

Stantec

SUMMARY OF OPINIONS

Allen and Carrie Betts, et al. v.

July 17, 2012

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07-17-2012

1.0 Project

The law firm of Friebert, Finerty & St. John, S.C. retained Stantec Consulting, Inc. ("Stantec") to review file information documenting the operations of the former Crestline Window Manufacturing Company located at 910 Cleveland Street, Wausau, Marathon County, Wisconsin (the "Property" or "Facility"). From this file review, Stantec agreed to provide the client with an opinion of the operations conducted at the Facility.

2.0 General Site Description and History

The Facility was located in the middle of Wausau, adjacent to residential areas on the east and west and industrial operations to the north (3M) and south (Connors Forest Products). The site is located approximately 1000 feet west of the Wisconsin River. Sand and gravel are the primary soil type within the general area, and groundwater has been measured at elevations varying from 10 to 30 feet below ground surface (DNR 01826).

This facility began window manufacturing operations in the early 1900s under the name of Geo. Silbernagel & Sons Co. (DNR 15399). Operations continued under subsequent successor names: Silcrest, Crestline, Harris Crestline, and finally SNE. In 1987, Sentry Insurance, the then parent of SNE, sold all of the assets of the business, except the property, to a third party named SNE Enterprises Limited Partnership. Sentry Insurance then renamed the old SNE as Wauleco Corporation. Wauleco continues to own the property.

The window manufacturing operations continued on the Property under a lease between Wauleco and the new SNE until 1990 when the manufacturing was transferred to a different site (WAULECO 039410). After the manufacturing ceased, the buildings were demolished in 1992 (DNR 16165). Today the site is vacant except for some existing structures that were modified or others newly constructed to house groundwater extraction and treatment remediation systems. To simplify and for purposes of this report, Stantec will refer to the site and the owner of same as Wauleco regardless of what specific point in time is being referenced.

The window manufacturing operation included treating wooden window components with a pesticide preservative solution commonly called Penta that was 5 % Pentachlorophenol and 85 % mineral spirits (Wauleco_005922). The use of the Penta solution reportedly began in 1945, and continued until December 1986, when the Penta product was replaced by a Carbamate wood preservative (Wauleco_039429). While chemical pesticides preservatives containing Penta were used on the Property, the pesticide preservatives were originally received via bulk tanker deliveries and stored and piped to several underground storage tanks (USTs) (DNR 033435). The USTs then supplied the pesticide preservative solution to the various process lines and systems used over time to preserve wood.

Originally, wood was treated by placing components onto an apparatus that held the wood as it was submerged in an open "dip" tank containing the pesticide preservative solution. After the wood pieces were submerged for approximately three minutes, the wood was removed from the tank, and the excess liquid pesticide preservative was allowed to drain back into the dip tank. The treated wood was then placed into storage areas to dry. After drying, the wood pieces were taken to the assembly operation where they were used to manufacture windows (WAULECO 060948). The area where the wood was dipped and stored until dry did not have a barrier beneath it to prevent all of the excess liquid pesticide preservative from dripping on to the ground. Reportedly, portions of the wood preservative application area had systems in place to collect drippings; however, those systems were not in place throughout the entire production

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SUMMARY OF OPINIONS

General Site Description and History

July 17, 2012

process/drying line. (WAULECO_004245-46)(Zastrow deposition) and Wierzba October 15, 1984 memo of dip tank inspection (Wauleco_15569).

A second method of applying the Penta containing pesticide preservative liquid was installed in the early 1970s. This was a conveyor system that moved wood through a preservative application stage followed by passing the wood through a drying oven. When first installed, this conveyor line submerged the wooden parts in the Penta containing pesticide preservative liquid, however, due to the excess Penta gumming up the conveyor resulting in excessive maintenance issues, this process was modified to a system that sprayed the Penta onto the parts prior to them traveling through a drying oven (WAULECO 060948).

3.0 Qualifications

Stantec personnel involved with this project are: Mr. Daniel G. Feldt, Mr. A.H. "Skip" Glor, and Mr. Richard A. Pager. Professional profiles for each are provided as attachments to this report.

Mr. Daniel G. Feldt, MS, MPH, CIH began his professional career in occupational and environmental health in 1980 as a Corporate Industrial Hygienist for Wisconsin Electric Power and Wisconsin Natural Gas (now WE Energies). Among many programs he developed and managed were chemical and hazardous materials control, spill and fire response, hazard communications, noise control, respiratory protection, asbestos control and abatement, ergonomics, and dust and silica control. He was also the Vice Chair of the Edison Electric Institute's Industrial Hygiene Committee for five years, and served two years on the Electric Power Research Institute's (EPRI) Health Studies Program Committee. In 1990, Mr. Feldt entered the consulting arena and served in various industrial hygiene and safety management positions at Midwest Environmental Control Corporation, WW Engineering and Science, Fluid Management, Inc. and TriStar Consulting Group.

In 2008, Dan joined Northern Environmental Technologies Incorporated (Northern Environmental). Northern Environmental merged with Bonestroo, Incorporated (Bonestroo) in 2009 which was acquired by Stantec Consulting Services, Incorporated in 2011. Bonestroo was recently acquired by Stantec. He has served as President of the Wisconsin Section of the American Industrial Hygiene Association (AIHA) for three 3-year terms over the past 25 years, and has taught health and safety coursework at the University of Illinois-Chicago, Milwaukee School of Engineering and Waukesha County Technical Institute. He has also participated as a seminar instructor on numerous occasions for various trade and health and safety professional groups over the past 30 years. Mr. Feldt has also been retained as an expert witness in many occupational health related legal matters.

Mr. A.H. "Skip" Glor began his working career in the environmental field in 1975 when he was hired by the Wisconsin Department of Natural Resources (WDNR) as a Solid Waste Investigator for their Southeast District in Milwaukee, WI. As a Solid Waste Investigator, Mr. Glor performed duties involving investigation, evaluation, licensing and assessment of all solid waste disposal activities within the seven counties in Southeastern Wisconsin. He routinely reviewed landfilling, transporting, incineration, recycling, and disposal activities in commercial, industrial and municipal settings. Those duties involved the management of all solid wastes, including what was then referred to as toxic and hazardous wastes, intended to obtain and maintain compliance with Wisconsin laws and regulations.

Mr. Glor was promoted to a Solid Waste Staff Management Specialist position for the Southern District of WDNR located in Madison, WI in June 1978. As that District's Chief of Solid Waste Management first in Madison and later in Milwaukee, he was responsible for the implementation and management of the entire Solid and Hazardous Waste as well as the Emergency Response/Spill programs throughout Southeastern Wisconsin. This placed Mr. Glor and/or his

One Team. Infinite Solutions.

SUMMARY OF OPINIONS

Qualifications

July 17, 2012

staff more routinely in direct inspection of commercial and industrial facilities, which allowed them to become familiar with the historic and current waste handling practices of such facilities.

Skip left his employment at WDNR in March 1987. From 1987 to 1992, Skip worked for Waste Management of Wisconsin and since 1992, he has continued as an environmental consultant, including the last 4.5 years with Northern/Bonestroo and Stantec, until retiring from full time consulting in 2011. As a private consultant, including time working directly for two law firms, he was continually involved with customers and/or clients with needs to respond appropriately to past and/or existing waste management practices which were either suspect as to their compliance status or already known to be in need of bringing them in to compliance with the ever evolving regulatory framework.

Mr. Richard A. Pager began his career in the environmental field in 1976 when he was hired by the WDNR as a Solid Waste Investigator for the Southeast District in Milwaukee, Wisconsin. As a Solid Waste Investigator, Mr. Pager performed the duties involving inspection, investigation, evaluation, licensing and assessment of all solid waste disposal activities within the seven counties in Southeastern Wisconsin. He routinely reviewed landfilling, transporting, incineration, recycling, and disposal activities in commercial, industrial and municipal settings. Those duties involved the management of all solid wastes, including what was then referred to as toxic and hazardous wastes, intended to obtain and maintain compliance with Wisconsin laws and regulations. Within these inspections Mr. Pager inspected various industries to evaluate how they were managing waste.

In 1980 Mr. Pager went to the Milwaukee Metropolitan Sewerage District in a position entitled Solids Non-Utilization Supervisor. With this position, Rick was responsible for managing all waste generated at the Districts Treatment Plants that were required to be disposed. Additional job duties included in this position was the responsibility to track environmental regulations that would impact the Treatment Plant's operations. With the implementation of the Resource Conservation and Recovery Act (RCRA), Rick was responsible for characterizing the Plant's wastes, as well as administration of the hazardous wastes for the plants.

In 1983, Rick transferred positions at the Sewerage District to the Industrial Wastewater Discharge Program. As a Wastewater Engineer, he inspected and evaluated the discharges and reporting from various industries. These discharges were regulated under the Clean Water Act, and the Sewerage district discharge ordinance.

In 1987, Rick took a position with Waste Management, Inc., as a Technical Manager, where he was responsible for evaluation of Waste Management facilities for compliance with environmental Regulations. The Waste Management facilities included landfills, transfer stations, hauling companies, Incinerators, processing facilities, and recycling facilities. In addition, third party facilities that were used by Waste Management were evaluated to assess environment compliance with their operations, to limit Waste Management's liabilities. In addition, facilities that were candidates for acquisition by Waste Management were inspected and evaluated.

One Team. Infinite Solutions.

Stantec

SUMMARY OF OPINIONS

Qualifications

July 17, 2012

In 2008 Rick joined Northern/ Bonestroo/Stantec where he serves as a Senior Scientist responsible for numerous environmental projects related to solid and hazardous waste; water regulations; stormwater; industrial discharges; environmental reporting for air, water, and hazardous waste; remedial program implementation and permitting.

4.0 Conclusions

Based upon our review of the documents provided to Stantec related to this matter and our collective work experiences, we have drawn the following conclusions and opinions which we hold to a reasonable degree of professional certainty;

1. We conclude that pentachlorophenol based wood preservative products historically used to preserve wood ("Penta") were known to be hazardous and to present significant risks to the health and welfare of people exposed to them as well as into the environment to which they were released.
2. We conclude that the Facility failed to use appropriate Penta application practices or inventory control of these hazardous chemicals. At best the company was careless and at worst, reckless.
3. We conclude that the Facility operators routinely violated State of Wisconsin laws with respect to the control and disposal of these hazardous substances, resulting in subjecting workers, neighbors, the general public and the environment to unnecessarily prolonged exposure to hazardous substances.
4. We conclude that the Property owners and company officials failed to adequately address all potential avenues of release and transport for all chemical constituents of concern presented by the use of hazardous substances at this Facility.
5. We conclude that the Property owner and company officials failed to adequately and accurately communicate to the public the hazards presented by their past practices.

In the following section, Stantec will provide more detailed explanation regarding the basis for each of the five (5) conclusions listed above. Where factual information already contained within the records are cited, Stantec will provide the document number established to identify said record. When Stantec cites references currently not contained in the record, those cites will be cross-referenced with a bibliography attached to this report.

5.0 Basis for Conclusions

1. Hazards known to be associated with chemical pesticide wood preservatives.

The toxicity of Pentachlorophenol (Penta) was documented by Bechold and Ehrlich as early as 1906¹. More extensive studies were carried out by Kehoe, et. al. in 1939², and by Boyd, et. al. in 1941³. The concern for the acute and chronic effects of Penta was documented by Deichmann, et al.⁴ in a study which revealed that Penta introduced into the bodies of experimental animals, by ingestion or injection, was retained and distributed to various tissues in significant percentages.

Specific to humans, Penta can enter the body by inhalation, ingestion and through intact skin⁵. As stated in the internationally recognized occupational hygiene textbook, Patty's Toxicology⁵, commercial pentachlorophenol has known impurities including chlorodibenzodioxins and chlorodibenzofurans, some of which are highly toxic materials^{6,7,8}. Accordingly, in recognition of the potential for exposure in the workplace, the American Conference of Governmental Industrial Hygienists (ACGIH) established an 8-hour time-weighted average (TWA) recommended inhalation threshold limit value (TLVR) of 0.5 milligrams per cubic meter of air (mg/m³) in 1956⁸. In recognition of the potential for significant exposure via skin absorption, ACGIH also designated Penta as a skin absorption hazard.

The US federal government, upon establishment of the Occupational Safety and Health Administration (OSHA) in 1969, recognized the hazardous nature of Penta and set a workplace 8-hour time-weighted average (TWA) inhalation permissible exposure limit of 0.5 milligrams per cubic meter of air (mg/m³) in about 1970⁹. This was chiefly based on the toxicological data which ACGIH utilized for development of the Penta TLV.

Subsequent studies continued to build a database of mounting evidence of the hazards of Penta and the dioxin and furan contaminants, including various forms of cancer^{11,12,13}.

Specific to this case, it is significant to note that the Facility was purchasing their wood preservative product from Koppers Company. In 1976, the Manager of Product Development for Koppers Company, Robert Arsenault, authored an article⁸ for the American Wood Preservers Association in which he cited 118 research documents, dating over a range of 1942 to 1976, related to hazards of Penta, dioxins and furans. Accordingly, it can safely be concluded that Koppers, the manufacturer and supplier of wood treatment chemicals to the Facility was acutely aware of the potential hazards of their products containing Pentachlorophenol, as well as the potential hazards associated with the dioxin and furan contaminants and by-products. Also, Roger Holdridge, a former company manager at the Facility was actively involved in the National Woodwork Manufacturers Association, along with Koppers and should have been expected to be aware of these issues (Wauleco 003532).

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

In summary, we conclude that the company knew, or certainly should have known, that it needed to exercise care in the handling of Penta at the Facility because of the potential health risks to their employees and the public from exposure to pentachlorophenol, dioxins and furans. This information was readily available through trade associations (i.e. American Wood Preservers Association and the National Wood Manufacturers Association).

2. Careless chemical handling practices.

The Facility's former Plant Engineering Manager, Pat Wierzba, has stated that the pentachlorophenol waste generated at the Facility was the result of accidental process releases that occurred over forty years of wood preservation operations. (CR04589). This statement is also supported by other documents, including a document stating that Penta could have gotten into the soil via efforts to settle dust on the parking lot, spills at the time of filling underground tanks, overflows during tank transfer processes and drying operations completed over wooden floors rather than drip pans. (Wauleco 019214) (Wauleco 001379) (Wauleco 004245) (Wauleco 060946). Many of these activities, along with the transport of lumber still wet with Penta around the facility, were confirmed by the former longtime maintenance supervisor, Bob. Zastrow in his deposition.

It is our opinion that the company was aware of this contamination very early on in the Facility's operation. For example, buildings were added throughout the history of the site and the file materials indicate that the company encountered contaminated soils during those projects but took no corrective action. Recently Mr. Zastrow gave a first-hand account of an Otis elevator company employee who was overcome by fumes during an excavation of a "Hole" in which to install their cylinders during construction of the Sash Line building. According to Mr. Zastrow, this work was done in 1970 and nothing was reportedly done to investigate this incident nor was the company's operating practices changed as a result. (6/28/12 Zastrow Deposition). Rather, Mr. Zastrow testified in his deposition that during construction of the Sash building, contractors were directed to place excavated soils from the same area onto other areas of the Property to raise the grade (6/28/12 Zastrow Deposition).

The record also contains a report entitled "Candidate Site Inspection," which documents an inspection conducted for a Fire Insurance policy conducted on January 18, 1973. That inspection identified the wood floors as being saturated with wood preservatives due to exposure with drying parts and the presence of sawdust on the ground beneath those boards (WAULECO 066953). The observance of saturated wood would indicate that excess Penta pesticide preservative liquid had been carried beyond any area intended for recovery and return of liquid to the dip tank. The observance of sawdust below the floor indicates the viewing of the ground beneath the saturated wood floor was not difficult. Further, as this wood floor was a platform elevated above the bare ground, it is apparent the operating processes which resulted in the saturated wood flooring most likely provided ample opportunity for some of the Penta containing pesticide preservative liquid to reach the underlying soil. Nothing is apparent in the record to indicate the company made any changes to their operating procedures to correct these problems.

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

Another building construction event took place in 1978. At that time, soil samples were taken during a geotechnical investigation performed at the Facility which contained a strong odor. (WAULECO 014745). According to the record, Mr. Wierzba had several employees assess the odor of the soil before the company decided to submit samples for analysis by Koppers, the company's Penta supplier. (Wauleco_003574). All of the eight employees noted the presence of contamination and two of them, Mr. Zastrow and Mr. Holdridge, specifically responded that the contaminated soil smelled like Penta (Wauleco_003574).

The company then arranged to send a sample to Koppers which confirmed that pentachlorophenol contamination was present. (Wauleco_014846). Later company discussions in 1984 brought on by the possible termination of the use of Penta at the Facility resulted in Mr. Wierzba being asked to inspect the soil in the vicinity of the original dip tank and collect samples of surface soil for analyses. At this same time in October 1984, Mr. Wierzba's inspection and surface soil sampling resulted in the retained three soil cores from 1978 also being reanalyzed multiple times for the presence of Penta (Wauleco_014801). These soils samples were taken very near to the then eastern property boundary adjacent to Cleveland Avenue and away from the primary dipping operations. The results of these analyses combined with their locations are indicative of extensive surface contamination that could only be caused by reckless handling practices or direct surface disposal of spent product.

As will be discussed later in this report, despite a clear obligation to report the known contamination in 1978, the company took no action upon receiving confirmation that the soil was contaminated until 1984. Apparently the company was making some effort at that time to assess their future use of Penta as the product's registration was under review by EPA due to its hazardous properties. This is specifically referenced in an internal SNE Corporation memo from Pete Nygaard to Howard Dolce, dated August 21, 1984 (CR01636). Mr. Nygaard acknowledges that "Pentachlorophenol does contain HxCDD which is a dioxin." He further states in the same memo, "Especially considering the ground water problems that Wausau is presently experiencing. Pentachlorophenol is a carcinogen! There is also a risk of teratogenicity, fetotoxicity, and oncogenicity because of the contaminants of HxCDD and HCB."

As a result of Mr. Nygaard's memo, Tom Jirous of Sentry Insurance, which became the company's sole shareholder in 1981, informed Mr. Dolce in a memo dated September 4, 1984 (Wauleco_014764) that he was putting a Sentry employee in charge addressing the Penta issues, stating the following: "I believe you know Kent Foster and the high regard in which he is held by our senior technical people and our customers. He will be sensitive to the need to integrate potential solutions to the problem with your overall marketing scheme, but I have authorized him to call the shots on remedial action. Kent will know when he is engaged with NWMA standards, legal implications, marketing implications, and worker/safety implications. He will need the full support of your top technical people like Pete Nygaard."

Kent Foster, was a certified industrial hygienist (CIH) with 20+ years of experience at that time. Kent Foster worked as an Assistant State Chemist at New Mexico Dept. of Agriculture, as a chemist at Aerojet General Corporation at the White Sands Test Facility in New Mexico, at the

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

Kennedy Space Center in Florida as a Supervisor at the Propellant Systems Components Laboratory and Propellant Life Support Operations Laboratory, as a Laboratory Manager at Chrysler Corporation in Highland Park Michigan, and moved to Stevens Point as an Industrial Hygiene staff specialist and IH Laboratory Director for Sentry in 1981. In his role as referenced above, Mr. Foster would have brought a broad knowledge of environmental health and toxicology to assist in evaluating and managing this situation. Shortly after Mr. Foster was put in charge of the Penta issue, on October 15, 1984, Mr. Wierzba undertook to document the presence of contamination next to the old dip tank, which was covered with crystallized Penta (Wauleco 015569). Mr. Wierzba also collected samples for Mr. Foster at that time. Sentry's laboratory analyzed both those samples and the samples taken in 1978, all of which confirmed the presence of extensive Penta contamination.

It is our opinion that these collective documents and testimony confirm the careless and reckless handling of Penta over the 40 years of use as stated by Mr. Wierzba. It was evident that there was knowledge of soil contamination as early as 1970 and confirmation of same in 1978, yet the company did nothing to mitigate those problems for up to 14 years.

It is also noteworthy that nothing was found in the record that showed the Facility ever attempted to reconcile inventory of Penta containing pesticide preservative liquid vs. usage of same until 1984. For example, even though between 1977 and 1979 records show Penta usage decreased by two-thirds, (CR01426) the plant's production only declined 20% (WAULECO 017049). Nothing in the records show any recognition of or explanation for such a significant change in Penta containing pesticide preservative liquid use for wood preservation.

By contrast, in November 2007, a Draft Focused Feasibility Study authored by RMT, Inc. (Wauleco_060173) measured 143,000 gallons of product having been extracted from the groundwater treatment system to date (beginning in 1991). That report went on to calculate an additional 312,450 gallons of product was still either floating on the water table or was present in the soil near the water table within the contamination area. This adds up to an estimated quantity of 455,450 gallons of pesticide wood treatment product having been discharged over the years at this site. Over a 40 year period, this equals an annual loss of 11,380 gallons per year of the Penta product, or 45 gallons per day every day the facility operated. This is product discharge into the soil and doesn't account for portion of the product that may have evaporated into the air.

Also, it appears these careless practices continued even after the company finally disclosed the problem to the WDNR in late 1984. For example, the Facility terminated the use of the Penta product in 1986 (WAULECO 025630) and replaced it with a Carbamate preservative (WAULECO 039410). A memo dated February 14, 1991 from Mr. Foster to Caroline Fribance, who apparently replaced Mr. Jirous, references the carbamate being used in a "cavalier manner" after it replaced Penta (Wauleco_011432). Stantec believes that this statement, made in 1991 by the highly regarded technical expert of the owner of Wauleco (Sentry Insurance) having been assigned oversight duties of them in 1984, represents the continued disregard Wauleco management had for compliance with environmental issues and regulations.

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SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

There is also serious question as to how the Facility managed its Penta wastes in general. As would have been a necessity for any such operation, there is some indication in the record that Penta sludge and residues were pumped off as necessary to clean out the dip tanks or sumps of residue buildup (CRO1595). There are some references that the collected residue was then hauled off by a septic pumper (WAULECO 042944). Mr. Zastrow claimed this pumping took place every few months. However, neither Mr. Wierzbator nor Mr. Zastrow, two gentlemen one would expect to have such knowledge, could identify which septic pumper hauled the waste or how and where that hazardous waste was disposed. This hazardous liquid and sludge would not have been legally acceptable for disposal either at a Publically Owned Treatment Works (POTW) or for land spreading/application, the normal management methods of that day for septic waste. The landfill in the Wausau area which was previously likely to have been approved to accept such wastes for disposal would have been the Holtz-Krause Landfill. However, the Holtz-Krause Landfill was under regulatory actions at this time to properly respond to serious environmental contamination originating from this landfill. Subsequent to those enforcement actions, all of the Holtz-Krause waste acceptance records were closely reviewed to identify any and all users of this facility. Record of the Wauleco sludge/residue shipments were not found within those records making it unlikely such wastes were disposed at the Holtz-Krause Landfill.

In October 1984 , when the owners and Wauleco management were evaluating the Facility to determine if the DNR was to be notified of a Penta release, a memo documents that a concrete vault was found to contain 7 feet of liquid (CRO1595). The liquid was reported to have been pumped out with no reference made to where it was discharged and/or disposed. The record further documents the top layer as characterized as "definitely" Penta, with a heavier brown layer below. The brown layer was recorded as being drummed. The bottom layer is described as mostly water (CRO1596). Nothing in the record identifies how the Penta layer or the water layer were handled or disposed. Additionally, there were no hazardous waste manifests found in the record documenting any of these activities and shipments. The record shows that only after the notification to the DNR of the contamination that liquids and sludges were shipped off site with the proper manifests as hazardous wastes, even though those requirements were in effect back to 1981.

The fact that there are no records even from the 1981 to 1984 time period raises suspicion regarding whether or how these practices were truly managed. We can draw a few competing inferences: on the one hand, the waste may indeed have been handled as described but the company simply did not maintain any records of its practices; alternatively, there may have been no such regular practice and the spent wastes were either handled onsite or otherwise disposed of in an unlawful manner. The first scenario indicates carelessness, the second evidences intentional and reckless conduct.

Careless practices are also evidenced by the company's health and safety practices with its workers. Throughout the records we reviewed there are references to issues that workers "should have certain Personnel Protective Equipment (PPE) when working the wood preservative application operation" (WAULECO 000974, 042944, & CRO1636). While Mr.

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

Zastrow testified that they used a "respirator, a tank" when they cleaned out the dip tank, he also testified he never observed the operator of the dip tank or workers on the sash line wear or use any protective equipment (6/28/12 Zastrow Deposition). The only photo observed of the wood preservation treatment line showed a worker in a short sleeve shirt with no gloves on their hands (WAULECO 067971). You can't tell if any type of apron is being worn by the view in the picture. The October 8, 1984 Memo (CR01599) identifies the need to issue gloves, aprons, glasses, etc. to employees handling the material to comply with the new regulation as a restricted use pesticide (CRO 1647). (these types of practices were also recommended on the product label, Wauleco_068160). From that memo and further sustained by the limited evidence in the photograph, Stantec concludes that if workers needed to be issued PPE as of 10/8/84, they were not wearing PPE prior to that date. Additionally, that communication was made at the same time when discussions were underway about the toxicity of Penta and the requirement that applicators will require licensing (CRO1636).

3. State of Wisconsin solid and hazardous waste laws violated.

As of May 1, 1969, the State of Wisconsin had administrative code rules in place which codified definitions for "solid waste" and "toxic and hazardous waste". Wisconsin Administrative Code (WAC) RD 51 not only provided these definitions, but it also detailed regulations as to how these wastes were to be stored and disposed (RD 51.10). In May 1971 WAC RD 51 was renumbered to NR 151. Then in July 1973, NR 151 was repealed and a more comprehensive new regulation was created. The revised NR 151 made some subtle changes to the definition of "solid waste" but left the definition of "toxic and hazardous waste" unchanged. Then in October 1976, the United States Federal Government passed the Federal Resource Conservation and Recovery Act (RCRA) (PL 94-580). The passage of this federal solid waste management law established far reaching regulations including the development of a national hazardous waste management program.

The company's handling of Penta waste violated these laws starting with the 1970 encounter described earlier involving the Otis Company employee who was overcome by fumes in an excavation at the site. (6/28/12 Zastrow Deposition). The January 1973 Candidate Site Inspection also evidences improper waste handling when it identified the wood floors as being saturated with wood preservatives due to exposure with drying parts (Wauleco_066953).

These early unlawful practices appear to have extended to the burning of waste wood on site. On July 11, 1972, the WDNR issued a Consent Order to the Company (Wauleco_0066945). The Consent Order was issued to require the Company to correct violations of particulate emission standards by implementing the plan Wauleco submitted and was subsequently approved by WDNR on December 3, 1971. The plan called for Wauleco to comply with particulate emission standards by "eliminating burning wood wastes". The consent order called for the company to submit a progress report by January 1, 1973 and meet the emission standards "on or before July 1, 1973". According Mr. Zastrow, the company did not comply with this order and continued to burn sawdust in their boiler until at least his retirement, which was sometime between 1984 and 1991. (Zastrow Deposition 6/28/12). (Mr. Zastrow was not sure

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

what his retirement date was but it is clear that he was still employed in late 1984 when he assisted Mr. Wierzba with some tank testing work but had retired by 1991 when he met with various Sentry representatives to discuss the historical penta handling practices (Wauleco_001379)).

In 1977 the Wisconsin Legislature approved Act 377 thereby creating State Statute 144.76. That new statute was commonly referred to as the "Spill Law" and required that anyone in possession or control of a hazardous substance being discharged or who causes such a discharge shall take actions necessary to restore the environment to the extent practicable and minimize the harmful effects from any discharge to the air, lands and waters of the state (stat 144.76[3]). Further, stat 144.76 (2)(a) specifies that persons possessing or controlling a hazardous substance shall immediately notify the department of any discharge. The company clearly failed to comply with the Spill Statute when it failed to report the contamination encountered in 1978 discussed above. By his own testimony, Mr. Wierzba acknowledged that he knew of the obligation to report contamination of the ground to the WDNR in 1978. (11/11/09 Wierzba Deposition).

The company continued to violate the Spill law until at least 1984, when it finally decided to report the 1978 contamination issue to the WDNR on October 22, 1984 (WAULECO 043034). However, even at that time, the company misled WDNR as the extent of its knowledge regarding the contamination. For example, the October 22, 1984, notification stated "no significant spilling or other discharge had occurred," despite the fact that Mr. Wierzba advised management when he conducted an inspection of the dirt floor next to the dip tank on October 15, 1984 and reported the presence of crystallized Penta, as well as a Penta/sludge layer floating on a 7 foot deep liquid layer in a concrete vault found adjacent to the dip tank (Wauleco_15569). The information and knowledge resulting from this inspection together with information obtained from the earlier soil borings in 1978, the information disclosed in the January 18, 1973 Candidate Site Inspection (for a Fire insurance policy), and the encounter by Otis Elevator demonstrates a longstanding disregard for compliance with environmental regulations and pattern of intentional and prolonged failure to take actions to protect the environment.

The company's efforts to minimize or conceal the extent of the harm it had caused appears to have continued even after the 1984 notification to WDNR. Sentry did arrange to hire an environmental consulting firm to perform environmental studies to assess the environmental impacts caused by the release of Penta. The Facility submitted these studies to WDNR (DNR 00694 & 00793), and in January 1986 a meeting was held between WDNR, Facility Personnel, and their consultant. The recommendation made to the WDNR was that no remedial actions were required. Instead, the consultant recommended continued monitoring of the environmental contamination be performed. The apparent consultant logic was as long as site conditions did not change, only monitoring of the facility would be necessary. The DNR rejected that recommendation and issued a Consent Order in November 1986 (WAULECO 012392). The order outlined a schedule for continued investigation of the contamination together with

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

requirement to develop and implement remediation program to correct the soil, surface and groundwater contamination.

A second Order was issued to the site in 1991, after several years of negotiation (DNR 16091). This Administrative Order was due to the fact that the WDNR did not see adequate progress being made to remediate the site. A treatment system is still in operation at the Facility.

The Facility has also continued to have other compliance issues. For example, on February 22, 1989, WDNR issued a Notice of Noncompliance (NON) to the facility after a Hazardous Waste Inspection observed and documented improper storage of Hazardous Waste (DNR 15300), nine years after the requirements were first implemented. The NON identified numerous basic violations of the Hazardous Waste regulations, including lack of proper identification of accumulation time, labeling, inspections, record keeping, training, manifesting, etc. These violations were of very basic requirements placed on hazardous waste generators in 1980 under the Federal Resource Conservation and Recovery Act (RCRA) and the State of Wisconsin development of state hazardous waste regulations, Wisconsin Administrative Code NR 181, which went into effect in July 1981. Similarly in October 1986, an internal facility review (WAULECO 042944) identified that Hazardous Waste Storage drums were required to be labeled including an accumulation start date. This 1986 review showed that there was knowledge of the requirements; however the 1989 inspection documents that those requirements were knowingly violated. The fact these fundamental generator requirements were not being followed by Wauleco nine years after they were adopted reinforces Stantec's opinion of how poorly the Facility approached compliance with environmental regulations.

Additional evidence of poor operational practices and recalcitrant behavior by company management is Wauleco's failure to comply with the Wisconsin Department of Agriculture, Trade and Consumer Protection regulations (DATCP) for the storage of pesticides. On March 30, 1987 the DATCP sent Mr. Patrick Wierzba a letter regarding a February 11, 1987 inspection performed on their Facilities (DNR 14803). This letter identified that the Facility was regulated under AG 163, and among the requirements of this regulation was the need for secondary containment of the dip tank. DATCP concluded that the lack of such secondary containment identified the Facility to be in violation of AG 163. The DATCP again identified a lack of secondary containment in a January 5, 1989 site inspection (DNR 15342) for the AST used for bulk storage of pesticide preservative chemicals, and no loading catch pad or catch basin for the pesticide unloading area. An April 28, 1989 letter to SNE outlined the issues identified in this the inspection (DNR 15340). SNE responded to that letter on July 11, 1989 indicating they were considering several types of concrete containment systems that will meet DATCP requirements for secondary containment, as well as a conceptual plan for the unloading area containment pads (DNR 15372). On April 4, 1991 the DATCAP issued a letter to Wauleco identifying that these two 1989 violations had still not been corrected (DNR 15972). This was a continuing violation of AG 163. Stantec believes this 4 year period of continuing violation of the DATCP regulations further documents Facility management's unwillingness to comply.

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

4. Failure to adequately address all potential avenues of release and transport for all chemical constituents of concern.

A necessary part of any investigation of a site like this includes an assessment of who might be exposed to the contamination. Wauleco performed a public health assessment on two occasions for this project. Document 1, dated October 9, 1986, titled; Hydrogeologic and Assessment Report contained a Human Health and Environmental Assessment (DNR00059). A second assessment, titled; Public Health and Environmental Assessment for Wauleco, Inc. is dated March 3, 1989 (Wauleco_033608). Both of these reports were prepared by Keystone Environmental Resources, Inc. (Keystone).

By the time these two assessments were prepared, it was already known that soil, groundwater, sawdust and wood scrap did, or had been contaminated by wood preservative chemicals. In addition, the Company had demonstrated knowledge of the potential harmful affect those hazardous substances presented by terminating their burning of the sawdust and wood scrap in the company boilers plus not allowing any employee or other persons to collect scrap wood for burning at their homes (Wauleco_044596). There was also knowledge by 1989 that the hazardous substances involved in this contamination incident included more than one volatile organic compound (VOC).

While the knowledge of potentially contaminated airborne particulate from their boilers, ash or other particulate from the burning of treated wood scrap at off-site locations and the presence of multiple VOCs were known to Wauleco, both of these documents concentrated on Penta (and dioxin/furan) in the groundwater and surface water. The other compounds released into the environment, as well as the other pathways were minimized by these reports. Potential inhalation of fugitive dust possibly containing chemicals of concern was summarily eliminated from further assessment due to the site presently being paved (Wauleco_033647, March 3, 1989). Residential exposures from past activities were not addressed.

Stantec believes the lack of completion of more comprehensive human health assessments was a conscious decision made by Wauleco to control their risk and exposure. This opinion is based on the actions by the company leading up to this point in time. As written in the sections above, both Mr. Wierzba, Mr. Holdridge and Mr. Zastrow all had reason to know of the discharge of hazardous substances to the environment by at least 1978. In his deposition, Mr. Wierzba testified he wanted the soil samples to be "confidentially tested" so as to "figure out what this is before we get anybody alarmed". Further, according to the November 6, 1978 Koppers memo, Mr. Holdridge was anxious to obtain the analytical results to take care of the problem before it got worse.

In addition, by 1989 the consulting industry was well aware that the Superfund program established a process for conducting comprehensive environmental assessments^{14,15}. Stantec believes the combination of these factors would reasonably resulted in Keystone recommending completion of a more far reaching assessment than the two they published. In our experience, this type of omission is driven by the decision of the client rather than the actions of an

experienced consultant like Keystone. The WDNR as well as the Wisconsin Department of Health review of the assessment identified shortcomings to the assessments, however these were never addressed (DNR 15326-15331)

Our opinion is further substantiated by the documented presence of dioxin contamination in the residential neighborhood east of the former SNE Facility; a condition that is attributed to airborne and stormwater transport of contaminated site soils and dusts. (PL 003441). It is our opinion that had the company properly investigated the site and all the likely exposure scenarios it would have discovered this contamination much earlier and significantly reduced resident exposures.

5. Failure to adequately communicate hazards caused by past practices.

It is also our opinion that Wauleco failed to reasonably communicate the hazards presented by the hazardous substances used on the Property to both 1; their employees during the use of those substances at the Facility and 2; their neighbors and the general public after the discharges of those hazardous substances became known.

Sentry Insurance purchased Crestline in 1981. This purchase resulted in the Company being subjected to a whole set of more specific policies. Specifically, Sentry's policy was to obligate their subsidiaries to comply with The Enterprises Policy Manual (Wauleco_014770) in which on page: PS002.2 was the requirement for any product that shows evidence of potentially being hazardous to health or safety in the course of normal use must be promptly withdrawn until a full determination is made. This policy was supplied to Howard Dolce on Sept 4, 1984. Penta use continued until November 1986. This same Policy manual on Page EN 001.1 Operations specifies that exposure of employees to potential health hazards will be changed to eliminate or control the exposure. This opinion is even more substantiated by the existence of the Enterprise Policy Manual published by Sentry Insurance and distributed to all their subsidiaries to follow. In Stantec's opinion Wauleco management made no visible effort to comply with those policies and Sentry did not adequately follow up to ensure that best practices were being employed at the Property.

Using the 1970 incident of an Otis Company employee being overcome by fumes emanating from soil at the Facility as a starting point and all the events which took place in 1984 as the other time boundary, Stantec believes Wauleco knew of an ever increasing amount of hazard with respect to the hazardous substances used at the Facility but did not adequately address them with their employees. Belief that the Company wasn't aware of their responsibilities in this area is unwarranted in that their actions were during the same timeframe when discussions are underway about the toxicity of the Penta Wood preservative material, and the requirement that applicators will require licensing (CRO1636).

With respect to communications with neighbors and the general public one needs to reflect on both what was going on at the Facility as well as what was the general consciousness of the public regarding environmental issues in the 1970s and 80s.

SUMMARY OF OPINIONS

Basis for Conclusions

July 17, 2012

As for what was going on at the Facility with respect to exposure, the record contains references to having treated wood being taken off site by employees/others to be burned. (WAULECO 044596 & 044586). These records document discussions about the potential exposure of employees to Penta from burning scrap wood. The record also identifies wood waste being burned in boilers at the site (WAULECO 066953), a practice occurring in 1973. The record also refers to ceasing the practice of letting employees take treated wood home (WAULECO 044596). It appears that employees could have been exposed to hazardous materials when burning the wood residue, either onsite, or at their homes if they took treated wood home for use.

Within the general Wausau/Marathon County area during this same timeframe, the community had been inundated with the events surrounding the discovery of severe environmental contamination at the Holtz-Krause landfill which resulted in that landfill being forced to close and a new Marathon County landfill being sited, permitted and opened to replace it. If you resided within this geographic area of the state it was quite unlikely that you didn't know about these events. Additionally, in 1982 the City of Wausau municipal well field which supplied potable drinking water to the entire community, was found to be contaminated with VOCs. So, in our experience, while the national general public was being subjected to a more routine diet of news about the cause and effect of the handlings and mishandling of solids waste and hazardous substances, the people within the Wausau area were actually living thru such consequences and changes.

Based on the information Stantec reviewed, the most specific of those documents as referenced elsewhere in this report, we believe Wauleco knew all too well their risk exposure that was present with respect to discharges of contaminants to air, soil and the waters of the State. By 1984 Wauleco they had already avoided 6 years of remedial activity for completing their obligatory spill response actions plus they avoided multiple years of providing PPE to their employees. Their recognition of the exposures to their employees from the burning of sawdust and treated wood scrap while failing to adequately cover these same exposure paths in the completed assessments represents, in Stantec's opinion, another conscious effort to minimize their exposure. In our experience, other industrial entities who were confronted with such exposures chose to carefully construct public relations and participation campaigns geared toward responsibly and openly dealing with the concerns of potentially affected persons. As the record shows, Wauleco's actions with respect to both their employees and the public were anything but responsible.

6.0 References

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