QUEEN'S BENCH FOR SASKATCHEWAN

Date: **2011 03 14** Citation: **2011 SKQB 112**
Docket: Q.B. No. 113 of 2003
Judicial Centre: Saskatoon

BETWEEN:

HOUWELING NURSERIES OXNARD, INC.

PLAINTIFF

- and -

SASKATOON BOILER MFG. CO. LTD.

DEFENDANT

AND BETWEEN:

SASKATOON BOILER MFG. CO. LTD.

PLAINTIFF BY COUNTERCLAIM

- and -

HOUWELING NURSERIES OXNARD, INC.

DEFENDANT BY COUNTERCLAIM

Counsel:

R.W. Thompson, Q.C., A.D. Grosse and R.J. Kruger	for the plaintiff
G.G.W. Semenchuck, Q.C., A.T. Ailsby and M.J. Penny	for the defendant

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JUDGMENT R.S. SMITH J.
March 14, 2011

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[1] The plaintiff (defendant by counterclaim) operates a commercial greenhouse facility near the town of Oxnard, California. It purchased four boilers from the defendant (plaintiff by counterclaim) as part of the necessary equipment for its business. The plaintiff claims the boilers have not performed as contracted or as

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represented by the defendant and as a result it has suffered grievous financial damage during the time period January 1, 1996 to December 31, 2001 ("the claim period").

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[2] The contracts between the parties provided that the laws of the Province of Saskatchewan would govern any dispute. As a result, the parties bring this litigation in the Queen's Bench Court of Saskatchewan. Operationally, the plaintiff primarily deals in US dollars but has, for the purpose of this action, converted its claim to Canadian dollars.

[3] The plaintiff asserts that the defendant's product failure has created four heads of damages. Those heads of damages and the quantum of loss claimed (with pre-judgment interest calculated to December 31, 2009) are:

			Loss (Cdn.)
(i)	Loss from reduced yield	$10,403,735	
	Pre-judgment interest	3,291,201	
	Sub-total		$13,694,936
(ii)	Loss from exceptional maintenance cost	$297,345	
	Pre-judgment interest	87,132	
	Sub-total:		$384,477
(iii)	Loss from excessive natural gas and CO2 consumption	$2,013,839	
	Pre-judgment interest	668,613	
	Sub-total:		$2,682,452
(iv)	Loss from early boiler replacement	$1,097,606	
	Sub-total:		$1,097,606
	Total loss claimed by plaintiff (at December 31, 2009)		$17,859,471

[4] The defendant replies that the plaintiff does not come to the juridical table with compelling or probative evidence respecting any of the four heads of damage advanced. Additionally, and submitted of equal value as an answer, the defendant posits that a commercial tomato greenhouse operator faces a myriad of risks, perils and dangers on a weekly, if not daily, basis. In that environment, the defendant argues it is impossible for the plaintiff to lay at its feet, damages arising from the allegations respecting its product's performance.

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FACTS

[5] The principal of the plaintiff is Cornelius Houweling (known as Casey). His family is Dutch and immigrated to Canada in 1951. His father started a small greenhouse operation in 1956. Casey has been helping out with the greenhouse business since he was a child. In 1985, he started his own operation, growing greenhouse tomatoes in Delta, British Columbia (an affiliate of the plaintiff but a separate corporate entity). Typically, the plaintiff accesses greenhouse technology from Holland which is generally accepted to be a world leader in greenhouse manufacture. The plaintiff's Delta affiliate grows tomatoes for sale as well as other plants for propagation (starting plants to be sold to other greenhouses to finish).

[6] The principal of the defendant is Ray Graves. Mr. Houweling believes he would have met Mr. Graves in 1992. Sometime in 1993 he purchased a 1,250 hp. hot water boiler from the defendant for the Delta greenhouse. The relationship started well. Mr. Houweling allowed that the first boiler is still in operation. It utilizes Puripher burners and it has had no operational difficulties of consequence. The significance of this will be noted in due course.

[7] At the plaintiff's Delta facility, it was necessary to cease production for winter. As a go-forward business plan, the plaintiff was desirous of having a year round

operation, thus maintaining a continuous relationship with its customers. To do that, it had to seek out warmer climes. Eventually, Mr. Houweling resolved that the plaintiff would set up business near the Town of Oxnard, located in Ventura County, California.

[8] The design of a commercial greenhouse is a complex affair. Mr. Houweling had a friend, Mr. Guert Reinders, who was a principal of Kara Engineering. Kara Engineering, centred in Holland, was in the business of designing greenhouses. Kara Engineering had worked with Mr. Houweling in the design of the Delta Operation. Mr. Houweling concluded it was logical to retain Kara Engineering to design the Oxnard facility.

[9] In addition to greenhouse design, an overlay of computer controls were to be supplied by a company described throughout the trial as Priva. Priva had a Canadian subsidiary, Canadian Climatrol. However, for the purposes of this judgment, I will make no distinction as, in reality, there is none. The two together will simply be referred to as Priva rather than by the formal Dutch corporate names. Priva is well known in the industry as one of the biggest creators and suppliers of computer software for commercial greenhouses.

[10] In 1995, the plaintiff purchased 160 acres (64.75 hectares) in Ventura County and went about contracting and interacting with Kara, Priva and the defendant respecting the design and other elements of the Oxnard facility.

[11] A commercial greenhouse involves several systems which are integrated and which have as their primary function proper temperature control, a critical element in optimizing greenhouse production. In broad terms, the Priva computer system monitors various internal and external environmental conditions as the first step in maintaining an environment conducive to production. An important element of that is temperature. If the temperature falls below the desired pre-determined mark, the Priva computer system will

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call for heat. The greenhouse operator is interested not only in the temperature every hour, but also in what is known as the 24-hour temperature, being an average of the temperature every hour throughout the entire day.

[12] Demand for heat in the plaintiff's Ventura County greenhouse is met by the distribution system designed and built by Kara Engineering. Transport pumps distribute the heated water (from the defendant's boiler) to the greenhouses. Each greenhouse has two transport systems and six heating system zones connected to each of the transport systems. The pumps send hot water to each of the zones and the relevant zone pumps then circulate the hot water through one and one-half inch pipes that are located approximately six inches off the ground. Those heating pipes run amongst the tomato plants and transfer heat to the greenhouse by convection and radiation. The zone pumps shut down when there is no requirement for heat in the greenhouse. Each zone has its own temperature sensors communicating with the Priva system.

[13] Compared to Canada, there is a different, and more rigorous regulatory landscape in Ventura County for greenhouse operations. Specifically, all parties involved understood that there was a limit respecting the amount of nitrous oxide (Nox) that the boiler burner could emit. In or about 1995, the then limit for Nox emissions was 40 parts per million ("PPM"). However, Mr. Graves, the principal of the defendant, while engaging in due diligence regarding Ventura County, concluded that the 40 PPM Nox limit would likely be reduced in the relatively near future to 30 PPM. On September 15, 1995, Mr. Graves wrote Kara (copying the plaintiff) (P-84) as follows:

> I have learned from another source that the Nox limit is expected to be reduced to 30 PPM in the fairly near future. For this reason, I suggest the first boiler be outfitted for 30 PPM, so it will be the same as future boilers.

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[14] From that point forward, the plaintiff and the defendant, and all related parties, operated on the basis that the defendant's boiler/burner would meet the stricture of 30 PPM Nox. The defendant understood that was a problem, as its Saskatoon manufacturing facility (there are no Nox limits in Canada) did not have the technology to meet the Ventura County then current requirement of 40 PPM, let alone the contemplated 30 PPM.

[15] The defendant then set about searching for burner manufacturers which could meet the requirements of the plaintiff. The primary requirement was an input firing rate of 52.3 million BTUs/hr. without exceeding 30 PPM Nox. The defendant found a distributer in Holland, Dimpex, who represented a burner manufacturer, Vitotherm. Both Dimpex and Vitotherm warranted its burners could meet the specifications demanded by the plaintiff, the defendant and Ventura County. Mr. Graves had no experience with Vitotherm and this would be the first time he had had occasion to use that type of burner in the defendant's equipment.

[16] In the early part of 1996, Mr. Graves visited the Vitotherm factory in Holland and observed a number of boilers in operation. There was no independent testing conducted. Mr. Graves accepted, at face value, Vitotherm's assertion that it could generate 52.3 million BTUs/hr. input without exceeding 30 PPM Nox.

[17] By late January, 1996, Ray Graves communicated to the plaintiff that he was convinced the Vitotherm burner would provide "the type of service you need". (P-85).

[18] In the latter part of February and early March, 1996, documentation was exchanged constituting a contract between the plaintiff and the defendant for a boiler which would generate the required BTU/hr. input rate with Nox emissions under 30 PPM (P-3, P-4 and P-5). The purchase price was $245,013 with an option for combined gas/oil

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firing at an additional cost of $8,021. In due course, the defendant received the Vitotherm burners from Holland. It then assembled the boiler in Saskatoon.

[19] Before the boiler was shipped to Ventura County, a *Factory Inspection and Fire Test Report* must be prepared (P-259) and it travels with the boiler to California. From the defendant's perspective, it was important that the Report demonstrated that the boiler being shipped generated Nox under the regulatory requirement of 40 PPM. The *Factory Inspection and Fire Test Report* that travelled with the first boiler (Boiler #1) showed a high fire rate of 48,700,000 BTUs/hr. with the Nox at 36 PPM.

[20] When queried about those statistics, Mr. Graves replied that when he test fired Boiler #1, he could get a BTU input rate of 52.3 million but when he did it exceeded the 40 PPM Ventura County Nox limit. As he determined it was necessary to ship a "legal" boiler, for the purposes of preparing the report, he reduced the input firing rate to a level where the Nox rate was within the Ventura County regulations. There was some discrepancy in Mr. Graves' testimony at trial and at discovery about his ability to reach a high fire input rate of 52.3 million BTUs. Suffice it to say that if he did achieve that input firing rate at the factory test fire, it was not on a sustained basis.

[21] The documentation constituting the contract between the plaintiff and the defendant incorporated the defendant's standard terms and conditions. Those terms and conditions were the same for all four boilers and were also part of the contract for the original boiler sold to the plaintiff's affiliate in Delta, British Columbia. Clauses 4 and 6 are germane to this debate (P-3). They provide:

> 4. WARRANTY:
>
> SASKATOON BOILER MFG. CO. LTD., agrees to repair or replace f.o.b. Saskatoon, Saskatchewan any workmanship or materials, which, within one (1) year from date of startup on site, shall prove to have been defective in material or

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> workmanship, provided it is given prompt notification of the discovery of any such defects. SASKATOON BOILER MFG. CO. LTD. will not be responsible for repairs made without its consent nor shall it be held liable for damage or delays arising out of the repair or replacement of any such defective materials. This express warranty is in lieu of any implied warranties.
>
> ...
>
> 6. LIABILITY:
>
> SASKATOON BOILER MFG. CO. LTD. carries $2,000,000.00 Liability Insurance and its liability is to be limited to the terms and amount of this insurance.

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[22] Boiler #1 was delivered and commenced operation at Oxnard sometime in September, 1996. The plaintiff retained a local boiler contractor, Dan Withrow, the principal of Industrial Boiler Service, to assist in the commissioning of Boiler #1.

[23] From the beginning, two important operational issues proved problematic. Mr. Withrow testified that he could not get Boiler #1 to run at 52.3 million BTUs/hr. on a sustained basis. Although that input firing rate could be reached, the boiler was clearly overtaxed at that level with the attendant and troubling rumblings and rattlings. In short, Boiler #1 could not run on a continuous basis with an input firing rate of 52.3 million BTUs/hr. Mr. Withrow testified that the boiler could run between 42 and 45 million BTUs/hr. on a sustained basis.

[24] The second issue was Nox PPM. Mr. Withrow understood that the boiler's rated capacity was to have Nox emissions below 30 PPM. It was consistently above that. It should be noted that Mr. Withrow did not consider that to be a major problem as he knew the Ventura County Nox limit was 40 PPM. In addition, he understood that agricultural operations were exempt from Ventura County Nox emissions. On a day-to-day basis, his focus was on the input firing rate and, in due course, what he characterized

as extremely high maintenance required of Boiler #1. The tubes leaked and were constantly being adjusted. They developed scale, there were problems with valves and fans. Seemingly, all aspects of the boiler required constant attention.

[25] All the witnesses familiar with the greenhouse industry as well as experts conceded that there is inevitably a "commissioning period" respecting a boiler. Once a boiler is set up in the field, it is highly unlikely that it will operate perfectly as soon as the "on switch" is hit. Adjustments, both to the Priva system and the Kara system would be expected by all involved.

[26] Towards the end of 1996, the plaintiff had resolved that he would proceed with a new phase of his greenhouse operation, thus requiring a second 1,250 hp. burner. He communicated that intention to the defendant. The defendant then wrote Vitotherm seeking a quote on a second set of Vitotherm burners and outlining the specifications required. On the significant elements of the boiler, namely the input firing rate of 52.3 million BTUs/hr. with a maximum 30 PPM Nox, the requirements were the same. It is interesting to note that when Mr. Graves, of the defendant, wrote Vitotherm on March 31, 1997 (P-16), he made the following statement:

> Please note:
>
> - We had problems firing the rated 52.3 [million BTUs/hr.] and could not achieve 30 PPM Nox. Please address these problems.

[27] Mr. Graves testified that when he raised issues of the boiler's inability to reach rated capacity in either BTUs or Nox, Vitotherm's standard answer was that it would, in due course, dispatch technicians to the field who, after making the necessary adjustments, would solve the problems.

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[28] Perhaps another reason for Mr. Graves not being overly concerned about the shortfall in the BTUs input was correspondence sent by Kara to the defendant in September, 1995 (D-8). A Kara technician advised the defendant in that correspondence:

> Only a few days per year the full power of the boiler will be needed to heat the greenhouses in California. The rest of the time only about 75% of its full power will be needed.

[29] The evidence is consistent from all parties that the boilers are required most critically in winter (as that is defined in California). While different witnesses had different dates, it can be fairly said California winter runs roughly from November 1 to March 15. All the witnesses of the plaintiff asserted it was crucial to production to be able to have full input firing rate of 52.3 million BTUs per hour during the cold days that may arise in that period.

[30] Kara had designed the heating system to address what is known as the "Delta T". Given the historical weather information in the Oxnard area, it was determined that the plaintiff's facility in Oxnard would require a Delta T of 18°. That is, the burners would have to be able to lift the temperature 18° above the ambient outside temperature. In short, if it was 0° Celsius in Oxnard, the boilers must be able to raise the temperature in the greenhouse to 18° Celsius. The ability to create that temperature lift is a major factor in determining the horsepower of the boiler that is required. In this case, the required horsepower was 1,250 hp. Delta T also has a second definition, namely, the difference in temperature between the outgoing water from the boiler into the greenhouse system and the temperature of the water coming back from the greenhouse into the boiler.

[31] Documentation was exchanged in April, 1997 respecting the purchase by the plaintiff of Boiler #2 from the defendant for $278,574. (See: P-17 and P-18). The major specifications were the same.

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[32] While arrangements were being made between the defendant and Vitotherm to manufacture Boiler #2, the defendant became aware of maintenance issues plaguing Boiler #1. In correspondence dated May 29, 1997, Mr. Graves wrote to Vitotherm (P-25), respecting problems Dan Withrow, et al, were having with a motor on Boiler #1. The last paragraph of the correspondence said:

> We are in an extremely difficult situation, which is being caught between your supplier and our customer. Houweling needs the motor in case something happens to the one now in operation. They can easily suffer $15,000 - $20,000 losses per day if the boiler goes out of operation. Consequently, we may have to pay for the rewind and try to settle the money part later on. However, the winding information is required immediately.

[33] Boiler #2 was in a position for the *Factory Inspection and Fire Test* by December, 1997. Again, the performance was less than the contractually rated capacity. The high fire rate was noted at 48,700,000 BTUs/hr. The Nox at that input firing rate was 34 PPM – sufficient for Ventura County requirements – insufficient for contractual compliance.

[34] Boiler #2 was operational at Oxnard sometime in late December, 1997. Again, like Boiler #1, it proved high maintenance. Again, like Boiler #1, Dan Withrow could not reach the contracted input firing rate of 52.3 million BTUs/hr. on a sustained basis. At no time did he come close to the 30 PPM contracted Nox limit.

[35] All parties continued to work to solve the operational issues. This is understandable. The plaintiff, defendant, Kara and Priva were all involved in the Delta facility which was not plagued by operational issues. As for the Vitotherm burner, Ray Graves continued to receive Vitotherm's assurance that once its technicians were in the field, issues regarding BTU input firing rate and Nox limits could be addressed. The defendant continued to invest its hope in Vitotherm. That hope was misplaced.

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[36] Notwithstanding the problematic aspects of Boiler #1 and Boiler #2, the plaintiff was still intent on expanding its Oxnard facility. By late May or early June it had communicated to the defendant that it wished to obtain two more boilers for its expanding Oxnard operation. In one of the initial conversations concerning Boilers #3 and #4, Mr. Houweling advised Mr. Graves that the third and fourth greenhouses were going to be 10% bigger than the first two and thus it was critical that the boilers operate at 100% of rated capacity.

[37] Ray Graves again communicated with Vitotherm seeking a quote for two additional Vitotherm gas burners. The specifications were more or less as before. And, as before, Mr. Graves added the following in his correspondence to Vitotherm of June 18, 1998 (P-31):

> Please note:
>
> – We had problems firing the rated 52.3 million cubic feet of natural gas and could not achieve 30 PPM Nox. Please address these problems.

[38] In late September, 1998, documentation was exchanged (See: P-33 and P-35) between the plaintiff and defendant constituting the contract for Boilers #3 and #4 at a price of $591,884. The same standard terms and conditions were in effect respecting warranty and liability.

[39] By April, 1999, Boilers #3 and #4 were ready for *Factory Inspection and Fire Test Report* conducted by the defendant. Again, the BTU input firing rate is noted for each at 47 million BTUs/hr. One boiler was rated 39 PPM Nox and the other 29 PPM Nox. Once again, the test results (for one of the boilers) did not meet the contracted specifications. However, the boilers were shipped as they were “legal” from the point of

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view of Ventura County regulations. The inference I draw is that Mr. Graves continued to trust in an "in-the-field" fix by Vitotherm.

[40] Boilers #3 and #4 were received in Oxnard sometime in July of 1999 and would have been operational shortly thereafter. It is worthwhile to observe that Dan Withrow conducted his own *Factory Inspection and Fire Test* in September of that year. For one boiler, his test demonstrated an input capacity of 45,272,000 BTUs/hr. at 32 PPM Nox. For the other, it was 46,228,000 BTUs/hr at 35 PPM Nox. (See: P-39 and P-58).

[41] After Boilers #3 and #4 were operational, maintenance issues continued to plague the plaintiff. It was difficult to maintain flame stability. In short, the burner was inconsistent and unpredictable. Leaking tubes were a chronic problem on all four boilers throughout the claim period. Tubes were re-rolled to try to stop the leaks. Sometimes it worked – sometimes the tubes had to be replaced. The refractory on the front door of Boiler #1 failed. There were also problems with the throat refractory on Boiler #2. Both front and rear doors on Boiler #2 had to be reinforced. Fans which were part of the Vitotherm burner kit experienced failures. In addition, the boilers were cycling too often (turning on and off). The boilers' inability to reach their rated capacity on a sustained basis made it impossible for them to deliver the Delta T of 18° for which the system called.

[42] The Priva computer interface with the boilers was also problematic and exacerbated by excessive cycling of the boilers. It is clear everyone thought the problems with the computer were more than just commissioning issues. Either there was a problem with Priva or a problem with the boilers. Priva's answer was that if the boilers could fire at or close to their rated capacity on a continuous basis (no excessive cycling), then its computer interface with the boilers and the greenhouse system would present fewer issues.

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[43] Suffice it to say, all four boilers presented as high maintenance and operationally below contracted specifications. However, far and away the most pressing issue was the absence of the required BTUs, which was an unrelenting problem until the Vitotherm burners were replaced in 2001.

[44] In the period 1996 to 1999, BTU capacity and Nox limits were not the only operational issues facing the plaintiff. Boiler #3 had considerable internal fouling caused by mud which had to be cleaned out. In retrospect, it was clear that that was not the fault of the defendant but rather the result of a less than workmanlike performance by the plaintiff's personnel dealing with the commissioning of Boiler #3.

[45] Water was also a problem. The Court benefited from the testimony of the plaintiff's head grower, Martin Weijters; the plaintiff's greenhouse consultant, Simon Voogt; and the defendant's greenhouse expert, Dr. M. Mirza. From their collective wisdom, it is clear that the three major elements in the greenhouse production of tomatoes are light, heat and water. Light is a function of nature but heat and water must be addressed by the greenhouse operator. A natural incident to those elements is humidity, which must be controlled as too much or too little can negatively affect tomato production. That control is through heat and greenhouse vents.

[46] The plaintiff was alive to the water challenges at the Oxnard facility. To address that problem it had, from the beginning, arranged for water specialists. The plaintiff initially used R. S. Industries Inc., later switching to Hallwood and Associates for advice regarding water quality. Water had to be treated in two ways. Firstly, as nutrition for the plants, the Oxnard water contained sodium which, in too large quantities, can have a negative effect on the tomatoes. Secondly, the water going into the boilers had to be treated so as to avoid scaling and oxygen pitting on the heating tubes. Those conditions can negatively affect boiler operation and thus heat production.

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[47] It is clear that the plaintiff, and its contractors, had a learning curve through the period 1996 to 1999 in dealing with the challenges presented by the water. To a great extent those challenges were ameliorated by the installation of a reverse osmosis filter in 1999. However, I conclude that a portion of the operational difficulties experienced with the four boilers, which would have had a negative effect on tomato production, was attributable to water issues.

[48] The learning curve was not limited to dealing with water. Ventura County weather and operations were new to the plaintiff's personnel. Martin Weijters agreed that he, as head grower, as well as other personnel were and are always learning and adapting, seeking the right balance and facing the challenges of the climate in Ventura County.

[49] Tomatoes in the plaintiff's greenhouse are rooted in a growing medium. From 1996 through to more or less the end of 1997, the plaintiff's personnel were experimenting with a view to determining the best and most economical growing medium. In 1996, the growing medium was foam – in 1997, it was changed to sawdust. For a brief time they used something called rockwell fibre. After 1997, they resolved that cocoa peat was the best. I do not suggest that this was not a normal and expected learning curve, but simply observe that there were challenges beyond the boilers that could have, and likely did, affect production.

[50] Boilers #3 and #4 were different from Boilers #1 and #2 because they employed what the parties called a heat sink. Essentially this is a large tank which holds hot water heated by the boilers.

[51] Boilers #1 and #2 would typically be operated in the evening and early morning when it was necessary to address the Delta T. It was contemplated that Boilers #3 and #4 would operate all day. During the day Boilers #3 and #4 would heat the water which would be stored in the heat sink for use in the evening or early morning. Firing of

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the burners in Boilers #3 and #4 generated carbon dioxide (CO2). CO2 is a critical element in the photosynthesis process, which only takes place during daylight hours. Accordingly, CO2 could be doused into the greenhouses by the use of Boilers #3 and #4 during the day. In the absence of a heat sink, it was necessary for the plaintiff to purchase and distribute CO2 in the greenhouses.

[52] One of the elements of the plaintiff's claim against the defendant is that boiler inefficiencies caused reduced daytime CO2 emissions from Boilers #3 and #4. As a result CO2 had to be purchased by the plaintiff. This would not have been necessary had the boilers been able to operate at a satisfactory BTU rating on a consistent basis. Combined with the CO2 claim is a claim respecting excessive natural gas usage. The plaintiff complains that the inefficiencies of the boilers required the consumption of more natural gas than otherwise would have been necessary.

[53] Everyone involved attempted to address the numerous issues with the goal of creating an efficient, reliable boiler operation. That proved elusive. The thorniest issue faced by all the players was that it was difficult to pinpoint where the problem was centred – was it the boilers or was it Priva's computer system which was completely integrated with the boilers' operation? Did the high maintenance of the heating tubes in the boilers arise from the lack of consistent heat or problems caused from the treated water? I accept the fact that all of the parties were doing their best to attempt to determine a solution. As early as May, 1999, Priva agreed that it would develop additional software at its own cost and in that process it would work together with Kara.

[54] It is worth noting that Priva indicated that the additional software was regarded as an investment and that it hoped to be compensated through future projects undertaken by the plaintiff (D-47).

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[55] The defendant tendered the idea of bringing in a fifth boiler (800 hp.) in order to augment the existing equipment and thus address the fact that the four boilers could not operate at the contracted BTU capacity. The defendant suggested that Vitotherm should be responsible for the costs. Suffice it to say nothing came of that.

[56] It is also worth noting that at the beginning of the relationship between the defendant and Vitotherm, Vitotherm had undertaken to have personnel located in Los Angeles or nearby in order to render assistance on operational issues. Vitotherm's office was never established and its commitment to place personnel in the field to assist the defendant and the plaintiff was, at best, episodic.

[57] Although there was some improvement on operational issues by March of 2000, the four boilers continued to be incapable of running at their rated BTU capacity. During the winter, this would present temperature issues in the greenhouses. I conclude that in this time period the plaintiff was not overly concerned with the Nox problem but only because it was not immediate. The inability to obtain the required heat from the boilers was the all important operational issue facing the plaintiff on a day-to-day basis, particularly in the winter.

[58] The situation is best reflected in correspondence from the plaintiff's chief technician to Vitotherm on March 31, 2000 (P-48):

> I talked with Dan Withrow of Industrial Boiler Service in California today. Dan was with your people (Peter Brus and Rene de Wit) when they were at Houweling Nurseries on March 13 and 14 to adjust the burners to operate at full rate. I witnessed the setting of boilers numbers 3 and 4. On my departure on March 14, it appeared that the boilers would be okay, with the exception that #3 was left at 43 PPM Nox. Peter indicated to me that he didn't feel he could do better.

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> Now Dan has told us that there are problems with the burner operation and Houwelings want him to fix them. He reported the following conditions to us:
>
> > #4 boiler is rumbling excessively at maximum fire (high speed-high fire).
> >
> > #3 boiler is having flame failure during the run cycle and there is some soot accumulating in the main flue close to the burner.
> >
> > #2 is having an intermittent problem of lighting off on main flame.
>
> The problems which #3 and #2 are having were not happening before the burners were set by your people on their last time on site. Dan does not know where to start in correcting these problems (and I cannot advise him). Dan feels the only thing he could do is reset the burners and derate the firing so that they would be as they were when Peter and Rene arrived to set them up.
>
> Gert, we need answers. What can be done to make these burners operate steady and produce full rating? Reply to Ray or myself as to what must be done.

[59] It is an understatement to say the reply by Vitotherm to the plaintiff (also addressed to Ray Graves of the defendant) was a profound disappointment. It can be paraphrased, in short, "we cannot fix the problem – Houweling will have to sue us".

[60] Notwithstanding the disappointing response from Vitotherm, the defendant was not yet prepared to give up on the Vitotherm burner. It was its intention to motivate Vitotherm to make the necessary adjustments in the field so that the burners could operate as contracted. By August 22, 2000, operational difficulties (other than heat) had become less pressing. It is fair to observe that by then the plaintiff's focus had narrowed and centred on the lack of capacity from the burners as the source of operational issues. In correspondence that month (P-107), Casey Houweling, the plaintiff's principal, wrote to

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Ray Graves at the defendant and indicated the following points are presenting difficulties, namely:

> - Boilers are derated by some 25% so heat storage program loses +/- 25% efficiency increasing the need for costly liquid CO2. Approximate potential cost +/- $10,000 per month.
> - Excessive down time on boilers is causing increased load and excessive thermal shock on remaining boilers.
> - Excessive repairs on boilers both burner and waterside causing Dan [Withrow] to be called in almost on a weekly basis, cost exceeding $5,000 per month.
> - Management focus and lost time dedicated to boiler operational issues and alarms that otherwise would and should be focussed on crop and business efficiencies.
> - Increase in use of natural gas and boiler chemical make up due to boiler down time and not being able to maximize computer use.

[61] The defendant understood the plaintiff's concern and continued to hope that an "in-the-field" fix by Vitotherm could bring the boilers up to their rated capacity. Ironically, one of the better detailed recitations of the Vitotherm burner's chronic lack of performance came from the defendant, in correspondence of September 1, 2000 where Ray Graves wrote to Vitotherm (P-57):

> I am responding to your August 16, 2000 e-mail. There is the fact that all four burners at Houweling Nurseries Inc. have never operated properly according to the requirements of our purchase orders.
>
> ...
>
> Now to return to #1 burner:
>
> When we fired this burner in our factory, we could not achieve the required performance. The Nox was excessive if the burner was fired above 45,000 cu.ft./hr. We could not fire the full rate of 52,300 cu.ft./hr.

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> ...
>
> The reality of the Houweling burners is that they must be operating at 100% of rating and producing the specified performance, no later than September 30, 2000, when the heating season starts. I made you aware of the September 30, 2000 date back in April and to this date, nothing has been accomplished in spite of continued promises and assurances from you.
>
> ...
>
> There are three possible ways to remedy the problems.
>
> 1. Dimpex/Vitotherm to modify the existing burners to produce the required capacity and performance and pay all costs.
> 2. Dimpex/Vitotherm to supply and install VG1-S1250 burners to produce the required capacity and performance and pay all costs.
> 3. Dimpex/Vitotherm to pay for the purchase and installation of a 5th boiler with VG1/S1000 burner. This option would allow the existing burners to be de-rated to lower firing rate so acceptable Nox could be achieved.
>
> Gert, we all want the same thing and that is for these four burners to perform properly, so that every ones' responsibility is fulfilled, and end up with a satisfied customer.
>
> There is extreme urgency to put a solution in place. Mr. Houweling has been unbelievably patient and co-operative about these problems at great cost to himself. Saskatoon has also shown the same patience and co-operation, however, the problems must be solved now. Please respond by September 7, 2000.

[62] Vitotherm made no meaningful response to the defendant's entreaties. In the end, the plaintiff indicated to the defendant that it could no longer operate the boilers at a substantial derated capacity. In sum, it was necessary to change the Vitotherm burners to the Puripher burners, as were used at the Delta facility.

[63] Casey Houweling understood the Puripher burners would exceed Ventura County Nox limits but his need for heat was imperative and he felt that the Nox problem

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could be addressed down the road. Sometime in the early part of 2001 the retrofitting of the boilers began by removal of the Vitotherm burners and their replacement with Puripher burners, being the standard burner employed by the defendant. The defendant appeared to concede there would be no fix to the Vitotherm burner and it agreed to cover the cost of the new Puripher burners.

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[64] On August 22, 2001, all of the players visited the site at Oxnard. Present were:

> Casey Houweling – plaintiff
> Terry Lattimer – operations manager – plaintiff
> Richard Van Den Burg – boiler maintenance – plaintiff
> Geurt Reinders – Kara
> Ad van Tienan – Priva
> Greg Chapman (new boiler maintenance contractor)
> Stewart Wood – Hallwood and Associates water energy management

[65] Mr. Hallwood later provided a report on the meeting which touched on many of the issues facing the plaintiff's operations and efforts to address them, both past and looking forward. On page 3 of the report (part of D-78), the following observation was made:

> It was generally agreed that the major effect of the boiler failures was due to poor temperature control. Either firing too hard, too soon after start-up or returning too cold of plant water to the boilers was resulting in thermal shock and the subsequent expansion and contraction leading to Fatigue Corrosion.

[66] Greg Chapman testified that after the installation of the Puripher burners it took some time to work with the Priva people during the commissioning process which

inevitably follows installation and/or major refit. Mr. Chapman indicated that in his view the commissioning process progressed satisfactorily.

[67] As early as April, 2001, the defendant sensed that litigation was inevitable. It retained counsel and suggested to the plaintiff that they join together in suing Vitotherm. The plaintiff declined, primarily for the reason that it had no direct contractual nexus to Vitotherm. The plaintiff's contract was with the defendant.

[68] The plaintiff's evidence is that after the Puripher heads were installed in the four burners, problems across the board began to abate. To be sure, there were still commissioning issues and computer adjustments to be made. However, the ability of the Puripher burners to produce BTUs at a consistent level proved to be a tonic for almost all operational issues. It is true that the Puripher burners have been typically operated at 48 million BTUs/hr. rather than at the full 52.3 million BTUs/hr. input originally contracted for. That is because Mr. Weijters advised to exceed that level might stress the boilers. However, Mr. Weijters also stated that, for the most part, at that input level he was and is able to meet the 24-hour temperature requirement in winter.

[69] By the end of June, 2001, all Vitotherm burners had been changed to Puripher. There were, admittedly, legacy issues and computer adjustments to be done but it was clear the unrelenting nature of failures regarding BTU capacity and chronic maintenance issues were addressed by the presence of a consistent heat from the Puripher burners.

[70] For the plaintiff, however, there is still trouble on the horizon. It is well aware Puripher burners are incapable of operating under the Ventura County Nox limits of 40 PPM. Interestingly, although starting in 1996 there had been much speculation that the Ventura Country Nox limits would be reduced to 30 PPM, in the end they have not been.

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[71] The plaintiff called Mr. Kurtis Coleman, an environmental lawyer from California. Mr. Coleman confirmed that since 2004 there has been no question that the plaintiff's Oxnard facility is subject to the Ventura County regulations limiting Nox emissions to 40 PPM. Mr. Coleman added that the calculation of PPM is done after an oxygen correction. For the purposes of this case, the specifics of that are not critical.

[72] Mr. Coleman conceded that prior to 2004, there may have been a debate as to whether the regulations regarding Nox emissions were applicable to an agricultural operation like the plaintiff's. However, subsequent to 2004, there is no debate. The Nox limits apply.

[73] Although the 40 PPM Nox limits have applied to the plaintiff since 2004, it has never been necessary for the plaintiff to obtain a permit from the local authority, known as the Air Resources Board because it is an agricultural operation.

[74] As no permit has been necessary, no regulator has had occasion to assess the boilers to see whether they were within the stricture of 40 PPM. As a result, the plaintiff's greenhouse facility has remained "under the regulatory radar".

[75] On December 7, 2009, the plaintiff's Nox limit comfort zone changed. The United States Environmental Protection Agency ("EPA") declared carbon dioxide and a number of its close relatives, including Nox, an endangerment and therefore subject to EPA regulation. This will require the plaintiff to register with the EPA. Part of the registration process involves the plaintiff obtaining a permit from the Ventura County Air Resources Board confirming that it is in compliance with Ventura County Nox emission regulations.

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[76] As the plaintiff is currently situated, it will be unable to obtain that certification. This looming problem, and other factors, form part of the plaintiff's claim for replacement of the boilers.

[77] The unfortunate reality is that the two parties to this litigation, namely the plaintiff and the defendant, were both, in their own way, victims – the plaintiff, who contracted for something that was not delivered and the defendant, who relied on Vitotherm and incorporated its burners into its boilers.

[78] Litigation followed. The defendant commenced a claim against Dimpex and Vitotherm (Q.B. No. 1667 of 2001). In broad terms, it alleged that Vitotherm delivered burners which were incapable of providing an input heating capacity of 52.3 million BTUs/hr. and which could not meet environmental emission standards respecting Nox. The claim was cast as breach of contract and negligence. The plaintiff commenced litigation in California against the defendant and also Kara and Priva (and its Canadian affiliate). That claim also alleged breach of contract and negligence.

[79] As time wore on, experts were consulted and the focus of the litigation narrowed. In the end, the plaintiff concluded that the sole cause of its loss was the defendant's inability to deliver the boilers contracted for. There is no doubt the defendant had a meritorious case against Vitotherm, but it had no assets in North America and litigation in Europe held no practical prospect of net gain. In short, when the smoke cleared, there was only the plaintiff and the defendant.

ISSUES

I. Defendant's procedural objections

II. Plaintiff's claim in contract

III. Plaintiff's claim in negligence

IV. Causation

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V. Quantum of damages

VI. Is the plaintiff's claim pure economic loss?

VII. Limitation clause

I. DEFENDANT'S PROCEDURAL OBJECTIONS

[80] The defendant posits that I should not consider any of the expert evidence proffered by Mr. Simon Voogt. He is the expert in greenhouse tomato production whose evidence constitutes the foundation upon which the plaintiff's claim for lost production is built. The defendant argues that Mr. Voogt cannot be considered an independent expert. It grounds its complaint on an allegation of bias. It points out that Mr. Voogt had previously been employed by the plaintiff and at all material times has continued to be retained by the plaintiff as a crop consultant. The defendant also observes that roughly 50% of Mr. Voogt's current consultancy business emanates from his work with the plaintiff in both British Columbia and Ventura County.

[81] The defendant suggests I should reflect on the wisdom proffered in McWilliams, *Canadian Criminal Evidence*, Vol. 1, 4th ed., looseleaf, (Aurora: Canada Law Book, 2010) at pages 12-59 to 12-60 where the authors state:

> The importance of impartial expert opinion testimony cannot be overemphasized. The expert's evidence is permitted in the limited circumstances of a necessary exception to an exclusionary rule. Partial or biased evidence amounts to an abuse of the exceptional indulgence or opportunity to provide opinion testimony. This is so having especial regard to the limited effectiveness of cross-examination of an expert witness and, as discussed below, the contours of the hearsay exception relating to an expert's reliance in formulating an opinion on the facts, data or material not otherwise proven by admissible evidence at trial.
>
> Historically, the court called an expert witness to give evidence not as a witness for one side or the other and neutrality was assumed. With entrenchment of the adversary system, the

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> professional witness emerged called by one party or the other and "frequently" the courts have seen an unfortunate move away from the impartiality generally associated with professionals to the posture of an advocate.
>
> "Expertise and independence go hand in hand". Expert evidence prepared independently of a party is more capable of belief. An expert witness is not called as an advocate. Lack of independence, professional objectivity, and impartiality, even in the absence of dishonest bias, can contribute to miscarriages of justice. Unprincipled predisposition to a conclusion, partiality, and lack of independence threaten objectivity. A touchstone of reliability is impartiality.

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[82] I must respectfully dismiss the objection. While there is no question Mr. Voogt's sympathies lay with the plaintiff with whom he has had a lengthy and ongoing relationship, his evidence, particularly as it dealt with the minutiae of growing tomatoes in a greenhouse, was not marked by any animus toward the defendant, but rather the enthusiasm of an expert speaking to that which he knows so well. To the extent Mr. Voogt's testimony strayed into an area of questionable probative value, it is when he moves from growing tomatoes to statistical analysis. I have factored that into the weight attached to his evidence.

[83] I make the general observation that in my opinion all of the witnesses gave their testimony in a straightforward and matter-of-fact fashion. While some witnesses were obviously partisan, in origin, I sensed no conscious effort by them to prevaricate or equivocate. The testimony of all the witnesses was characterized by what I regarded as a straightforward articulation of the story as they knew it.

[84] I should note that each party invoked the spectre of *Murray v. Saskatoon (City) (No. 2)*, [1952] 2 D.L.R. 499 (Sask. C.A.). Each alleged that the other side did not call witnesses who could bring personal testimony bearing on important issues before the

Court. I attach no weight to those complaints. In my view, I heard from all of the relevant players in the story.

[85] The defendant also takes considerable umbrage at the manner in which the plaintiff's engineering experts, Mr. Nelson and Mr. Kaufmann, were prepared for their expert testimony. Both Mr. Nelson and Mr. Kaufmann had available to them all of the documents that have been disclosed in the action and apparently reviewed all of the transcripts of the examination for discovery, as well as the pleadings. Paras. 36 to 39 of the defendant's brief frame the debate:

> 36. The problem arises when an opinion is based on second-hand information that is not proven by admissible evidence. This problem affects the weight to be given to the opinion. The English Court of Appeal; in *R. v. Turner* [[1975] 1 All E.R. 70] stated:
>
> > 82 ...It is not for this Court to instruct psychiatrists how to draft their reports, but those who call psychiatrists as **witnesses should remember that the facts upon which they base their opinions must be proved by admissible evidence. this elementary principle is frequently overlooked**. (at page 73) [Emphasis added]
>
> 37. This language was adopted by the Supreme Court of Canada in *R. v. Abbey*. [[1983] 1 W.W.R. 251(S.C.C.)]
>
> 38. The Supreme Court of Canada ultimately found that there was no admissible evidence before it that could be the basis for the facts relied upon by an expert witness in forming his opinion. The following was concluded:
>
> > 52...While it is not questioned that medical experts are entitled to take into consideration all possible information in forming their opinions, this is no w ay [*sic*] removes from the party tendering such evidence the obligation of establishing, through properly admissible evidence, the factual basis on which such opinions are based. **Before any weight can be given to an expert's opinion, the facts upon which the opinion is based must be found to exist**. [Emphasis added]

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> 39. In *R. v. Howard* [[1989] 1 S.C.R. 1337 (S.C.C.)], the Supreme Court of Canada again addressed the issue of facts relied upon by an expert witness. This was a murder case, where footprints were found at the scene of the crime. The co-accused plead guilty and acknowledged that the footprint was his. At the trial of the other co-accused, the Crown sought to question the footprint expert as to whether they relied upon this fact. However, this fact was not going to become a fact adduced in evidence during the trial, nor was it a fact that could fairly be inferred from the facts in evidence. The majority of the court held that it was open to the Crown to put as a fact that which is not and will not become part of the case as admissible evidence. The court held that if an expert had failed to form his opinion on a proper scientific basis and had considered irrelevant matters, it certainly goes against the validity of that opinion, and stated as follows:
>
> > 25 Experts assist the trier of fact in reaching a conclusion by applying a particular scientific skill not shared by the judge or the jury to a set of facts and then by expressing an opinion as to what conclusions may be drawn as a result. Therefore, an expert cannot take into account facts that are not subject to his professional expert assessment, as they are irrelevant to his expert assessment; a fortiori, as injecting bias into the application of his expertise, **he should not be told of and asked to take into account such a fact that is corroborative of one of the alternatives he is asked to scientifically determine...** [Emphasis added]

[86] As I understand the defendant's argument, it asserts that an expert, to be properly prepared, should be given specific assumptions by the party tendering the expert and it is then incumbent on that party to prove those assumptions as part of its evidence in the trial. That process is unavailable, or becomes impossible, when the expert is given the opportunity to review all the documents, the discoveries in their entirety and the pleadings.

[87] The defendant argues that the preparation of Messrs. Nelson and Kaufmann grievously offends the normal procedural protocols for tendering expert evidence and, as

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a result, it objects to the admissibility of the entirety of their testimony. In essence, it asserts that Messrs. Nelson and Kaufmann present the Court with a reasonable apprehension of bias and have in many respects descended to the level of an advocate on behalf of the plaintiff.

[88] The plaintiff's counsel replies that the defendant's objection to the preparation of Messrs. Kaufmann and Nelson is unreasonable. He firstly points out that he, as counsel, does not have the technical expertise necessary to put specific hypotheticals to Messrs. Kaufmann and Nelson. In order to let them have a true understanding of the debate before them, he had to let them read the documents. If he had to pose specific questions to them, he would have been required to read the documents and he would have, by definition, then been selective about what he did or did not put to them. He thought the fairest approach was to let them see everything, including each party's case, as reflected in the pleadings.

[89] In the end, I am not prepared to say that the preparation of Messrs. Nelson and Kaufmann was so out of the ordinary as to render their evidence inadmissible. I will admit the evidence and assess each expert's opinion having regard to their manner of preparation. In sum, the evidence of Messrs. Nelson and Kaufmann will be admitted into evidence and accorded the weight their opinions warrant.

II. PLAINTIFF'S CLAIM IN CONTRACT

[90] To state the case in its simplest form, the plaintiff contracted for four boilers which would generate an input firing rate of 52.3 million BTUs per hour with less than 30 PPM Nox. The defendant agreed to deliver four such boilers. The boilers delivered by the defendant fell well short of those critical specifications. There was a breach of contract.

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[91] The plaintiff alleges that the defendant is subject to the implied obligations contained in *The Sale of Goods Act*, R.S.S. 1978, c. S-1 ("*The Sale of Goods Act*"). The debate over *The Sale of Goods Act* was engaged in the pleadings. The defendant's amended statement of defence and counterclaim sets out:

> 16. Saskatoon Boiler denies that there were any express or implied terms, warranties or conditions as alleged in paragraph 11 of the Amended Statement of Claim.
>
> 17. Saskatoon Boiler denies that *The Sale of Goods Act* or *The International Sale of Goods Act* has any application to the sale and purchase of the Boilers.
>
> 18. The only warranty provided by Saskatoon Boiler is the one set out in paragraph 4 of the terms and conditions attached to each proposal. That warranty provides as follows:
>
> > 'SASKATOON BOILER MFG. CO. LTD., agrees to repair or replace f.o.b. Saskatoon, Saskatchewan any workmanship or materials, which, within one (1) year from date of startup on site, shall prove to have been defective in material or workmanship, provided it is given prompt notification of the discovery of any such defects. SASKATOON BOILER MFG. CO. LTD. will not be responsible for repairs made without its consent nor shall it be held liable for damage or delays arising out of the repair or replacement of any such defective materials. This express warranty is in lieu of any implied warranties.'

[92] I take the defendant's pleading as asserting that para. 4 of the defendant's terms and conditions exclude the implied conditions of fitness for purpose and merchantable quality found in *The Sale of Goods Act*.

[93] I regard the law is well settled that in order to exclude the implied conditions of *The Sale of Goods Act*, the exclusion clause must expressly do so. (See: *Marshall v. Ryan Motors Ltd.* (1922), 15 Sask. L.R. 118 (C.A.); *Gregorio v. Intrans-Corp.* (1994), 18 O.R. (3d) 527 (C.A.); and *Hunter Engineering Co. v. Syncrude Canada*

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Ltd., [1989] 1 S.C.R. 426). The wording of paragraph 4 is equivocal. As a result, I find *The Sale of Goods Act*, and its implied conditions, is applicable.

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Fitness for purpose

[94] The plaintiff's expert engineer, Mr. Nelson, summarized the problems experienced by each boiler during the claim period in Exhibits P-207 and P-208. A summary of the problems is as follows:

- Boiler #1: During the first five years of operation (1996-2001), it required 60 major shutdowns due to firing problems, 76 shutdowns due to leaking tubes and 86 shutdowns for maintenance plus, on two occasions, required substantial rebuilding;

- Boiler #2: Installed in late December, 1997 and between then and late November, 2001 required 32 shutdowns for firing problems, 22 shutdowns for leaks and 30 shutdowns for maintenance and retubing;

- Boiler #3: Installed June, 1999. Between then and September, 2001 required 17 shutdowns for firing problems, 22 occasions to address leaking tubes, 32 occasions of tube replacements and 19 maintenance shutdowns;

- Boiler #4: Installed June, 1999. Between then and September, 2001 required 10 shutdowns for firing problems, 16 shutdowns for maintenance, 7 shutdowns for leaks and 4 occasions for tube replacements as well as fan motor problems.

[95] The narrative of the evidence is that the boilers were extremely high maintenance and chronic under-achievers. Their operation fell well short of any reasonable test for fitness of purpose. (See: L.G. Theall *et al.*, *Product Liability: Canadian Law & Practice*, looseleaf (Aurora: Canada Law Book, 2006); *Western Tractor Ltd. v. Dyck* (1969), 70 W.W.R. 215 (Sask. C.A.); *Hunter Engineering Co. v. Syncrude Canada Ltd.*, *supra*; and *Alcraft Industries Inc. v. Zeta Oilfield Rentals Ltd.*, 2000 SKQB 183, 192 Sask. R. 188).

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Merchantable quality

[96] In *Theall*, the test for establishing a breach for merchantable quality is set out at pages L4-14 to L4-15. The plaintiff must prove:

(i) The goods must be bought by description;

(ii) The goods must be bought from a seller who deals in goods of that description;

(iii) The goods must not be of merchantable quality; but

(iv) If the buyer has examined the goods, there is no implied condition as regards defects that such examination ought to have revealed.

[97] In *Theall*, the test for merchantable quality is summarized as follows at page L4-15:

> To be of merchantable quality, the goods must be "of such quality and in such condition that a reasonable man acting reasonably would after a full examination accept it under the circumstances of the case in performance of his offer to buy that article whether he buys for his own use or to sell again". Lord Wright added to this definition in *Grant v. Australian Knitting Mills, Ltd.*, noting that "merchantable does not mean that the thing is saleable in the

> market simply because it looks all right; it is not merchantable in that event if it has defects unfitting it for its only proper use but not apparent on ordinary examination".

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[98] The sad litany of operational problems established by the evidence more than meets the test of breach of the implied condition of merchantable quality.

Defences to claim in contract

[99] Interestingly, the defendant asserts it should be relieved of its contractual obligation respecting the 30 PPM Nox limit by reason of the doctrines of *Frustration*, *Impossibility* and *Estoppel*.

[100] It invokes *Frustration* and *Impossibility* on the premise that unbeknownst to the parties, the 30PPM Nox limit could not be met with an input firing rate of 52,300,000 BTUs/hr. The defendant points to *Naylor Group Inc. v. Ellis-Don Construction Ltd*., 2001 SCC 58, [2001] 2 S.C.R. 943 where the Supreme Court, at paras. 53 to 55, states:

> [53] Frustration occurs when a situation has arisen for which the parties made no provision in the contract and performance of the contract becomes "a thing radically different from that which was undertaken by the contract": *Peter Kiewit Sons' Co. v. Eakins Construction Ltd.*, [1960] S.C.R. 361, per Judson J., at p. 368, quoting *Davis Contractors Ltd. v. Fareham Urban District Council*, [1956] A.C. 696 (H.L.), at p. 729.
>
> [54] Earlier cases of "frustration" proceeded on an "implied term" theory. The court was to ask itself a hypothetical question: if the contracting parties, as reasonable people, had contemplated the supervening event at the time of contracting, would they have agreed that it would put the contract to an end? The implied term theory is now largely rejected because of its reliance on fiction and imputation.
>
> [55] More recent case law, including *Peter Kiewit*, adopts a more candid approach. The court is asked to intervene, not to enforce

> some fictional intention imputed to the parties, but to relieve the parties of their bargain because a supervening event (the OLRB decision) has occurred without the fault of either party....

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[101] The defendant says that neither the plaintiff nor it anticipated that Vitotherm would not live up to its obligations. Thus, the contract is frustrated and the defendant is relieved of its obligation. In my view, that reasoning goes too far. The doctrine of *Frustration* cannot be contorted so as to relieve the defendant of its duty to ensure the quality and performance of the component parts of the product it has contracted to deliver.

[102] As to the doctrine of *Impossibility*, the defendant cites the old English case of *R. v. Saxe* (1921), 21 Ex. C.R. 60 for the principle that if contractual terms are found to be impossible to fulfill, a breach of the impossible term will not ground a breach of contract action. The defendant maintains that I should draw an inference that it was impossible for anyone to meet the 30 PPM Nox stricture with an input firing rate of 52.3 million BTUs/hr. I observe the defendant advances that argument on evidence which is, at best, a thin reed.

[103] The plaintiff replies that to the extent there was evidence on this point, it was to be found in Exhibit P-57, the letter by the defendant, Mr. Graves, to Vitotherm. In it, he outlined a three-step roadmap to solving the problems. The plaintiff suggests that is the full and complete answer to the allegation of *Impossibility*. More to the point, separate and apart from Exhibit P-57, to the extent the defendant advanced evidence, it is of insufficient probative value to successfully ground the doctrine of *Impossibility*.

[104] As to estoppel, the Supreme Court has provided guidance as to the test for same. In *Ryan v. Moore*, [2005] 2 S.C.R. 53, the Court opined at para. 59:

> 59 This Court is not bound by any of the above analytical frameworks. After having reviewed the jurisprudence in the United Kingdom and Canada as well as academic comments on the subject, I am of the view that the following criteria form the basis of the doctrine of estoppel by convention:
>
> (1) The parties' dealings must have been based on a shared assumption of fact or law: estoppel requires manifest representation by statement or conduct creating a mutual assumption. Nevertheless, estoppel can arise out of silence (impliedly).
>
> (2) A party must have conducted itself, i.e. acted, in reliance on such shared assumption, its actions resulting in a change of its legal position.
>
> (3) It must also be unjust or unfair to allow one of the parties to resile or depart from the common assumption. The party seeking to establish estoppel therefore has to prove that detriment will be suffered if the other party is allowed to resile from the assumption since there has been a change from the presumed position.

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[105] There was no manifestation by the plaintiff to the defendant of anything other than it expected, albeit eventually, contractual compliance with the 30 PPM Nox limit. In addition, the defendant did not act in reliance on any such representation and in fact continued to the end to hope for, with the assistance of Vitotherm, its eventual compliance with the contractual specifications. In short, estoppel does not arise.

III. PLAINTIFF'S CLAIM IN NEGLIGENCE

[106] The elements required for a claim in negligence are well known, namely:

(i) existence of a duty of care;

(ii) breach of that duty; and

(iii) damages caused by the breach of duty.

[107] The Supreme Court has, in two cases, *Odhavji Estate v. Woodhouse*, [2003] 3 S.C.R. 263 and *Cooper v. Hobart*, [2001] 3 S.C.R. 537 articulated what was required to establish a duty of care, namely:

> (i) that the harm complained of is reasonably foreseeable;
>
> (ii) that a relationship of "sufficient proximity" exists between the parties; and
>
> (iii) there is no policy reason to restrict the duty.

[108] Foreseeability is not an issue. The plaintiff's correspondence to Vitotherm of May 29, 1997 (P-25) acknowledged that disruption of the boilers can cause significant damages to the plaintiff.

[109] There was sufficient proximity. The defendant had expertise and the plaintiff relied on same. The nature of the relationship was such that a duty of care arose.

[110] It is well settled that a manufacturer is responsible for its product, including components sourced from third parties. The Supreme Court of Ontario set out the law in *Farro et al* v. *Nutone Electrical Ltd. et al* (1990), 68 D.L.R. (4th) 268 (Ont. S.C.) at para. 11 and 12:

> [11] A manufacturer has a duty to take reasonable care in the manufacture of his product, including all its component parts, and failure to take such reasonable care can result in liability to the ultimate user or consumer.
>
> [12] In *Charlesworth on Negligence*, 5th ed., at p. 394, paras. 631-2, the following appears:
>
> > 'The duty of the manufacturer may be said to be to take reasonable care in the manufacture of his product, and failure to take such care will render him liable to any consumer or user whose person or property is injured by his product,

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> provided (1) the product causing the injury has the same defect as it had when it left the manufacturer; and (2) the manufacturer should have contemplated that the product would be consumed or used in the same condition as it was in when it left him.
>
> Component parts. A manufacturer's duty is not limited to those parts of his product which he makes himself. It extends to component parts, supplied by his submanufacturers or others, which he uses in the manufacture of his own products. He must take reasonable care, by inspection or otherwise, to see that those parts can properly be used to put his product in a condition in which it can be safely used or consumed in the contemplated manner by the ultimate user or consumer.'
>
> The last proposition is based on *Macpherson v. Buick Motor Co.*, 217 N.Y. 382 (1916), referred to with approval by Lords Atkin and MacMillan in *Donoghue v. Stevenson*, [1932] A.C. 562 (H.L.).

[111] The defendant's sanguine acceptance from Vitotherm that its burners would perform at the contracted specifications was regrettable, and more to the point, a breach of its duty. Basic testing of a prototype would have been a logical step before offering the product for sale. That was not done and in due course bemoaned. In Exhibit P-57, the defendant's principal, Mr. Graves, complained that the burner provided by Vitotherm was demonstrably undersized for the BTU rating required.

[112] To the extent the defendant did do testing, for the purpose of the *Factory Inspection and Fire Test Report* on each boiler, each time those tests were undertaken the boiler fell short of the contracted specifications. The plaintiff even brought the failure to perform to the attention of Vitotherm when it placed the second and third orders. Nonetheless, the defendant proceeded to manufacture the boiler with the problematic burners and deliver same to the plaintiff in purported compliance with the contract.

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[113] From the beginning, there were obvious and troubling performance problems with the boiler. To a certain extent, the defendant evidenced an element of cognitive dissonance. The boilers performed at less than contracted rating but the defendant, nonetheless, proceeded to deliver same to the plaintiff. I accept that Mr. Graves, at all times, was hopeful, if not confident, that Vitotherm would deliver an "in-the-field" fix. It was not to be.

[114] In sum, there was a duty and it was breached. The plaintiff's case in negligence is made out.

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IV. CAUSATION

[115] It is incumbent upon the plaintiff to establish a causal link between a breach of contract or tortious negligence and the damages suffered by the plaintiff. The plaintiff's brief sets out the legal principles of causation engaged in this case.

[116] At pages 69 and 70 of the brief (paras. 189 to 192), the plaintiff articulates:

> 189. Houwelings acknowledges that the "but for" test for determining causation is applicable in the case at bar: *Hanke v. Resurfice Corp.*, [2007] 1 S.C.R. 333 at paras. 18-29. The "but for" test requires Houwelings to establish that the damages it claims would not have occurred but for SB's tortious conduct: *Athey v. Leonati*, [1996] 3 S.C.R. 458 ("*Athey*") at paras. 12-14. Houwelings submits that this test and the principles enunciated below apply equally to its claims in tort and breach of contract (discussed in more detail below).
>
> 190. General principles relating to causation in tort are well established in the jurisprudence and can be briefly summarized as follows:
>
> (a) The test for causation is not to be applied too rigidly: *Athey* at para. 16.
>
> (b) Causation is "essentially a practical question of fact which can best be answered by ordinary common sense": *Athey* at para. 16, citing Lord Salmon in *Alphacell Ltd. v. Woodward*, [1972] 2 All E.R. 475 at 490 (H.L.) and Sopinka J. in *Snell v. Farrell*, [1990] 2 S.C.R. 311 ("*Snell*") at 328.
>
> (c) Causation need not be determined by scientific precision: *Athey* at para. 16, *Snell* at para. 30.
>
> (d) A court can determine causation as a result of "circumstantial proof, based on experience and common sense": [L.N. Klar, *Tort Law*, 4th ed. (Toronto: Thomson Carswell, 2008] at 566.
>
> (e) Applying the common sense approach, a court can draw an inference of causation based on the evidence available to it, including competing expert evidence: *Richards v.*

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McDonald's Restaurants of Canada, 2008 SKCA 140 at paras. 5-17.

(f) It is not required to establish that a defendant's tortious conduct was the sole cause of the plaintiff's injury: *Athey* at para. 17. Rather, "[t]here will always in fact be other necessary causes that were conditions of the injury occurring. Defendants whose acts were necessary parts of the causal sequence will be fully liable for the injuries": Klar at 434. Thus, "[i]f the defendant's conduct is found to be a cause of the injury", causation is established: *Athey* at para. 12.

191. Similar principles apply in the context of a claim for breach of contract. As stated in H.G. Beale, ed., *Chitty on Contracts*, 30th ed. (London: Sweet & Maxwell, 208) at para. 26-032 (and footnote 196):

> '... there must be a causal connection between the defendant's beach of contract and the claimant's loss. The claimant may recover damages for a loss only where the breach of contract was the "effective" or "dominant" cause of that loss. [The breach of contract need not be the sole cause ...]. The courts have avoided laying down any formal tests of causation: they have relied on common sense to guide decisions as to whether a breach of contract is a sufficiently substantial cause of the claimant's loss. The answer to whether the breach was the cause of the loss or merely the occasion for the loss must "in the end" depend on "the court's commonsense" in interpreting the facts.'

192. This passage was cited with approval in *Hi-Alta Capital Inc. v. Montreal Trust Company of Canada*, 2004 ABQB 687 at para. 41, affirmed 2007 ABCA 252....

[Emphasis added]

[117] I agree with the plaintiff's contention that I do not have to grapple with the distinction between tort and breach of contract when dealing with causation. On either basis the evidence leads to the inexorable conclusion that the chronic under-performance or periodic non-performance of the four boilers impacted the plaintiff's greenhouse

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operation and specifically negatively affected plant production as well as maintenance costs, production of CO2 and consumption of natural gas.

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[118] The narrative of the evidence clearly establishes a cause and effect. Translating that into actual dollars lost is much more difficult.

Other potential causes

[119] Defendant's counsel was thorough and effective in demonstrating in both cross-examination and adducing evidence-in-chief, that in the context of the plaintiff's operation, many challenges and issues were in play. His strategy was clearly aimed at raising questions respecting the other elements that were impacting operationally upon the plaintiff's greenhouse. The defendant suggests that the Priva software may have been the issue; the Kara design was inadequate; the water problems were unrelenting.

[120] In my view, the evidence does not establish negligence or breach of contract by any other party. To be certain, as previously noted, there are many perils that beset a commercial greenhouse that can affect production. My analysis focusses simply on the damages suffered by the plaintiff "but for" the breach of contract or the tortious conduct of the defendant.

[121] I add, parenthetically, that even if it could be said other parties contributed to the plaintiff's loss, that is not an answer for the defendant. In *Athey v. Leonati*, [1996] 3 S.C.R. 458, the Supreme Court opined at para. 12:

> [12] The respondents' position is that where a loss is created by tortious and non-tortious causes, it is possible to apportion the loss according to the degree of causation. This is contrary to well-established principles. It has long been established that a defendant is liable for any injuries caused or contributed to by his or her negligence. If the defendant's conduct is found to be a cause of the injury, the presence of other non-tortious

> contributing causes does not reduce the extent of the defendant's liability.
>
> [Emphasis added]

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[122] A tortfeasor who is only partially responsible is not without remedy. As noted in *Veridian Inc. v. Dresser Canada Inc.*, 1999 ABQB 415, 247 A.R. 23 at paras. 26 and 27:

> [26] At common law a Plaintiff can recover all its loss from any tort-feasor whose tort caused any portion of the loss. Though there might be several tort-feasors who have contributed to the loss, the plaintiff can recover the whole loss from any one of them. This rule of common law has not been modified by statute. It is presently in force.
>
> [27] Also at common law, the tort-feasor from whom the plaintiff recovered its loss could not recover contribution from tort-feasors who had contributed to the loss but had not been sued by the plaintiff. This common law rule is no longer in force. It has been replaced in Alberta by *The Contributory Negligence Act*, s. 2 and *The Tort-Feasors Act*, s. 3(1)(c): ...

[123] In this jurisdiction, the situation is similar. *The Contributory Negligence Act*, R.S.S. 1978, c. C-31 provides, at s. 3(2):

> 3(2) Subject to section 3.1, if two or more persons are found at fault, they shall be jointly and severally liable to the person suffering damage or loss, but as between themselves, in the absence of a contract, express or implied, they are liable to make contribution to and indemnify each other in the degree in which they are respectively found to have been at fault.

[124] In terms of damages, the Court's focus will be on the losses suffered by the plaintiff arising from the breach of contract and negligence of the defendant. This is the most intractable aspect of the contest between the parties.

V. QUANTUM OF DAMAGES

Lost production

[125] The bulk of the plaintiff's claim is referable to the production it says it lost due to the chronic under-performance of the boilers. Specifically, there were times throughout the year, primarily in the winter, where the boilers would not generate sufficient heat in the greenhouses in order to allow the anticipated production level of the tomato plants. The plaintiff seeks compensation for that lost production.

[126] The plaintiff's records were incomplete as a result of a major computer crash it experienced some years ago. In short, it cannot say that on a given night or early morning the greenhouse temperature was "X" degrees Celsius cooler than it should have been for "Y" hours or minutes.

[127] What the plaintiff does have is extensive documentation addressing the inability of the boilers to fire at their rated capacity, buttressed by the testimony of Casey Houweling, chief grower Martin Weijters, and the plaintiff's consultant Simon Voogt. Each of those witnesses credibly averred to the fact that on many occasions they were unable to reach the desired 24-hour temperature in the greenhouse which, from their experience, they are certain negatively affected truss development.

[128] The truss is that portion of the tomato plant which grows and flowers and the flowers then turn into tomato fruit, eventually to be harvested. Part of the grower's job is to ensure that the truss grows at the proper speed, as the development of the trusses directly impacts the development of the fruit and the ensuing harvest.

[129] Mr. Voogt's report of May 20, 2008 (P-181), addressed the lost production of three types of tomatoes: Rhapsody Beefsteak, Tomatoes on the Vine (TOV) and Compari. It should be noted that he had no independent analysis with respect to Compari

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tomatoes but simply opined that in his experience the lost production would be the same as TOV.

[130] At trial, Mr. Voogt's evidence as to loss of truss speed varied somewhat from his written report (P-181). As I took his evidence, the loss suffered for TOV was 1.6 trusses per stem, for Rhapsody Beefsteak the loss was 1.68 trusses per stem and for Compari the range of loss was 1.5 to 1.8 trusses per stem.

[131] The loss of production as calculated by Mr. Voogt was then converted to a loss of kilograms per metre squared. From Mr. Voogt's basic production assumptions, the plaintiff then proffered Sarah Jones, an accountant with extensive experience in the tomato industry, specifically with the plaintiff. She then extrapolated that loss of production per metre squared into annual revenue amounts (calculated in Canadian dollars) during the claim period of September, 1996 to December, 2001. Those numbers were then reviewed and further refined by Mr. D.J. Harder, a forensic accountant from Deloitte, to reach the current claim for loss or reduced yield of $10,403,735 (Cdn.).

[132] The plaintiff also tendered (as Exhibit P-255) a grid where alternate dollar amounts for lost production could be calculated if the Court wished to depart from Mr. Voogt's estimated lost truss speed. As part of that grid, and included in Mr. Voogt's lost production analysis, was an estimate of the loss experienced by the plaintiff due to botrytis infection.

[133] Botrytis is a fungus that can affect many plants, including tomatoes. It was clear from all of the evidence that botrytis is always a problem in a commercial tomato greenhouse setting. However, Mr. Voogt opined that the incidence of botrytis is increased if there are problems controlling humidity. Humidity can create conditions for botrytis to thrive. In his report (P-181), Mr. Voogt does not spend a lengthy time dealing with botrytis but does allow:

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> In my experience, where there is less than optimal control of climate, because of an inadequate heating system, there is always an increase in botrytis. During the winter 2000-2001 at [the Oxnard facility] we lost at least 10% of the plants as a result of this fungus.

From that observation, the plaintiff extrapolated a loss due to botrytis during the claim period of $3,493,822 (Cdn.), being a component of the overall production loss claim of $10,403,735 and is evidenced in Exhibit P-255.

[134] It is interesting to note that Exhibit P-255 reflects that in Mr. Voogt's analysis, the loss from botrytis was a constant, regardless of the quantum of reduced production from loss of truss speed. In short, he maintained that the botrytis loss was always $3,493,082 irrespective of the amount of lost production. In my view, that is counterintuitive and is yet another concern I have with the statistical analysis of Mr. Voogt.

[135] There was considerable debate between the parties and their respective experts as to how to deal with the conversion of currency.

[136] Suffice it to say, the plaintiff's approach to currency conversion is complex and labour intensive. I prefer the analysis of the defendant's forensic accountant, Mr. Kevin Copeland. He opined that there was no evidence that it was necessary on a routine basis for the plaintiff to convert its revenue to Canadian dollars. I prefer that simple approach. It appears to me the only reason to convert to Canadian dollars is for the purpose of determining a judgment in a currency consonant with this jurisdiction.

[137] As noted, the linchpin of the plaintiff's production claim is Mr. Voogt's analysis. While it was clear from both his chief and cross-examination that Mr. Voogt is

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an expert with respect to the greenhouse production of tomatoes, I conclude that he is not an expert in terms of statistical analysis or methodology.

[138] The forensic accountant called by the defendant, Mr. Copeland, opined that Simon Voogt's analysis was based on a very small data sample. I agree with that conclusion. He also noted in his report (D-199) at para. 34(b) the [Voogt report] contained no analysis of actual production volumes. Losses were claimed for each week in the winter cycle, regardless of actual production during that week. I, again, agree with that caution respecting Mr. Voogt's analysis.

[139] The tomato greenhouse expert proffered by the defendant, Dr. M. Mirza, was critical of Mr. Voogt's statistical analysis in the following fashion (at page 18 of D-182):

> Mr. Voogt has made his yield calculations purely on theoretical basis. In the actual yield data provided by [the plaintiff], highly variable yields have been documented based on varieties and many other factors like inter-cropping [constant cropping] which are discussed later in this report.

Then at page 19, he opines:

> In my opinion, the theoretical yields are just calculation for cash flow projection purposes. The actual yields are different based on several crop management factors and outside climate conditions.

[140] Dr. Mirza, at page 3 of his report, also reiterated Mr. Copeland's observation that the total number of plants used by Mr. Voogt for data collection was a very small sample.

[141] The arc of Dr. Mirza's testimony was that it is impossible, and arguably foolish, to attempt to calculate lost production by reason only of under-performance of

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the boilers. A tomato plant in a commercial greenhouse context is an integrated unit. There are numerous factors impacting on its production, as he observed at page 11: "Hence, maintaining a balanced plant growth is a juggling act."

[142] Dr. Mirza's observations were consistent with the testimony of Casey Houweling, Martin Weijters and Simon Voogt. The one constant in the evidence of both sides of the litigation debate was that operators of a commercial greenhouse tomato production facility face a host of vicissitudes.

[143] I accept from the evidence that the major factors impacting plant production are light, heat and water. The latter two can be controlled by the operator. An incomplete list of other issues are:

- Santa Ana winds – very dry winds blow through and can affect the level of humidity in the greenhouse;
- Whitefly virus or tic virus;
- Mildew;
- Pythium – a fungus;
- Botrytis – a fungus;
- Insects and caterpillars of various types and kinds;
- Polyvirus spread by tools used by workers in the greenhouses;
- the application of CO2 – either too much or too little can negatively impact on production; and
- Humidity levels.

[144] Dr. Mirza, in addressing Simon Voogt's report, in effect said that there were many major issues facing the plaintiff's Oxnard facility and it would be wrong to focus on the under-performance of the boilers as the only cause of lost production claimed by the plaintiff.

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[145] While I accept the various criticisms of Simon Voogt's statistical analysis including his theoretical conclusion respecting boiler issues resulting in a specified kilogram per square metre loss, I nonetheless accept the overarching contention that throughout the winters of the claim period the boilers' inability to reach rated capacity of BTUs/hr. did result in lower temperatures than was desired by the grower, Martin Weijters, or Simon Voogt.

[146] I further accept the overarching allegation that the chronic under-performance of the boilers was a causal factor in lost production. I further agree with the plaintiff's proposition that the boilers' failure to perform also contributed to conditions which increased the presence of botrytis and thus resulted in further lost production.

[147] Where I depart from the plaintiff is the quantum of lost production generated through the various assumptions and calculations made by the sequence of Simon Voogt, Sarah Jones and Deloitte.

[148] Accordingly, I agree that the plaintiff suffered loss because of the failure by the defendant to deliver four boilers which could perform at the rated capacity for which it had contracted. However, I do not accept that the plaintiff suffered resulting damages of $10,403,735 (Cdn.) or anything close to that amount.

[149] It is well settled that simply because damages are difficult to calculate, that does not mean the Court should avoid its obligation to do so. As stated by Davies J. in *Wood v. Grand Valley Railway Co.* (1915), 51 S.C.R. 283 at para. 13, and reiterated by the Supreme Court in *Penvidic Contracting Co. v. International Nickel Co. of Canada Ltd.*, [1976] 1 S.C.R. 267 at para. 23:

> It was clearly impossible under the facts of that case to estimate with anything approaching to mathematical accuracy the damages sustained by the plaintiffs, but it seems to me to be clearly laid

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> down there by the learned judges that such an impossibility cannot "relieve the wrongdoer of the necessity of paying damages for his breach of contract" and that on the other hand the tribunal to estimate them whether jury or judge must under such circumstances do "the best it can" and its conclusion will not be set aside even if the amount of the verdict is a matter of guess work.

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[150] The above proposition is reiterated by S.M. Waddams in *The Law of Damages,* 2nd ed., looseleaf, (Toronto: Canada Law Book, 2009) at para. 13.30:

> In Anglo-Canadian law ... the courts have consistently held that if the plaintiff establishes that a loss has probably been suffered, the difficulty of determining the amount of it can never excuse the wrongdoer from paying damages. If the amount is difficult to estimate, the tribunal must simply do its best on the material available....

[151] The defendant assertively joins issue with the plaintiff respecting what it characterizes as a failure by the plaintiff to advance probative evidence on the issue of insufficient heat. Respectfully, I reject that contention. The evidence was clear and persuasive that "but for" the problems with the boilers generating consistent heat, the plaintiff would have enjoyed greater tomato production.

[152] As to the issue of the boilers' inability to operate within the contractual stricture of 30 PPM Nox, the facts are clear – they did not. However, that fact is only an issue in grappling with the damages on boiler replacement. It does not form part of the analysis on the other heads of damages.

[153] Exhibit D-200 was the defendant's forensic accountant's final report, with final adjustments. As previously noted, it was presented in American dollars which I believe is the appropriate calculation from which to make the base analysis of damages.

For the reasons detailed in Exhibits D-199 and D-200, Mr. Copeland departed from the analysis advanced by Deloitte respecting reduced yield.

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[154] Although departing from the full analysis advanced in the Deloitte report (P-252 and P-253), Mr. Copeland calculated the yield loss relying on the assumptions from Mr. Voogt's report (P-181). For the reasons outlined in Mr. Copeland's report, I prefer his analysis respecting yield loss based on Mr. Voogt's reports. It must be noted that Mr. Copeland provided a very specific caveat, namely (at page 3 of D-200):

> As discussed in the Original Report, Deloitte relied on assumptions derived from the report of Mr. Voogt dated May 20, 2008. We expressed concerns with the assumptions and those concerns remain. If it is determined that these assumptions are not a reasonable basis for calculating the yield losses, then the amounts calculated by Deloitte, and in turn revised by us, may be significantly different than the true financial damages suffered by [the plaintiff].

[155] In US dollars, Mr. Copeland calculated the loss from reduced yield (based on Mr. Voogt's assumptions) to be $4,516,905 as opposed to the Deloitte analysis which calculated the claim at $7,035,733.

[156] As previously articulated, I am uncomfortable with the statistical analysis and methodology employed by Simon Voogt which was the genesis of the calculation of damages both of Deloitte and Mr. Copeland. It follows that even if I accept Mr. Copeland's analysis, the actual damages for the purpose of this litigation must be less, including that portion of the damages ascribed to production loss due to botrytis.

[157] I concede there is an element of speculation in this. I am convinced that the plaintiff experienced loss of production as a result of the four boilers not being able to meet their rated capacity. More to the point, the weight of the evidence leads inextricably

to this conclusion. I also conclude that that loss should be less than that which is calculated using the assumptions of Simon Voogt.

[158] In relation to quantum, I am drawn to the reasoning in Mr. Copeland's report (D-200). Using Mr. Voogt's assumptions, he reckons the loss at $4,516,905 (USD). However, in my view, that figure must be moderated as it is grounded upon the evidence of Mr. Voogt and his report (P-181). As stated, I have found fault with that analysis and methodology.

[159] In my view, a reduction of one-third of the damages calculation in Mr. Copeland's report (D-200) would properly adjust for the sundry concerns and deficiencies in the plaintiff's evidence respecting lost production. In the end, I determine for the purposes of this litigation that the plaintiff's loss from reduced yield (including loss from botrytis) was $3,000,000 (USD).

Increased maintenance costs

[160] The plaintiff maintains that the constant deficiency in the boilers' operation resulted in exceptional maintenance, the costs of which it is entitled to recover from the defendant. The plaintiff grounds its claim from the report of its expert engineer, Mr. Nelson (P-209) and the ensuing financial analysis of Deloitte (P-252). The crux of that evidence is that the plaintiff lost $192,413 (USD) with a conversion to Canadian and pre-judgment interest calculated to December 31, 2009 is $384,477 (Cdn.).

[161] For the reasons previously articulated, I will simply focus on the USD amount. The evidence of exceptional maintenance was copious and cogent. The plaintiff is entitled to recover damages. The issue, as always, is quantum.

[162] The plaintiff called Mr. Nelson and Mr. Kaufmann, engineers who reviewed in some detail the unrelenting nature of the operational ills presented by the four

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boilers. The essence of the plaintiff's complaint respecting excessive maintenance is found at page 12 of Deloitte's report (P-252) which outlines:

> During the loss period, Houweling experienced numerous operating problems with the Boilers and Vitotherm burners. Issues included but were not limited to, firing problems of the burners, unsustainable maximum heating output, tube crack and leakage, inability of meeting NOx requirements and prolonged shutdowns caused by repairs. Despite ongoing efforts to remedy these problems, success was usually short lived as new problems would arise shortly after each repair task.
>
> As a result of the technical problems encountered, Houweling was forced to interrupt the Boilers' operations in order to schedule maintenance and repairs throughout the Damage Period. In total, there were 496 cases of major shutdowns recorded from September 1996 to September 2001, of which 159 shutdowns were related to maintenance, 197 shutdowns for tube repairs and 140 shutdowns for firing problems. Based on the total number of service years provided by the Boilers, this equates to approximately 38 shutdowns per year for each of the Boilers....

[163] The thrust of the defendant's answer to their allegations is that excessive maintenance costs have many causes – not simply the problematic BTU input firing rate.

[164] Stewart Wood, of Hallwood and Associates, the contractor retained by the defendant for assistance in boiler operation, testified that, in large part, water treatment, rather than design, was at the core of many of the plaintiff's maintenance issues. Arthur Hawman, an expert in boiler operation, testified that from his perspective the absence of a dedicated boiler maintenance operator was at the root of many of the operational difficulties faced by the plaintiff. Greg Chapman, who runs a boiler contractor service, agreed that maintenance and water treatment issues could be seen as the genesis of the excessive maintenance work faced by the plaintiff. In fairness, Mr. Chapman did allow that he did not completely embrace the boiler design of the defendant.

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[165] Rick Smith, another expert in boilers, pointed the finger of fault at the design characteristics of the entire heating system, which was Kara's obligation. In his view, Priva and its software interface with the boiler was at the root of much of the problems experienced by the plaintiff.

[166] I conclude that the evidence does not support the contention that the design of the defendant's boiler was somehow inadequate. The fact that different operators in the field might approach the design differently does not in any way detract from the reality that the defendant's boilers worked well in British Columbia and worked well in Oxnard once the impugned Vitotherm burners were replaced with standard Puripher burners.

[167] I also conclude that the inconsistent heat which was characteristic of the boilers when using the Vitotherm burners impacted negatively on all aspects of the heating system and the interface with the Priva computer software. The absence of consistent heat with sufficient BTU input rate precluded normal trouble-free operation.

[168] Having made those observations, I am still unable to attribute 100% of the excessive maintenance costs to the Vitotherm burners' negative impact on boiler operation.

[169] There is a natural learning curve to any operation as sophisticated and complex as Houweling Nurseries in Oxnard. The multiplicity of factors impacting operation contribute to significant adjustments and/or maintenance being made in the initial stages of operation. Finding the right formula for the proper water quality through the burner was important and was not a problem solved immediately. Similarly, the interaction of Priva software and adjustments to the Kara heating system during the commissioning portion at the front end of the claim period would have, in my view, contributed to some additional maintenance costs.

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[170] I determine, employing the "but for" test, that of the additional maintenance costs identified by Mr. Nelson and quantified by Deloitte, it would be reasonable to attribute 75% to the Vitotherm burners and perforce, to the defendant. The plaintiff's claim under that head of loss is therefore set at $144,310 (USD).

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Loss from excessive CO2 and natural gas consumption

[171] The plaintiff alleges that as a result of the boilers' uneven performance and inability to operate at rated capacity, it was required to purchase and consume more natural gas than it otherwise would. The plaintiff claims that the defendant is responsible for that extra expense. Additionally, the same problems with the boilers meant the plaintiff was unable to produce as much CO2 that it otherwise could have. As a result, it had to purchase CO2. It asserts the defendant is liable for that extra expense. Page 16 of Deloitte's report (P-252) provides a neat summary of the plaintiff's reasoning:

> **Excessive Natural Gas Consumption**
>
> Natural gas is one of the main input variables of Houweling's operations as it is used by the burners to heat the hot water boilers. All else being equal, the amount of natural gas consumed is proportional to the amount of heat generated by the burners. However, the Vitotherm burners Houweling acquired from Saskatoon Boiler were unable to sustain the natural gas input capacity required to optimally operate the Boilers. This inefficiency resulted in excess consumption in natural gas for Houweling than normally expected throughout the loss period.
>
> **CO_2 Dosing**
>
> CO_2, a by-product produced through the burning of natural gas, is produced by hot water boilers used in a greenhouse facility. Although CO_2 emission is generally considered harmful, it is a very useful ingredient consumed in plant growth through artificial CO_2 dosing.
>
> CO_2 dosing is the process by which CO_2, an essential component of photosynthesis for green plants, is released into the atmosphere of a greenhouse to enhance plant growth. Since photosynthesis

> also requires sun light, CO_2 dosing is only effective during the day.
>
> CO_2 dosing was used by Houweling throughout the loss period.
>
> **Excessive CO_2 Consumption**
>
> Since its initial implementation, Houweling has used their internally generated CO_2 to supply its CO_2 dosing. Although the internally generated CO_2 is insufficient to fully supply Houweling's CO_2 dosing process, it allowed for more efficient cost control as the cost of recycling CO_2 emission is less expensive than the cost of purchasing CO_2 from external sources.
>
> Note that Houweling's cost saving scheme was achieved during the winter cycle only. As the daytime outdoor temperature was adequate throughout the summer cycle, demand for the Boilers was minimal. Consequently the Boilers produced very little CO_2 during the daytime hours of the summer cycle, preventing Houweling from using internally produced CO_2 for its CO_2 dosing process. Conversely, daytime demand for the Boilers was much higher during the winter cycle. As a result Houweling was able to save on CO_2 costs during its winter cycle when the Boilers were fully utilized.
>
> However, as a result of the Boiler inefficiencies, the amount of actual CO_2 emission produced by the Boilers was substantially reduced. The deficient CO_2 production caused Houweling to increase its CO_2 purchases from external sources even during the winter cycle.

[172] In Deloitte's original analysis, the loss to the plaintiff respecting CO2 and natural gas was calculated at $1,697,585 USD. Converted to Canadian and applying the Saskatchewan pre-judgment interest rate calculated to December 31, 2008, the plaintiff calculates its claim against the defendant under this rubric of damage at $3,675,972.

[173] Mr. Copeland, on behalf of the defendant, had occasion to criticize some of the methodologies in Deloitte's calculation. In its final report (P-253) Deloitte, having considered Mr. Copeland's observations, modified its calculation for natural gas and CO2

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losses at $1,372,132 USD. Converted to Canadian and applying pre-judgment interest to December 31, 2009, resulted in a revised claim under this heading of $2,682,452.

[174] Mr. Copeland, in his report, D-199, starting at para. 48, embarked on an alternative analysis. He calculated the additional natural gas and CO2 costs at $820,268, broken down as follows:

Increased natural gas cost	$517,497 (USD)
Increased CO2 cost	$302,771 (USD)

[175] I prefer the analysis proffered by Mr. Copeland. One important reason is that the assumption embraced by Deloitte which was that the increase in costs was 15% of the total expended on natural gas and CO2 was based on what was said to be the plaintiff's management's "best assessment". Quite frankly, its assessment had all the badges of a "best guess" rather than a figure arising from empirical investigation.

[176] I find that it would be reasonable to adopt the more conservative and arguably more precise analysis tendered by Mr. Copeland. In sum, the plaintiff shall have judgment against the defendant for increased costs respecting natural gas and CO2 as outlined at Table D of Mr. Copeland's Exhibit D-200, being $820,268 (USD).

Replacement of boilers

[177] There is no argument that during the claim period the boilers were high maintenance and operationally problematic. However, much improved after the conversion to Puripher heads in 2001. The boilers were still in use at the date of trial. Notwithstanding that fact, the plaintiff asserts that, on the balance of probabilities, there is only one conclusion, namely, that the boilers require immediate replacement.

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[178] The plaintiff's engineer, Allan Nelson, provided a report (P-209) which addressed not only the high maintenance costs of the boilers but the life expectancy of same. Mr. Nelson opined at page 6:

> As we review the operation of the boilers as outlined in this report, it is our opinion that at the end of 5 years the boilers reached the economical end of their life under the service of Houweling Oxnard. These boilers have now functioned for a period of approximately 8 and 10 years and are, in fact, still in service. However, the frequency and cost of maintenance is continually rising and it is our opinion that the Morrison tube and tube sheets in the boilers have basically reached the end of their life and the boilers could catastrophically fail at any time. The boilers may well remain in service for an additional 5 to 10 years. However, the maintenance shutdowns, the frequency of rebuild and the extent of rebuild will continue to escalate, and operating costs will rise. This could force Houweling to undertake replacement at any time.
>
> It is clear from the inspection that the Saskatoon boilers currently in service may continue for some extended period of time. However, when we look at the analysis of maintenance cost and consider that the Morrison tube, front and rear tube sheets that have had major failures; we may expect to have major failure at any time during the critical season. The boilers are no longer dependable or economical to remain in service. It is our opinion that the boilers should be taken out of service as soon as alternate unites [*sic*] are available.
>
> Currently the boilers cannot and never have been able to meet the NOx requirement for California. This condition leaves Houweling Nurseries at risk of serious fines and a shutdown of the entire greenhouse completely....

[179] The plaintiff's need to comply with environmental regulations has been brought to the forefront by the previously mentioned decision by the EPA to sharpen its focus and regulate Nox. Mr. Coleman, the California environmental lawyer, testified that start dates for the new regulations applying to the plaintiff's operation will be not later than the end of June, 2012. At that juncture, the plaintiff will be forced into the process

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of applying for permits for the boilers. It will be unable to obtain them because the boilers exceed the Ventura County Nox limits.

[180] The defendant answers that the plaintiff cannot now complain it is unable to meet the 40 PPM Nox limit because it switched to Puripher burners. The defendant maintains that the plaintiff had various reasons to switch to Puripher burners. One reason was that the Puripher burners can run on oil rather than natural gas. During the claim period, oil was a more economical fuel than natural gas. Accordingly, the defendant argues it was the plaintiff's own decision that placed it in a situation of being offside the Ventura Country Nox limits. Therefore, the defendant cannot be held liable for that decision.

[181] The plaintiff's reply is that the primary driver of the retrofitting from Vitotherm burner to Puripher burner was the chronic under-performance of the boilers in terms of generating heat. I agree. In sum, the plaintiff's actions constituted mitigation in the face of the breach of contract by the defendant. It had to act when it did to reduce the mounting damages by installing burners that worked. There was no suggestion that any other burners could have been installed that: (i) were compatible with the existing boilers; and (2) would have met the 40 PPM Nox limit, much less the 30 PPM contractual limit. Accordingly, I find that the mitigation was reasonable in all the circumstances. It is not now open to the defendant to claim that because of such mitigation it receives a free pass on the claim for costs of boiler replacement. I prefer the argument of the plaintiff.

[182] In the absence of some technological X-factor that will solve the Nox emission problem (and there is no evidence that same is on the horizon), it is clear the boilers will have to be replaced by the end of June, 2012.

[183] Separate and apart from those regulatory concerns, there is cogent evidence that the boilers' effective operational lives have run their course or very close thereto. In

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all probability, they will have to be replaced earlier than they would have had the boilers performed to their contracted capacity.

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[184] Deloitte, on behalf of the plaintiff, took a hybrid approach to the calculation under this head of damage. First, on the information supplied by Mr. Nelson, it knew the cost of installing four new boilers would be $1,597,000 (USD) or $1,956,000 (Cdn.). Second, it then did a separate calculation as to the opportunity cost loss to the plaintiff. At page 19 of Exhibit P-252, Deloitte noted:

> ... Since the Boilers had an original expected economic useful life of twenty-five years, replacing them prematurely will cause Houweling to incur substantial capital expenditure far sooner than required but for the reduced economic useful life. Given the time value of money, the opportunity cost of having to incur the capital expenditure prematurely is equivalent to a loss in interest income for Houweling....

[185] Deloitte calculated the lost opportunity cost at $606,000 (USD) or $742,000 (Cdn.). Deloitte testified that because there is merit to each approach for the purposes of the claim, it took an average of both. The resulting claim equalled $1,101,706 (USD) or $1,349,149 (Cdn.).

[186] It is on this issue that the forensic accountants proffered by each side find themselves furthest apart. Mr. Copeland makes the argument at page 22 of his report (D-199) at para. 58:

> 58.(c) The opportunity cost does not consider possible operational and technological changes in the Oxnard facility. According to the Houweling website, in 2009 Houweling installed a five acre solar photovoltaic hybrid system to provide 50% of the facility's energy needs and reduce CO_2 emissions. It may be that this and other technological applications would have impacted the

> timing of the replacement of the boilers, regardless of the alleged boiler problems.
>
> (d) To our knowledge, the boilers have not yet been replaced and therefore Houweling has not incurred any loss in this regard.
>
> ...
>
> 60. However, given that it appears that the boilers have not been replaced and therefore Houweling has not incurred any loss in this regard, we would suggest that there should be no amount included in the claim with respect to the cost of boiler replacement.

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[187] Respectfully, Mr. Copeland's proposition that the plaintiff has not suffered a loss under this head of damages is too facile. As always, the thorny question is where to set quantum of loss.

[188] Although chronic underachievers, the boilers have been of service to the plaintiff. On that basis, simply focussing on the cost of replacement is, in my view, misdirected. I am drawn by the logic of the lost opportunity cost analysis proffered by Deloitte in Exhibit P-252. Quoting from the report on page 19:

> ... This opportunity cost calculation is a function of:
>
> - The total replacement cost for the Boilers – determined to be US$1,597,000;
> - Forgone economic useful life of the Boilers – determined to be 13 to 16 years; and
> - The risk free rate of return – accordingly to the foregone economic useful life, we have selected the 10 years US Treasury Bill rate as of the Valuation Date. Lost interest is calculated on an annual-compounding basis.
>
> Based on these factors, the total opportunity cost of early replacement of the Boilers is US$606,000. Using the foreign exchange rate as at the Valuation Date, total opportunity cost is C$742,000 (Schedule 15).

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[189] Accordingly, under the head of damage advanced of loss from early boiler replacement, I determine the plaintiff's claim to be $606,000 USD. There is no pre-judgment interest under this head of damages.

VI. IS THE PLAINTIFF'S CLAIM PURE ECONOMIC LOSS?

[190] In its brief, the defendant asserts that the plaintiff's claims for negligent design, manufacture and supply of the four boilers is a claim for pure economic loss. The defendant argues that as a matter of law, recovery of pure economic loss for negligent design and manufacturing is precluded unless the goods are dangerous. (See: *New Brunswick Power Corp. v. Westinghouse Canada Inc.*, 2008 NBCA 70, 300 D.L.R. (4th) 523; *Keefer Laundry Ltd. v. Pellerin Milnor Corp.*, 2008 BCSC 1119, [2008] B.C.J. No. 1595 (QL)). There is no suggestion that the boilers were inherently dangerous.

[191] As the Supreme Court of Canada pointed out in *Ontario (A.G.) v. Fatehi*, [1984] 2 S.C.R. 536, all pecuniary loss suffered by the plaintiff is economic loss, but pure economic loss is "... a diminution of worth incurred without any physical injury to any asset of the plaintiff...." (at page 542).

[192] In short, pure economic loss is loss that does not arise from physical injury or damage inflicted upon the plaintiff, or its property, by the defendant. In the case of a defective product, the defendant asserts the definition of pure economic loss also extends to the cost of repair of the defective product.

[193] In *D'Amato v. Badger*, [1996] 2 S.C.R. 1071 at para. 13, pure economic loss was defined as "loss suffered by an individual that is not accompanied by physical injury or property damage." In *Design Services v. R.*, 2008 SCC 22, [2008] 1 S.C.R. 737, at para. 30, the plaintiff's "costs and lost opportunity for profit" was found to be pure

economic loss because "... [t]hey were not causally connected to physical injury to their persons or physical damage to their property...."

[194] Therefore, the distinguishing factor for pure economic loss, as opposed to other types of economic loss, is the connection to physical damage. Mark L. Berenblut, in *Proving Economic Loss* (Toronto: Thomson Carswell, 1987-2003) at 19-13 summarized the law as follows: "... Pure economic loss is generally considered to mean loss of opportunity, or loss of expected profit or wasted expenditures arising in the absence of injury to the claimant or to his property...."

[195] The crucial question therefore becomes whether the plaintiff's losses were accompanied by or causally connected to property damage.

[196] A pertinent distinction is made by professor Feldthusen, in his text, *Economic Negligence*, 5th ed. (Scarborough: Thomson Canada Limited, 2008), noted at page 1:

> ... A *pure* economic loss is a financial loss which is not causally consequent upon physical injury to the plaintiff's *own* person or property. ... when physical damage is involved, pure economic loss must be distinguished from a consequential economic loss which, by definition, is causally consequent upon physical damage to the plaintiff or the plaintiff's property....
>
> [Emphasis in original]

[197] Respectfully, in my view the defendant misapprehends the facts of this case within the context of the discussion respecting pure economic loss. Pure economic loss is loss suffered by a party at a distance from the alleged tortfeasor. That is not the case here. The loss complained of by the plaintiff is consequential economic loss. In the case of lost production, it is for damage done to the plaintiff's property, i.e. the tomato plants. The other heads of damages flow naturally from the breach of contract and, in tort

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analysis, from the breach of the duty of care owed by the defendant to the plaintiff. I dismiss the defence that the plaintiff's claim is pure economic loss.

Defendant's counterclaim

[198] The defendant advanced and proved its counterclaim in the amount of $42,033.87 which relates to supply of some goods and services. However, that claim must be regarded as subsumed within the larger decision dealing with the plaintiff's action and its damages. Accordingly, there will be no separate award for the defendant's counterclaim and it is dismissed, without costs.

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VII. LIMITATION CLAUSE

[199] In argument, the defendant pointedly reminded the Court of s. 6 of the standard terms and conditions in each contract for the supply of the boilers. Section 6 provides:

> 6. LIABILITY:
>
> SASKATOON BOILER MFG. CO. LTD. carries $2,000,000.00 Liability Insurance and its liability is to be limited to the terms and amount of this insurance.
>
> (hereinafter the "Limitation Clause")

[200] Both parties rely on two cases as touchstones in addressing the meaning and ambit of the Limitation Clause. They are, *Tercon Contractors Ltd. v. British Columbia (Minister of Transport and Highways)*, 2010 SCC 4, [2010] 1 S.C.R. 69 and *UMA/B&V Ltd. v. SaskPower International Inc.*, 2007 SKCA 40, 293 Sask. R. 66.

[201] The brief of the defendant succinctly sets out the applicable rationale from those cases. Starting at para. 486, the defendant's brief provides:

> 486. The Supreme Court of Canada outlined the analysis to be used when one party seeks to avoid the application of a clause limiting or excluding liability in *Tercon Contractors Ltd. v. British Columbia (Minister of Transportation and Highways)*. Binnie J., speaking for the court in regard to the existence of the new test, but dissenting as to its application to the facts, sets out the test as follows:
>
> > [121] The present state of the law, in summary, requires a series of enquiries to be addressed when a plaintiff seeks to escape the effect of an exclusion clause or other contractual terms to which it had previously agreed.
> >
> > [122] The first issue, of course, is whether as a matter of interpretation the exclusion clause even applies to the circumstances established in evidence. This will depend on

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> the Court's assessment of the intention of the parties as expressed in the contract. If the exclusion clause does not apply, there is obviously no need to proceed further with this analysis. If the exclusion clause applies, the second issue is whether the exclusion clause was unconscionable at the time the contract was made, "as might arise from situations of unequal bargaining power between the parties" (*Hunter*, at p. 462). This second issue has to do with contract formation, not breach.
>
> [123] If the exclusion clause is held to be valid and applicable, the Court may undertake a third enquiry, namely whether the Court should nevertheless refuse to enforce the valid exclusion clause because of the existence of an overriding public policy, proof of which lies on the party seeking to avoid enforcement of the clause, that outweighs the very strong public interest in the enforcement of contracts.
>
> 487. The test supplants and conclusively does away with the doctrine of fundamental breach.
>
> 488. In determining whether the limitation of liability clause should be applied, the court must examine the following issues:
>
> (a) Interpretation: as a matter of interpretation, examining the intention of the parties as expressed in the contract. Does the clause apply to the circumstances established in the evidence?
>
> (b) Unconscionability: if it does apply, is the clause unconscionable at the time when the contract was made?
>
> (c) Public policy: if the clause is valid and applicable, should the court refuse to enforce the clause due to the existence of an overriding public policy consideration?

[202] At paras. 490 to 495, the defendant addresses the Saskatchewan Court of Appeal decision *UMA/B&V Ltd. v. SaskPower International Inc.*:

> 490. ... That case dealt with a dispute between SaskPower and an engineering firm (the "Engineers") over the significance of the limitation of liability clause in a contract by which the Engineers

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agreed to assist in the construction of two turbines for SaskPower. The clause read as follows:

> 11.4 Limitation
>
> Notwithstanding any other provision of this Agreement, Engineer's aggregate limit of liability for any and all claims arising or allegedly arising as a result of the Engineering Services, whether based in contract, tort, negligence, strict liability or otherwise shall not exceed:
>
> > (a) in cases where and to the extent that Owner's insurance under Article 13 applies, the amount of the applicable insurance deductible(s); and
> >
> > (b) in all other cases, the aggregate amount of all payments and compensation received by the Engineer from the Owner for the Engineering Services under this Agreement.

491. The Court of Appeal noted in that case that the clause was in fact clear on its face and therefore, as a first step, normally would be applied. However, the literal application of the clause made no sense in light of another clause of the contract, which required SaskPower to obtain liability insurance in the amount of $10 million covering the Engineers' activities. The Court of Appeal noted that if the Engineers' liability was limited to the $500,000.00 deductible, the liability coverage obtained by SaskPower pursuant to the contract was useless. The Court of Appeal found that the parties could not have intended that SaskPower would be required to obtain useless insurance and, as a result, concluded that the parties actually intended the Engineers to be liable but insured for the first $10 million of that liability.

492. In coming to this conclusion, the Court of Appeal articulated the governing principle of contractual interpretation as follows:

> [23] The process of contractual interpretation entails ascribing meaning to the terms employed by the parties in formulating their agreement. The object of the process is to ascertain the true intention of the parties along the lines of the general principle aptly summarized by Lord Bingham in the recent case of *BCCI v. Ali*, [2002] 1 A.C. 251 [H.L.] p. 259:
>
> > [8] ... To ascertain the intention of the parties the court reads the terms of the contract as a whole, giving the

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> words used their natural and ordinary meaning in the context of the agreement, the parties' relationship and all the relevant facts surrounding the transaction so far as known to the parties. To ascertain the parties' intention the court does not of course inquire into the parties' subjective states of mind but makes an objective judgment based on the materials already identified.

493. The Court of Appeal acknowledged that, in certain circumstances, "the meaning of particular terms or phrases may be obscure, the language used may be ambiguous, and the effect, even in the face of apparent clarity, may be seen on occasion to be absurd or repugnant and, therefore, beyond the contemplation of reasonable persons." [at para. 24] In these situations, more specific principles of interpretation aid in determining how best to give effect to the parties' intentions. Where ambiguity exists, the court may examine what is alternatively described as the "factual matrix", "surrounding circumstances" or "commercial setting" of the contract in order to determine the true intention of the parties expressed in the contract. [para. 25] A trier of fact is entitled to ask whether the apparent intention of the parties is consistent with commercial reality. The Court of Appeal accepted this by explaining:

> [27] ... commercial reality often provides a useful indication of contractual intention, for the assumption, absent good explanation to the contrary, is that rational commercial actors do not intend absurd results when making their bargains: *Guarantee Co. of North America v. Gordon Capital Corp.*, [1999] 3 S.C.R. 423.

494. That said, however, the Court of Appeal also was careful to ensure that one is not called to read ambiguity into a contract where it plainly does not exist and stated:

> [26] This is not to be taken as suggesting that the court should do otherwise than give effect to a contract, or a term of contract, that is plainly worded and free of ambiguity, for the parties are presumed to intend the effect or legal consequences of their words: *Eli Lilly & Co. v. Novopharm Ltd.* (*supra*).

495. Ultimately, the trier of fact is called upon to determine the true intent of the parties at the time of entry into the contract and

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interpret the clause in accordance with that intention. The Court of Appeal went on to explain:

> [28] It is ambiguity that so often bedevils the process of interpretation, and not just ambiguity attended by potentially absurd or repugnant consequences. Hence, it is necessary to be mindful of the considerations mentioned in *Consolidated-Bathurst Export Ltd. v. Mutual Boiler and Machinery Insurance Co* (*supra*), considerations which Chief Justice Laing acted upon and which, while they reflect much of what has already been said, nevertheless merit express mention because they serve to shed further light on the matter:
>
> > [T]he normal rules of construction lead a court to search for the interpretation which, from the whole of the contract, would appear to promote or advance the true intent of the parties at the time of entry into the contract. Consequently, literal meaning should not be applied where to do so would bring about an unrealistic result or a result which would not be contemplated in the commercial atmosphere in which the [contract was entered into]. Where words may bear two constructions, the more reasonable one, that which produces a fair result, must certainly be taken as the interpretation which would promote the intention of the parties. Similarly, an interpretation which defeats the intentions of the parties and their objective in entering into the commercial transaction in the first place should be discarded in favour of an interpretation ... which promotes a sensible commercial result.

[203] In addressing the interpretation of the Limitation Clause, I will attempt to apply the wisdom of *Tercon* and *UMA/B&V*.

[204] The position of the defendant is straightforward. The defendant shall have no liability beyond the terms and amount of its insurance. It posits that the Limitation Clause is unambiguous and thus efficacious. Not surprisingly, the plaintiff is of a different mind.

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[205] The plaintiff submits that to adopt the interpretation of the defendant leads to an absurd result. The defendant's insurance is commercial general liability and therefore does not cover claims for breach of express contractual terms. To the extent there is insurance coverage, it is for bodily injury and property damage. The plaintiff suggests the commercially reasonable way to read the Limitation Clause is as follows:

> Saskatoon Boiler Mfg. Co. Ltd. carries $2,000,000.00 liability insurance and its liability ***for "bodily injury" and "property damage"*** is to be limited in the terms and amounts of this insurance.
>
> [Interpretive emphasis added]

The plaintiff maintains that unless the additional words are read into the clause, it leads to a commercially nonsensical construct. Specifically, to embrace the defendant's position would preclude the plaintiff from insisting that the defendant comply with the express term of the contract(s).

[206] The defendant acknowledges that its interpretation of the Limitation Clause means that the defendant would be relieved of any consequence of a breach of contract other than what is available from clause 4 (reproduced at para. 21). The defendant adds the pithy observation that if it was important to the plaintiff to have the defendant liable for breaches of contract, it should have negotiated a revision to the clause.

[207] The plaintiff also points to what it says is an anomaly respecting clause 4, being the warranty clause. It submits the warranty in clause 4 is unreconcilable with the interpretation advanced by the defendant respecting clause 6. A claim under a warranty for defective material or workmanship is not an insurable claim and therefore clause 6 would mandate no recovery by the plaintiff. Therefore, the actions of the defendant throughout, in replacing parts (including new Puripher burner heads), was inconsistent

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with the defendant's interpretation of the Liability Clause. The replacement of those parts were not covered by the defendant's insurance, yet the defendant acted as if it were liable for same.

[208] The defendant replies that the clause 4 warranty and the Limitation Clause can indeed be reconciled. In its brief, at paras. 506 and 507, it argues:

> 506. The appropriate resolution of this issue lies in the decision of the majority of the Supreme Court of Canada in *BG Checo International Ltd. v. British Columbia Hydro & Power Authority* [[1993] 1 S.C.R. 12]. In that case, LaForest and McLachlin JJ. for the majority noted:
>
> > [9] It is a cardinal rule of the construction of contracts that the various parts of the contract are to be interpreted in the context of the intentions of the parties as evident from the contract as a whole: K. Lewison, *The Interpretation of Contracts* (1989), at p. 124; *Chitty on Contracts* (26th ed. 1989), vol. 1, at p. 520. Where there are apparent inconsistencies between different terms of a contract, the court should attempt to find an interpretation which can reasonably give meaning to each of the terms in question. Only if an interpretation giving reasonable consistency to the terms in question cannot be found will the court rule one clause or the other ineffective: *Chitty on Contracts*, *supra*, at p. 526; Lewison, *supra*, at p. 206; *Git v. Forbes* (1921), 62 S.C.R. 1, per Duff J. (as he then was), dissenting, at p. 10, rev'd [1922] 1 A.C. 256; *Hassard v. Peace River Co-operative Seed Growers Association Ltd.*, [1954] 2 D.L.R. 50 (S.C.C.), at p. 54. In this process, the terms will, if reasonably possible, be reconciled by construing one term as a qualification of the other term: *Forbes v. Git*, [1922] 1 A.C. 256; *Cotter v. General Petroleums Ltd.*, [1951] S.C.R. 154. A frequent result of this kind of analysis will be that general terms of a contract will be seen to be qualified by specific terms – or, to put it another way, **where there is apparent conflict between a general term and a specific term, the terms may be reconciled by taking the parties to have intended the scope of the general term to not extend to the subject-matter of the specific term**.[Emphasis added]

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> 507. The Limitation Clause and the warranty, therefore, may easily be reconciled by examining each in the context of the contract as a whole. The Limitation Clause, which sets out the parameters of Saskatoon Boiler's general liability to HNO, is qualified by the terms of the more specific warranty, which provides for limited liability in limited circumstances for a limited period of time.

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[209] I would first observe that I regard both parties as having equal bargaining strength. Further, I find nothing inherently unconscionable about limiting liability. In my opinion, the reality as between the parties was that the Limitation Clause employed by the defendant was one of long standing. It was in the contract dealing with the original boiler sale for the plaintiff's Delta operation.

[210] At the time of contracting, neither party directed their minds to the issue of what clause 4 and the Limitation Clause meant. Was it the parties' intention to relieve the defendant of its obligation under the contract except for that which was provided for in clause 4? I observe that the defendant did not conduct itself in that fashion and that its actions and correspondence clearly reflected a sensitivity and an obligation to the plaintiff respecting contractual performance beyond that provided in the warranty of clause 4.

[211] I reflect and benefit from the guidance of para. 27 of *UMA/B&V Ltd. v. SaskPower International Inc.*, *supra*, which admonishes that I "...must avoid an interpretation that leads to an absurdity, repugnancy, or inconsistency which reasonable people cannot be supposed to have contemplated ...".

[212] It is inconceivable that the parties agreed that the defendant would not be liable for breach of contract unless such breach resulted in bodily injury or property damage as contemplated by its insurance policies. That result would be absurd. I will avoid that result by adopting the plaintiff's interpretation of the ambit of the defendant's potential liability.

[213] Accordingly, as I interpret s. 6, it does not operate as to alleviate the defendant from liability for breaches of contract. However, any liability for bodily injury and property damage shall be limited to $2,000,000 or the amount of insurance the defendant carries in the event that such insurance is greater than $2,000,000 and otherwise payable.

What is the amount of insurance coverage?

[214] The defendant's position respecting the plaintiff's claim is that none of it is insured. As the insurance carried was commercial general insurance, there is no insurance for breach of contract. For insurance to be available, there must be damage to tangible property, i.e. bodily injury or property injury.

[215] The plaintiff acknowledges that under a commercial general liability insurance policy breaches of contract would not be covered by insurance. However, it takes issue with the defendant's suggestion that there has not been property damage. The lost production (or, more to the point, damages from lost production) arises from damage done to the crop by reason of the boilers' inability to generate sufficient heat. There is property damage – the property damaged was the greenhouse crop. I agree with the plaintiff's analysis. In my opinion, it can be said that the plaintiff did suffer property damage (i.e. the tomato plants) by reason of the chronic under-performance of the boilers during the claim period.

[216] The plaintiff spent considerable time dissecting the insurance policies carried by the defendant as well as a good number of cases touching on the issue of occurrences. All of this was with a view to arguing the amount of insurance available was more than sufficient to address the alleged damages for lost production. I conclude, it is improper for me to opine as to the limits of the defendant's insurance coverage. It is improper because the insurer should be party to any such debate.

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[217] However, I will, for the purposes of this litigation, find, as a fact, that there was property damage in every year of the claim period to the crop resulting in a loss of production. In each year, such loss of production was less than $2,000,000.

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Summary of damages

[218] To summarize, I have determined the plaintiff's claim for losses against the defendant is as follows:

(i)	Loss from reduced yield	$3,000,000 USD
(ii)	Loss from exceptional maintenance cost	$144,310 USD
(iii)	Loss from excessive natural gas and CO_2 consumption	$820,268 USD
(iv)	Loss from early boiler replacement	$606,000 USD
	Total damages before pre-judgment interest and costs	**$4,570,578 USD**

[219] I decline to opine on the limits of the defendant's insurance coverage. That may well be the subject of further litigation. I do not regard myself as seized with that debate in the event it proceeds to Court.

Currency conversion

[220] As noted, in preparation of its claim, the plaintiff, with respect to damages incurred by lost production, received funds in Canadian dollars and then converted to American dollars. For the purposes of the claim, it then converted back into Canadian dollars. All other damages were incurred in American dollars and were converted, more or less, at the time of the damage to Canadian funds. A trial court has the discretion to select either the date of breach/tortious conduct or date of judgment as the conversion

date. (See: *Stevenson Estate v. Siewert*, 2001 ABCA 180, [2001] 10 W.W.R. 401; and *Kellogg Brown & Root Inc. v. Aerotech Herman Nelson Inc.*, 2004 MBCA 63, [2004] 11 W.W.R. 23).

[221] In this judgment, I determined the lost production damages in USD. Other damages were calculated by the plaintiff in USD. For the purposes of this judgment, the conversion date of US dollar awards to Canadian dollars should be at the end of the claim period, namely December 31, 2001.

[222] If the parties are unable to agree on a number for conversion to Canadian dollars, then I shall remain seized of that debate. The parties may arrange for the matter to be argued through the local registrar.

Pre-judgment interest

[223] The plaintiff is entitled to pre-judgment interest on the first three heads of damages. No pre-judgment interest accrues respecting the damages for early replacement of the boilers. Given that the damages were incurred over time, calculation of pre-judgment interest presents technical issues. If counsel cannot agree on the calculation, I will retain jurisdiction and hear their submissions on a date to be arranged by the local registrar in consultation with counsel.

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Costs

[224] Both counsel ask that I remain seized as to the issue of costs. If necessary, I will hear further submissions with respect to costs on a date to be set by the local registrar in consultation with counsel.

_____ J.

R.S. Smith

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