof, constituted a process of experimentation.

The Midway-Sunset Project (#3271)

As indicated previously, this project involved designing two water tanks, and associated improvements, for Chevron’s Midway-Sunset oilfield near Bakersfield, California.

Processes Unlimited identified several features of the Midway-Sunset Project, including a distribution spreader, a fixed weir skimmer, inlet piping, baffles, and measurement devices.

Appellants, however, have not provided evidence demonstrating that at least 80 percent or more of Processes Unlimited's research activities with respect to the project, or even with respect to any subset of the project, constituted a process of testing to overcome design challenges, as opposed to the designing of items where testing was not required. For example, Processes Unlimited indicated that it designed inlet piping so that oil and water streams would be equally split between two tanks. Appellants, however, have not provided evidence (e.g., dollar amounts, research notes showing hypotheses and/or rejections of hypotheses, etc.) as to the design of the inlet piping. Considering the record, appellants have not demonstrated that they are entitled to any research credits in relation to the Midway-Sunset Project, or any subset thereof.

The Burun Project (#3681)

As previously noted, the Burun Project involved designing structural improvements for the Burun oilfield in western Turkmenistan. The Burun Project presented many challenges, including designing a sand removal system. Further, the project involved designing a system to remove gas when oil and water are separated. Also, Processes Unlimited had to upgrade the oilfield's electrical system, which included designing a new electrical substation, along with the use of vacuum circuit breakers.

Processes Unlimited's use of vacuum circuit breakers does not appear to involve a process of experimentation—and appellants have not shown otherwise. While the designs of the sand removal and electrical systems may have involved processes of experimentation, appellants have not provided evidence demonstrating what portion(s) of Processes Unlimited's work might be viewed as a process of experimentation involving the testing of hypotheses.

Appellants have not provided evidence demonstrating that at least 80 percent or more of Processes Unlimited's research activities with respect to the project, or with respect to any subset of the project, constituted a process of experimentation, as opposed to standard engineering.

The Belridge-Filter Project (#3032)

As noted above, the Belridge-Filter Project involved designing structural improvements for the Belridge oil/water treatment plant near Bakersfield, California. Processes Unlimited identified several features of the Belridge-Filter Project, including a clarifier tank, a duplex steel pump casing, continuous welded rebar, and a disk-stacked centrifuge.

Processes Unlimited's decision to use continuous welded rebar does not appear to involve a process of experimentation—and appellants have not demonstrated otherwise. As for Processes Unlimited's design of a clarifier tank, a duplex steel pump casing, and a disk-stacked centrifuge, appellants have not provided evidence demonstrating what portion, if any, of Processes Unlimited's work might be viewed as testing hypotheses to overcome design challenges, as opposed to the drafting of routine items.

Based on the record, appellants have not demonstrated that at least 80 percent of Processes Unlimited's claimed research activities with respect to the Belridge-Filter Project, or any subset thereof, constituted a process of experimentation.

The Kuwait 120 MBOPD Project (#3748)

As previously noted, the Kuwait 120 MBOPD Project involved designing structural improvements for an oil facility in Kuwait. Processes Unlimited identified several features of the project, including a pipeline gathering system, a production facility, a water treatment plant, and an oil/gas export pipeline. Appellants, however, have not provided evidence demonstrating what portion of Processes Unlimited's work might be viewed as testing hypotheses to overcome design challenges.

Overall, appellants have not shown they are entitled to any research credits in relation to the Kuwait 120 MBOPD Project—or, alternatively, any subset of the project. Further, according to a Master Services Agreement, this project commenced in March of 2008, which was after the applicable 2007 tax year.

The Belridge Sour Water Project (#3938)

As indicated above, the Belridge Sour Water Project involved designing physical improvements for the Belridge sour water facility near Bakersfield, California. Appellants identified several features of the Belridge Sour Water Project, including a sour gas stripper that used a horizontal stripping column (along with a steam stripping agent), a ventilation stack, and a variable frequency drive. While the creation and/or incorporation of the horizontal stripping column, as well as the variable frequency drive, certainly required advanced engineering skills, it is not clear what portion, if any, of those activities constituted a scientific process of experimentation, as opposed to standard engineering.

Further, OTA notes that according to the credit study provided by appellants, Processes Unlimited did not claim qualified research expenses in relation to this project for the 2007 tax year. Based on the record, OTA is unable to find that at least 80 percent of Processes Unlimited's claimed research activities with respect to the project, or any subset thereof, constituted a process of experimentation.

Conclusion

Because appellants have not demonstrated that substantially all of Processes Unlimited's activities for any of the sample projects (or for any subset of a project) constituted elements of a process of experimentation for a qualified purpose, OTA does not need to discuss the other tests for qualified research (i.e., the Section 174 test and the technological information test).¹⁰

¹⁰ OTA also does not need to address FTB's arguments that Processes Unlimited's activities constitute "funded research," nor whether appellants have substantiated the amount of "qualified research expenses" associated with any project or business component. Additionally, OTA does not need to address whether appellants have provided evidence demonstrating that the "base amount" was calculated accurately. Further, OTA will not address FTB's argument that there is no research credit available to flow through to appellants because Processes Unlimited did not file an appeal to OTA (based on FTB's determination that Processes Unlimited was not entitled to any of its claimed research credits for the tax year at issue).

HOLDING

Appellants have not demonstrated that they are entitled to research credits under IRC section 41(d)(1).

DISPOSITION

FTB’s action denying appellants’ claim for refund for the 2007 tax year is sustained.

DocuSigned by:
Amanda Vassigh
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Amanda Vassigh
Administrative Law Judge

We concur:

DocuSigned by:
Huy "Mike" Le
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Huy “Mike” Le
Administrative Law Judge

DocuSigned by:
Natasha Ralston
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Natasha Ralston
Administrative Law Judge

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