

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

MIDWEST ENERGY EMISSIONS CORP.
and MES INC.,

Plaintiffs,

v.

ARTHUR J. GALLAGHER & CO., ET AL.,

Defendants.

CIV. No. 1:19-cv-01334-CJB

**FOURTH AMENDED COMPLAINT
FOR PATENT INFRINGEMENT**

JURY TRIAL DEMANDED

Plaintiff Midwest Energy Emissions Corp. and MES Inc. (collectively, “ME2C”) files this Amended Complaint against Defendants DTE Energy Resources, LLC, (“DTE”); CERT Operations II LLC, CERT Operations IV LLC, CERT Operations V LLC, CERT Operations RCB LLC (individually and collectively, “CERT”); and the additional entities referred to below as the “RC Defendants”: AJG Iowa Refined Coal LLC, Joppa Refined Coal LLC, Walter Scott Refined Coal LLC, Louisa Refined Coal, LLC, Belle River Fuels Company, LLC, Arbor Fuels Company, LLC, Portage Fuels Company, LLC, Senescence Energy Products, LLC, Rutledge Products, LLC, Alistar Enterprises, LLC, Springhill Resources LLC, Buffington Partners LLC, Bascobert (A) Holdings LLC, Larkwood Energy LLC, Cottbus Associates LLC, George Neal Refined Coal, LLC, George Neal North Refined Coal, LLC, Superior Fuels Company 1, LLC, Erie Fuels Company, LLC, Huron Fuels Company, LLC, Coronado Refined Coal, LLC, Chouteau Fuels Company, LLC, Jasper Fuels Company, LLC, Newton RC, LLC, Canadys Refined Coal, LLC, Hastings Refined Coal LLC, Jefferies Refined Coal, LLC, and Williams Refined Coal, LLC, and Marquis Industrial Company, LLC (all of these entities are referred to individually and collectively as “Defendants”) for patent infringement under 35 U.S.C. § 271. Plaintiff alleges, based on its own personal knowledge with respect to its own actions and based upon information and belief with respect to all others’ actions, as follows:

THE PARTIES

1. Midwest Energy Emissions Corp. is a Delaware corporation with its principal place of business at 670 D Enterprise Drive, Lewis Center, Ohio 43035.

2. MES Inc. is a North Dakota corporation with its principal place of business at 311 S. 4th St., STE. 118, Grand Forks, ND 58201.

3. DTE Energy Resources, LLC is a Delaware limited liability company with its principal place of business at One Energy Plaza, Detroit, MI 48222. DTE Energy Resources, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

4. Defendant CERT Operations II, LLC is a Delaware limited liability company with its principal place of business at 2100 Southbridge Parkway, Suite 585, Birmingham, AL 35209. CERT Operations II, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

5. Defendant CERT Operations IV, LLC is a Delaware limited liability company with its principal place of business at 2100 Southbridge Parkway, Suite 585, Birmingham, AL 35209. CERT Operations IV, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

6. Defendant CERT Operations V, LLC is a Delaware limited liability company with its principal place of business at 2100 Southbridge Parkway, Suite 585, Birmingham, AL 35209. CERT Operations V, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

7. Defendant CERT Operations RCB, LLC is a Delaware limited liability company with its principal place of business at 2100 Southbridge Parkway, Suite 585, Birmingham, AL 35209. CERT Operations RCB, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

8. Defendant AJG Iowa Refined Coal LLC is a Delaware limited liability company with its principal place of business at Two Pierce Place, Itasca, IL 60143. AJG Iowa Refined Coal

LLC has designated Cogency Global Inc., 850 New Burton Road, Suite 201, Dover DE 19904 as its agent for service of process.

9. Defendant Joppa Refined Coal LLC is a Delaware limited liability company with its principal place of business at or near the Joppa Power Station near Joppa, IL. Joppa Refined Coal LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

10. Defendant Walter Scott Refined Coal LLC is a Delaware limited liability company with its principal place of business at or near the Council Bluffs Energy Center (also known as the Walter Scott Energy Center) near Council Bluffs, IA. Walter Scott Refined Coal LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

11. Defendant Louisa Refined Coal, LLC is a Delaware limited liability company with its principal place of business at 6901 Dodge St., Suite 201, Omaha, NE 68132. Louisa Refined Coal, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

12. Defendant Belle River Fuels Company, LLC is a Delaware limited liability company with its principal place of business at or near the Belle River Power Plant in Saint Claire County, MI. Belle River Fuels Company, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 as its agent for service of process.

13. Defendant Arbor Fuels Company, LLC is a Delaware limited liability company with its principal place of business at 414 S. Main St, Suite 600, Ann Arbor, MI 48104. Arbor Fuels Company, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 as its agent for service of process.

14. Defendant Portage Fuels Company, LLC is a Delaware limited liability company with its principal place of business 414 S. Main St., Suite 600, Ann Arbor, MI 48104. Portage

Fuels Company, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 as its agent for service of process.

15. Defendant Senescence Energy Products, LLC is a Delaware limited liability company with its principal place of business 2100 Southbridge Parkway, Suite 585, Birmingham, AL 35209. Senescence Energy Products, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

16. Defendant Rutledge Products, LLC is a Delaware limited liability company with its principal place of business 1120 River Road, Quinton, AL 35130. Rutledge Products, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

17. Defendant Alistar Enterprises, LLC is a Delaware limited liability company with its principal place of business 2100 Southbridge Parkway, Suite 585, Birmingham, AL 35209. Alistar Enterprises, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

18. Defendant Spring Hill Resources, LLC is a Delaware limited liability company with its principal place of business at 1140 Highway 270, Maylene, AL 35114. Spring Hill Resources, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

19. Defendant Buffington Partners, LLC is a Delaware limited liability company with its principal place of business at 221 Bolivar Street, Jefferson City, MO 65101. Buffington Partners, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

20. Defendant Bascobert (A) Holdings, LLC is a Delaware limited liability company with its principal place of business at 2100 South SouthBridge Pkwy., Suite 585, Birmingham, AL 35209. Bascobert (A) Holdings, LLC has designated Corporation Service Company DBA CSC – Lawyers Inc., 211 E. 7TH Street, Suite 620, Austin, TX 78701 as its agent for service of process.

21. Defendant Larkwood Energy, LLC is a Delaware limited liability company with its principal place of business at 12747 Olive Boulevard, Suite 300, St. Louis, MO 63141. Larkwood Energy, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

22. Defendant Cottbus Associates, LLC is a Delaware limited liability company with its principal place of business at 5601 S. 59TH Street, Suite C, Lincoln, NE 68516. Cottbus Associates, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

23. George Neal Refined Coal LLC is a Delaware limited liability company with its principal place of business at or near the George Neal Station South near Salix, Iowa. George Neal Refined Coal LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

24. George Neal North Refined Coal LLC is a Delaware limited liability company with its principal place of business at or near the George Neal Station North near Sergeant Bluff, Iowa. George Neal North Refined Coal LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

25. Superior Fuels Company 1, LLC is a Delaware limited liability company with its principal place of business at 5102 S. Cant Rd., Duluth, MN 55804. Superior Fuels Company 1, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

26. Erie Fuels Company, LLC is a Delaware limited liability company with its principal place of business at 414 S. Main Street, Suite 600, Ann Arbor, MI 48104. Erie Fuels Company, LLC has designated C T Corporation System, 301 S. Bedford St., Suite 1, Madison, WI 53703 as its agent for service of process.

27. Huron Fuels Company, LLC is a foreign limited liability company with its principal place of business at One Energy Plaza, Detroit, MI 48226. Huron Fuels Company, LLC has

designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

28. Coronado Refined Coal, LLC is a Delaware limited liability company with its principal place of business at or near the Coronado Generating Station, 32060 U.S. 191, Saint Johns, AZ, 85936. Coronado Refined Coal, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

29. Chouteau Fuels Company, LLC is a Delaware limited liability company with its principal place of business at or near the Oak Grove Power Plant, 8127 Oak Grove Road, Franklin, TX 77856. Chouteau Fuels Company, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

30. Jasper Fuels Company, LLC is a Delaware limited liability company with its principal place of business at or near the Newton Power Station, 6725 North 500th St., Newton, IL 62448. Jasper Fuels Company, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

31. Newton RC, LLC is a Delaware limited liability company with its principal place of business at or near the Newton PowerPlant, 6725 North 500th St., Newton, IL 62448. Newton RC, LLC has designated The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801 as its agent for service of process.

32. Canadys Refined Coal, LLC is a Delaware limited liability company with its principal place of business at or near the Cope Generating Station, 405 Teamwork Dr., Cope, SC 29038. Canadys Refined Coal, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

33. Hastings Refined Coal LLC is a Delaware limited liability company with its principal place of business at or near the Whelan Energy Center, 4520 East South St., Hastings, NE 68901. Hastings Refined Coal LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

34. Jefferies Refined Coal, LLC is a Delaware limited liability company with its principal place of business at or near the Muscatine Generating Station, 1700 Industrial Connector Rd., Muscatine, IA 52761. Jefferies Refined Coal, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

35. Williams Refined Coal, LLC is a Delaware limited liability company with its principal place of business at or near the Williams Generating Station, 2242 Bushy Park Rd., Goose Creek, SC 29445. Williams Refined Coal, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

36. Marquis Industrial Company, LLC is a Delaware limited liability company with its principal place of business at or near the Antelope Valley Station, 294 County Rd. 15, Beulah, ND 58523. Marquis Industrial Company, LLC has designated Corporation Service Company, 251 Little Falls Drive, Wilmington, DE 19808 as its agent for service of process.

JURISDICTION AND VENUE

37. This action includes a claim of patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.* This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

38. This Court has personal jurisdiction over Defendants, because each is incorporated in and/or a limited liability company formed in Delaware. In addition, Defendants have conducted business in this district by taking advantage of the laws of this district and by forming and controlling affiliated entities involved in the acts of infringement described below.

39. Venue is proper in this district pursuant to 28 U.S.C. § 1400(b) with respect to each Defendant that resides in this District.

ASSERTED PATENTS

40. On July 9, 2019, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,343,114 (the “’114 patent”) entitled “Sorbents for the Oxidation and Removal of Mercury.” A copy of the ’114 patent is attached as Exhibit A.

41. On May 1, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,168,147 (the “’147 patent”) entitled “Sorbents for the Oxidation and Removal of Mercury.” A copy of the ’147 patent is attached as Exhibit B.

42. On March 17, 2020, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,589,225 (the “’225 patent”) entitled “Sorbents for the Oxidation and Removal of Mercury.” A copy of the ’225 patent is attached as Exhibit C.

43. On March 24, 2020, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,596,517 (the “’517 patent”) entitled “Sorbents for the Oxidation and Removal of Mercury.” A copy of the ’517 patent is attached as Exhibit D.

44. On June 2, 2020, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,668,430 (the “’430 patent”) entitled “Sorbents for the Oxidation and Removal of Mercury.” A copy of the ’430 patent is attached as Exhibit E.

FACTUAL ALLEGATIONS

The Federal Government Resolves to Regulate Mercury Emissions from Power Plants

45. In 1990, Congress passed the Clean Air Act Amendments of 1990.

46. That law required the U.S. Environmental Protection Agency (EPA) to study the impact of various air pollutants, including mercury.

47. To assist in the research, in 1992, the EPA established a National Center for Excellence at the Energy & Environmental Research Center (EERC) referred to as the Center for Air Toxic Metals (CATM).

48. In 1997 and 1998, the EPA issued two reports to Congress: Mercury Study Report to Congress (issued December 1997) and Study of Hazardous Air Pollutant Emissions from Electric Utility Steam (issued February 1998). As an outcome of these studies, the EPA found a pressing need for regulation of mercury pollution from coal-fired power plants. Unfortunately, it also found that no existing technologies were up to the task of significantly reducing the mercury pollution from those plants.

49. In the wake of these reports, various governmental and industry organizations injected millions of dollars into basic scientific research and experimental studies in the search for new mercury capture technologies.

The Inventors of the Patents-in-Suit Develop Mercury Capture Solutions

50. Researchers at the EERC were instrumental in developing new techniques for studying this problem and ultimately solving it.

51. In 2002, the EPA surveyed the state of research in this field and produced a follow-up report: Control of Mercury Emissions from Coal-Fired Electric Utility Boilers: Interim Report. This report identified some promising areas of research, and it noted that some technologies were available for reducing mercury emissions. However, the EPA recognized that there was no universal solution to this problem and that more work remained to be done.

52. During this time, the inventors of the patents-in-suit were researching the issue of mercury capture at the EERC. Through their work, they uncovered some of the complex chemistry that occurs in a coal-fired boiler.

53. They further discovered a number of methods for improving mercury capture. In particular, they found that applying a halogen additive such as bromine and bromide compounds onto coal or into a combustion chamber, when combined with sorbent injection, could dramatically reduce the mercury content of coal-fired power plant emissions.

54. By 2004, the inventors filed a provisional application that would lead to the patents in suit. This application, and the subsequently issued patents, cover some of their discoveries and various applications of their discoveries. In particular, the inventors discovered, and ultimately proved, the benefits of combining halogen treatments (e.g., bromine containing materials) in-flight with backend sorbents (e.g., activated carbon).

55. In 2011, the EPA finalized the first national standards to reduce mercury and other toxic air pollution from coal-fired plants (the Mercury and Air Toxics Standards or “MATS”). Most coal-fired power plants were required to comply with this rule by 2016.

Congress Creates the Section 45 Refined Coal Tax Credit

56. While the EPA was working on addressing the issue of mercury emissions, Congress also took action. In 2004, Congress passed the American Jobs Act, which created a new tax credit related to the production of refined coal (referred to as “Section 45 tax credits”).

57. Under this law, a refined coal producer can receive an inflation-adjusted tax credit for each ton (\$/ton) of refined coal sold to a power plant that results in a 40% reduction in mercury emissions and a 20% reduction in NOx emissions. This law has resulted in companies receiving hundreds of millions of dollars in tax credits each year.

58. Because of this highly lucrative law, financial services companies such as AJG jumped at the chance to collect the tax credits.

AJG, DTE, CERT, Chem-Mod, and the RC Defendants Reap Staggering Profits from Section 45 Tax Credits

59. AJG is an insurance brokerage and risk management services firm.

60. AJG Chief Financial Officer Douglas Howell has claimed credit for designing a business model to maximize profits based on Section 45 tax credits.

61. “Our return on investment is staggering,” Mr. Howell told analysts in a March 14, 2018 call. “Oh, 200 percent, 300 percent, 400 percent, 500 percent. I mean, just because it costs so little to develop” facilities.

62. As a result, Mr. Howell has explained that AJG will not be paying much, if any, U.S. federal income tax for many years to come.

63. According to the AJG business model, AJG does not build standalone facilities to refine coal that is then shipped around the country for use at coal plants.

64. Instead, AJG uses shell companies that are designed to lose money each year, but that ultimately result in AJG profiting from Section 45 tax credits.

65. Specifically, AJG forms a limited liability company (“LLC”) to be associated with a particular coal-fired power plant (the “Refined Coal LLC”). The paragraphs below refer to actions taken by a Refined Coal LLC, but AJG maintains control throughout this process. For

example, AJG maintains majority control, or, if it lacks majority control, AJG requires that all major decisions obtain approval from AJG.

66. Through its controlling interests in Refined Coal LLCs and Chem-Mod, AJG causes Chem-Mod to contract with the Refined Coal LLC to provide Chem-Mod chemicals, and technical, regulatory, and/or operational support to the Refined Coal LLC.

67. The Refined Coal LLC rents space on-site at a power plant where it can briefly take possession of coal from the power plant. It purchases coal from the plant, treats it with Chem-Mod chemicals, and then sells the coal—now considered “refined coal”—back to the coal-fired power plant at the same price or for a loss.

68. For example, the Refined Coal LLC can take possession of coal as it moves along a conveyor belt toward a combustion chamber. It can then add chemicals to the coal and return it to a conveyor belt leading to the combustion chamber.

69. The Chem-Mod chemicals applied to the coal include Br_2 , HBr , a bromide compound such as CaBr_2 , or a combination thereof.

70. One important aspect of this plan is that an LLC is a pass-through entity for tax purposes. That is, the benefits of the Section 45 tax credits pass through to AJG and other owners of the Refined Coal LLC.

71. AJG sells ownership in the LLC based at least in part on the value of those tax credits.

72. By using the Refined Coal LLCs as shell companies, AJG is able to operate companies that are designed to lose money, but that ultimately benefit AJG because they allow it to obtain hundreds of millions of dollars in federal tax credits.

73. This model has been emulated by others, such as DTE and CERT.

74. DTE and CERT both use Chem-Mod supplied chemicals and provide refined coal through Refined Coal LLCs in order to obtain Section 45 Tax Credits.

75. In order to obtain the benefits of Section 45 Tax Credits, AJG, DTE, CERT, Chem-Mod, and the RC Defendants must comply with 26 U.S.C. § 45 by demonstrating that the alleged

refined coal is “a liquid, gaseous, or solid fuel produced from coal (including lignite) or high carbon fly ash, including such fuel used as a feedstock,” “is sold by the taxpayer with the reasonable expectation that it will be used for the purpose of producing steam,” and “is certified by the taxpayer as resulting (when used in the production of steam) in a qualified emission reduction.” To demonstrate “qualified emission reduction,” these parties must demonstrate “a reduction of at least 20 percent of the emissions of nitrogen oxide and at least 40 percent of the emissions of either sulfur dioxide or mercury released when burning the refined coal (excluding any dilution caused by materials combined or added during the production process), as compared to the emissions released when burning the feedstock coal or comparable coal predominantly available in the marketplace as of January 1, 2003.”

76. While the parties could qualify for this credit by demonstrating a reduction in either sulfur dioxide or mercury, on information and belief, they have elected to focus on a reduction in mercury rather than sulfur dioxide.

77. On information and belief, for each coal-fired power plant using activated carbon injection, AJG, DTE, CERT, Chem-Mod, and the RC Defendants perform certification testing at least every six months in order to maintain their eligibility for section 45 tax credits.

78. During this case, Defendants identified the refined coal LLCs that have supplied refined coal to power plants that use activated carbon injection. Specifically, Defendants have identified that at least each of Joppa Refined Coal LLC, Walter Scott Refined Coal LLC, Louisa Refined Coal, LLC, Belle River Fuels Company, LLC, Arbor Fuels Company, LLC, Portage Fuels Company, LLC, Senescence Energy Products, LLC, Rutledge Products, LLC, Alistar Enterprises, LLC, Springhill Resources LLC, Buffington Partners LLC, Bascobert (A) Holdings LLC, Larkwood Energy LLC, Cottbus Associates LLC, George Neal Refined Coal, LLC, George Neal North Refined Coal, LLC, Superior Fuels Company 1, LLC, Erie Fuels Company, LLC, Huron Fuels Company, LLC, Coronado Refined Coal, LLC, Chouteau Fuels Company, LLC, Jasper Fuels Company, LLC, Newton RC, LLC, Canadys Refined Coal, LLC, Hastings Refined Coal LLC, Jefferies Refined Coal, LLC, and Williams Refined Coal, LLC, Marquis Industrial Company,

LLC have supplied refined coal with added bromide compound to coal-fired power plants that use activated carbon injection, thus demonstrating knowledge and intent to induce the infringing conduct, and/or willful blindness as to the infringing conduct as to each Defendant that operates a refined coal facility associated with these Defendants.

79. On information and belief, Defendants learn of these plant's use of activated carbon by working with the plant. These Defendants must have access to coal-fired power plants to determine logistics for installing refined coal equipment, storing and supplying chemicals, and operating and maintaining equipment. As part of that process, they would be able to witness activated carbon injection equipment and on-site activated carbon, as this material is readily recognizable to persons familiar with mercury control equipment and procedures. Moreover, individuals on-site would be required to comply with safety protocols at the plant. For example, AJG, DTE, CERT, Chem-Mod, and the RC Defendants would be instructed as to plant operations and protocols for interfering with aspects of plant operation that are not under the control of AJG, DTE, CERT, Chem-Mod, and the RC Defendants. In addition, they would be aware of warnings and safety information regarding the hazards of activated carbon. As a result, those individuals would be aware of the plant's use of activated carbon injection.

80. Even if it were possible for AJG, DTE, CERT, Chem-Mod, and the RC Defendants to supply, maintain, and operate mercury control equipment on-site at a coal-fired power plant without learning of the other mercury control equipment on-site at the plant, on information and belief, they would learn of the plant's use of sorbent containing activated carbon through routine conversation and communications with individuals at the coal-fired power plant that are necessary to ensure coordination and smooth operation of the plant. For example, if the plant were to unilaterally reduce its activated carbon injection rate, or AJG, DTE, CERT, Chem-Mod, and the RC Defendants were to unilaterally reduce the amount of bromine added to the coal, this could hinder the plant's ability to comply with state and federal mercury regulations and/or the certification process for section 45 tax credits. Thus, AJG, DTE, CERT, Chem-Mod, and the RC

Defendants coordinate with coal-fired power plants by keeping each other aware of their respective bromine and activated carbon usage rates.

81. On information and belief, AJG, DTE, CERT, Chem-Mod, and the RC Defendants discuss with owners and operators of coal-fired power plants at least the following: how they will create the refined coal onsite, the equipment that would be installed, the location and integration of their equipment into the coal conveyance system, how the certification tests would be performed, how the plant operates, the plant layout and equipment, the emissions control equipment, and the mercury control system, such as the activated carbon injection equipment and the effect that the sorbent comprising activated carbon would have on the test results (emissions reductions), the impact and benefits the refined coal would have on the plant's mercury control strategy, and how best to combine and integrate refined coal into the plant's approach for an optimum solution for compliance (e.g., how best to set the quantities for bromine and activated carbon so as to minimize overall cost and balance of plant effects).

82. Moreover, one of the benefits of using coal with added bromine and/or bromide at a coal-fired power plant with an activated carbon injection system is that the bromine and/or bromide enhances the performance of the activated carbon. This results in a reduced need for emission controls (e.g., reducing the quantity of activated carbon that would otherwise be required). It is reasonable to infer that AJG, DTE, CERT, Chem-Mod, and the RC Defendants are aware of this fact and take it into consideration when marketing their offerings to coal-fired power plants and when negotiating contracts with coal-fired power plants.

83. For example, AJG CFO Doug Howell has stated: "people have asked what does it really cost to produce this and where does it go? You can see that the materials that we use are \$0.80 working from the bottom left, labor and other plant operating costs cost about \$0.72 a ton, the utility gets—we pay them rent for putting these plants on their property, or we give them a discount on the coal they produce of about \$0.45, and then there's a license fee that goes to Chem-Mod – about \$0.30. Now, it's important to also know that not only does the utility—the reason why they participate in these projects is that they've got a financial incentive to participate in it,

but they also receive the improved environmental results basically for free and they get a better ash and favorable operating results. So the utility is part of this process and they have a financial incentive and an environment incentive. It's very important for everybody to understand that this technology works to help the utilities solve new emissions standards.”

84. As another example, a refined coal contract between Belle River Fuels LLC (an AJG and Chem-Mod affiliated Refined Coal LLC) and DTE specifically references the reduced quantity of activated carbon sorbent (not elimination) as a benefit of the arrangement. (Attached as Exhibit F). At a minimum, this demonstrates that AJG and Belle River Fuels LLC are aware of activated carbon use at coal-fired power plants to which they supply refined coal. It is further reasonable to infer that these parties are not outliers, but rather that DTE, CERT, Chem-Mod, and the other RC Defendants have similar knowledge and require similar contractual provisions.

85. In addition, the use of high quantities of activated carbon injection can discolor the fly ash produced by a coal-fired power plant. This may prevent the plant from selling the fly ash to cement producers, and instead require it to take on the cost of disposing of the fly ash. Providing bromine and/or bromide additives onto the coal combusted at a coal-fired power plant can reduce, the quantity of activated carbon required for mercury capture and thus preserve the plant's ability to sell fly ash.

86. Chem-Mod advertises that its bromine-containing coal additives improve fly ash saleability. Thus, Chem-Mod specifically markets its bromine-containing additives to coal-fired power plants that use sorbents comprising activated carbon. Similarly, the contract between DTE and Belle River Fuels LLC also describes this fly ash benefit. Because AJG, DTE, CERT, and the RC Defendants work with Chem-Mod and use Chem-Mod, it is reasonable to infer that they are aware of this purported benefit and Chem-Mod's marketing. It is also reasonable to infer that AJG, DTE, CERT, and the RC Defendants also rely on this knowledge and Chem-Mod's marketing materials when negotiating contracts with coal-fired power plants, and that they similarly target their efforts toward coal-fired power plants that they know use, and will continue to use, activated carbon injection systems.

87. An activated carbon injection system for mercury control requires an upfront cost and ongoing costs for operation. Plants with such systems installed operate the systems in order to comply with state and federal regulations regarding mercury emissions. Were a plant to stop operating its activated carbon injection system, it could face fines that would destroy the economic incentives for dealing with a refined coal provider, or be shut down.

88. AJG, DTE, CERT, Chem-Mod, and the RC Defendants are aware of state and federal mercury regulations and the economic incentives of coal-fired power plants with activated carbon injection systems.

89. Thus, AJG, DTE, CERT, Chem-Mod, and the RC Defendants must necessarily know and intend that the coal plants will go on to perform the step of injecting activated carbon.

90. Alternatively, if AJG, DTE, CERT, Chem-Mod, and/or one of the RC Defendants contend that they somehow avoid learning of a plant's use of sorbent comprising activated carbon, they are acting with willful blindness.

91. Once AJG, DTE, CERT, Chem-Mod, and/or one of the RC Defendants has provided section 45 certification of qualified emissions reductions for a plant, the amount of bromine and/or bromide applied to the coal will need to be tailored (chemically adjusted) depending on the ongoing needs of the plant (e.g., when considering a new coal supply that has different chemical properties or is mined from a different location, or operations of the plant change).

92. When such tailoring occurs, the coal-fired power plant must ensure that it does not cause the plant to emit mercury (or other emissions such as SO₂, NO_x, and PM)) in excess of state or federal mercury regulations. The refined coal provider (AJG, DTE, CERT, Chem-Mod, and/or one of the RC Defendants) must ensure that the tailoring will not interfere with its ability to provide section 45 certification. On information and belief, the parties must keep each other apprised of the bromine, bromide, and activated carbon in use to ensure that they are able to comply with regulatory requirements. For example, plant personnel have requested (communicated to at least

some of the refined coal provider Defendants) that the bromine concentration in the refined coal be altered during testing and evaluation of alternative carbon suppliers.

93. Thus, AJG, DTE, CERT, Chem-Mod, and the RC Defendants must know and intend that the coal plants will go on to perform the step of providing sorbent comprising activated carbon after the refined coal with added HBr, Br₂, and/or bromide has been tailored to account for changing circumstances.

94. Alternatively, if AJG, DTE, CERT, Chem-Mod, and/or one of the RC Defendants contend that they somehow avoid learning of a plant's use of sorbent comprising activated carbon, they are acting with willful blindness.

95. When AJG, DTE, CERT, Chem-Mod, and/or one of the RC Defendants provides refined coal to a coal plant with an activated carbon injection system, they intend for the plant to continue to operate that system by injecting sorbent comprising activated carbon so that these Defendants may continue to receive the benefits of Section 45 tax credits.

96. Thus, when AJG, DTE, CERT, Chem-Mod, and/or one of the RC Defendants provides refined coal on the conveyance leading to the combustion chamber of a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod, and the RC Defendants know that this refined coal has been specifically tailored and certified for that plant, and that the provided refined coal has no substantial non-infringing use (i.e., it cannot reasonably be used for purposes other than to be combusted at the plant where sorbent comprising activated carbon will later be injected).

97. In addition, even if the provided refined coal could have had some non-infringing use, because AJG, DTE, CERT, Chem-Mod, and one of the RC Defendants must sell the refined coal "with the reasonable expectation that it will be used for the purpose of producing steam," and as explained above, the refined coal is only certified for a particular plant (i.e., a plant that uses activated carbon), it is reasonable to infer that they require the coal plant to combust the provided refined coal or at least some significant portion of it in accordance with those expectations, i.e., not in some non-infringing way.

ME2C Attempts to Compete in the Market for Mercury Capture Technologies

98. ME2C is the commercial extension of the patented technology.

99. MES, Inc. obtained an exclusive license to the '147 patent and pending related applications from the EERC. Midwest Energy Emissions Corp. later obtained an assignment of the patents-in-suit from the EERC including any rights retained by the EERC to receive past damages, and MES, Inc. agreed to terminate its exclusive license at that time. Thus, during the time period of alleged infringement, MES, Inc. and/or Midwest Energy Emissions Corp. held all substantial rights in the patents-in-suit.

100. ME2C develops, markets, and sells products and services that practice the patented technology.

101. ME2C's product development efforts have been led by named inventor and Chief Technology Officer John Pavlish. ME2C has developed both sorbent enhancement additives and activated carbon sorbents for practicing the technology described in the patents-in-suit and for practicing other patented methods owned by ME2C.

102. ME2C has also publicized its patent portfolio and explained the scope of the patented technology through its website, its interactions with customers and potential customers, and through presentations at industry events such as the MEGA Symposium, the Energy, Utility & Environment Conference, Lignite Energy Conference, and the Air Quality Conference. Representatives of Defendants have attended these conferences and received materials from such conferences.

103. ME2C has attempted to compete in the market for mercury capture technologies. In particular it attempted to negotiate supply contracts with coal-fired power plants in anticipation of MATS regulations that became effective in 2015 and 2016, and also periodically afterwards as plants re-evaluate their MATS compliance strategies.

104. However, ME2C it is at an unfair disadvantage with respect to the RC Defendants that encourage power plants to use ME2C's patented technology instead of developing new

technologies for refined coal. These RC Defendants induce power plants to infringe the patents-in-suit by offering the technology at no or artificially low costs to the plant.

105. AJG CFO Douglas Howell has explained, “the reason why [coal-fired power plants] participate in these [Section 45 Tax Credit] projects is that they’ve got a financial incentive to participate in it, but they also receive the improved environmental results basically for free and they get a better ash and favorable operating results.”

106. In addition, because the power plants connected to an Accused RC Facility have decided to infringe ME2C’s patents, they now purchase various materials from different suppliers at artificially deflated prices and employ them in a manner that infringes ME2C’s patents.

107. Despite these difficulties, ME2C has sold its products and services to various power plants throughout the country.

ME2C’s Interactions with Defendant Vistra

108. In 2012, ME2C contracted with Luminant Generation Company LLC (“Luminant”) to perform testing of the patented methods at various Luminant power plants.

109. At least as early as 2012, ME2C informed Luminant of its patent portfolio, including the ’147 patent and parent applications to the ’114 patent.

110. By 2012, ME2C had also explained that its patents cover the use of halogen-based sorbent enhancement additives and backend carbon-based sorbents.

111. After successfully testing its patented technology at Luminant plants, Luminant signed a Master Supply Agreement with ME2C.

112. Luminant is now a subsidiary of Vistra.

113. Through Luminant, ME2C has informed Vistra of the patents-in-suit and also explained that its patents cover the use of halogen-based sorbent enhancement additives and backend carbon-based sorbents.

114. ME2C also attempted to develop business with other affiliates of Vistra. For example, ME2C has had various interactions with Vistra subsidiary Dynegy Inc. and its subsidiaries (“Dynegy”).

115. Beginning in 2011, ME2C and Dynege evaluated the ME2C process for use at the Joppa Steam Plant in Massac county Illinois.

116. As part of that process, ME2C informed Dynege of its patent portfolio, including the '147 patent and parent applications to the '114 patent.

117. ME2C has informed Dynege that its patents cover the use of halogen-based sorbent enhancement additives and backend carbon-based sorbents.

118. Although the test results were favorable, Dynege ultimately determined not to sign a supply agreement with ME2C.

119. Throughout 2014 and 2015, ME2C had further interactions with Dynege and conducted a further demonstration at the Edwards Power Station in Peoria County, Illinois.

120. Again, Dynege declined to sign a supply agreement with ME2C.

121. In 2018, Vistra acquired Dynege.

122. That same year, Vistra requested that ME2C again perform a demonstration at the Joppa Steam Plant.

123. ME2C informed Vistra of its patent portfolio and also explained that its patents cover the use of halogen-based sorbent enhancement additives and backend carbon-based sorbents.

124. ME2C also attempted to negotiate a supply agreement with Vistra for the Joppa Steam Plant.

125. However, the Joppa Steam Plant was receiving refined coal treated with halogen from a refined coal producer.

126. Joppa Refined Coal LLC, has and continues to provide refined coal to the Joppa Steam Plant. AJG, Chem-Mod and Joppa Refined Coal LLC provide financial, technical, and contractual incentives to Vistra to burn refined coal as part of their scheme to collect Section 45 Tax Credits.

127. The Joppa Steam Plant is owned and/or operated by Vistra in the United States.

128. Vistra negotiates and/or procures products and/or services related to mercury control for use at the Joppa Steam Plant.

129. The Joppa Steam Plant has burned and/or burns coal that has added bromine and/or bromide.

130. The Joppa Steam Plant combusts coal along with added bromine and/or bromide.

131. The Joppa Steam Plant injects sorbent material comprising activated carbon downstream of the combustion chamber.

132. The Joppa Steam Plant contracts with Joppa Refined Coal LLC to obtain coal with added bromine and/or bromide.

133. The Joppa Steam Plant uses added bromine and/or bromide and activated carbon to ensure compliance with federal and state MATS regulations.

134. In addition to the foregoing, on July 17, 2019, ME2C provided notice to Vistra of the '114 and '147 patents and of the acts constituting infringement by filing the original complaint in this case.

135. It is reasonable to infer that Vistra would have reviewed the prosecution history for the '114 and '147 patents and would be generally aware of other patents in the same family.

136. On June 29, 2020, ME2C provided notice to Vistra of the '225, '517, and '430 patents and of the acts constituting infringement by providing Vistra with a draft amended complaint.

ME2C's Interactions with Defendant AEP

137. In 2011, ME2C met with officials at AEP to discuss ME2C's mercury capture products and services.

138. In or around that meeting, ME2C informed AEP of its patent portfolio.

139. The parties did not enter into a commercial agreement at that time.

140. In 2013, representatives of AEP attended the Air Quality 9 conference and received a presentation on the patented technology which identified the '147 patent and parent applications to the '114 patent.

141. In 2016, ME2C and AEP discussed potential work related to AEP's H.W. Pirkey Power Plant.

142. ME2C and AEP, including its subsidiary Southwestern Electric Power Co. contracted for ME2C to provide demonstration testing at the H.W. Pirkey Power Plant.

143. Through those interactions, ME2C again reminded AEP of its patent portfolio and explained that its patents covered the use of halogen-based sorbent enhancement additives and backend carbon-based sorbents.

144. ME2C specifically identified the '147 patent and parent applications to the '114 patent to AEP.

145. Between 2016 and 2018, ME2C explained its technology to AEP, provided technical and economic presentations, and performed demonstration testing at AEP's H.W. Pirkey Power Plant in Harrison County, Texas.

146. The H.W. Pirkey Power Plant is owned and/or operated by AEP in the United States.

147. AEP negotiates for and/or procures products and/or services related to mercury control for use at the H.W. Pirkey Power Plant.

148. The H.W. Pirkey Power Plant combusts coal along with added bromine and/or bromide.

149. The H.W. Pirkey Power Plant injects sorbent material comprising activated carbon downstream of the combustion chamber.

150. The H.W. Pirkey Power Plant employs halogenated PAC (Powdered Activated Carbon) sorbent injection as a form of mercury control.

151. The H.W. Pirkey Power Plant uses added bromine and/or bromide and activated carbon to ensure compliance with federal MATS regulations.

152. In addition to the foregoing, on July 17, 2019, ME2C provided notice to AEP of the '114 and '147 patents and of the acts constituting infringement by filing the original complaint in this case.

153. It is reasonable to infer that AEP would have reviewed the prosecution history for the '114 and '147 patents and would be generally aware of other patents in the same family.

154. On June 29, 2020, ME2C provided notice to AEP of the '225, '517, and '430 patents and of the acts constituting infringement by providing AEP with a draft amended complaint.

155. On July 15, 2020, ME2C again provided notice to AEP of the patents-in-suit and of the acts constituting infringement by filing the second amended complaint.

156. On September 21, 2020, ME2C provided notice to AEP of the patents-in-suit and of the acts constituting infringement by providing AEP with a draft second amended complaint.

157. Despite knowledge of ME2C's patents, AEP has elected to infringe ME2C's patents at its coal-fired power plants including at the H.W. Pirkey Power Plant.

ME2C's Interactions with NRG

158. In 2012, ME2C had various interactions with NRG to discuss ME2C's patented technology.

159. Over the next few years, NRG evaluated its options for coming into compliance with upcoming MATS regulations.

160. During that time, ME2C identified its patents to NRG and explained the operation of its patented technology.

161. The parties also considered having ME2C perform various demonstrations of the technology at NRG power plants.

162. In addition to the foregoing, on July 17, 2019, ME2C provided notice to NRG of the '114 and '147 patents and of the acts constituting infringement by filing the original complaint in this case.

163. It is reasonable to infer that NRG would have reviewed the prosecution history for the '114 and '147 patents and would be generally aware of other patents in the same family.

164. On June 29, 2020, ME2C provided notice to NRG of the '225, '517, and '430 patents and of the acts constituting infringement by providing NRG with a draft amended complaint.

165. On July 15, 2020, ME2C again provided notice to NRG of the patents-in-suit and of the acts constituting infringement by filing the second amended complaint.

166. On September 21, 2020, ME2C provided notice to NRG of the patents-in-suit and of the acts constituting infringement by providing NRG with a draft second amended complaint.

167. Nonetheless, NRG elected to infringe ME2C's patents.

ME2C's Interactions with Defendant Talen

168. Talen owns and/or operates the Colstrip and other power plants.

169. Prior to 2015 those plants were owned and/or operated by PPL.

170. In 2013, representatives of PPL attended the Air Quality 9 conference and received a presentation on the patented technology which identified the '147 patent and parent applications to the '114 patent.

171. In 2013, ME2C met with PPL employees tasked with understanding and designing mercury control procedures, including Jon Boucher, Bill Neumiller, and Steve Craig, to discuss the use of ME2C's patented technology at power plants in the PPL fleet, including Colstrip and other plants.

172. ME2C specifically identified the '147 patent and the parent patent to the '114 patent to at least Jon Boucher, and explained that these patents covered the use of halogen-based sorbent enhancement additives and backend carbon-based sorbents.

173. In 2015, PPL spun off a portion of its business to form Talen.

174. At least Jon Boucher has remained with Talen.

175. In addition, operation of a coal-fired power plant can be dangerous and complicated, requiring a team of qualified engineers. Similarly, ensuring compliance with mercury capture regulations requires managing complex chemical reactions occurring at the plant. Accordingly, it is reasonable to infer that even when Talen took over control of the plants at issue, it would have retained additional individuals knowledgeable of plant operations and mercury control processes at the plants. Thus, it is likely that at least some of those additional individuals that met with and/or received information about ME2C's patented technology would have remained with Talen as of 2015, or would have shared information related to mercury control at the plants with other Talen

personnel and management as Talen is now responsible for complying with state and federal mercury regulations..

176. In addition to the foregoing, on July 17, 2019, ME2C provided notice to Talen of the '114 and '147 patents and of the acts constituting infringement by filing the original complaint in this case.

177. It is reasonable to infer that Talen would have reviewed the prosecution history for the '114 and '147 patents and would be generally aware of other patents in the same family.

178. On June 29, 2020, ME2C provided notice to Talen of the '225, '517, and '430 patents and of the acts constituting infringement by providing Talen with a draft amended complaint.

179. On July 15, 2020, ME2C again provided notice to Talen of the patents-in-suit and of the acts constituting infringement by filing the second amended complaint.

180. On September 21, 2020, ME2C provided notice to Talen of the patents-in-suit and of the acts constituting infringement by providing Talen with a draft second amended complaint.

181. Despite being aware of ME2C's patents, Talen has elected to infringe those patents.

ME2C's Interactions with Defendant AJG, DTE, CERT, Chem-Mod, and RC Defendants

182. AJG, DTE, CERT, Chem-Mod, and RC Defendants have worked with the EERC to conduct testing related to their coal treatment processes. For example, they have relied on the EERC to demonstrate that the processes employed by refined coal facilities qualify for Section 45 Tax Credits. Through those interactions, it is likely that they became aware of the patents-in-suit and/or related applications as they were initially developed by the inventors while they were at the EERC.

183. In addition, at least Chem-Mod participates in conferences where ME2C describes its patented technology. For example, Chem-Mod president Murray F. Abbott attended the 2018 MEGA conference where ME2C described the technology at issue in this case and explained that it was covered by its patents. ME2C also referred attendees to its website which has additional information regarding its patents.

184. Given the close relationship between Chem-Mod, AJG, DTE, CERT, and the RC Defendants, those Defendants know of ME2C's patented technology and patent portfolio and/or are willfully blind to ME2C's patents.

185. In addition, ME2C is one of a small number of companies that competes with Chem-Mod, AJG, DTE, CERT, and the RC Defendants to provide bromine-containing additives for mercury control. It is reasonable to infer that these companies have done at least some due diligence on potential competitors. During that process, it is likely that they would have discovered the patents-in-suit from the U.S. Patent Office, Google Patents, ME2C publications and product literature, and/or ME2C's website.

186. For example, prior to filing this lawsuit, AJG acknowledged that it could face claims of patent infringement for its refined coal activities. This indicates that it has performed some due diligence to identify patents potentially relevant to its business. It has advertised to investors and/or potential investors that the risk of a patent infringement finding is mitigated by the fact that Chem-Mod has patent infringement insurance. This indicates that Chem-Mod has also performed some due diligence to identify patents potentially relevant to its business. Given the limited number of participants in the relevant market, it is reasonable to infer that Chem-Mod's decision to purchase patent infringement insurance, and AJG's reliance on that insurance, were motivated at least in part by their awareness of ME2C's patents and the risk of infringing those patents.

187. Because CERT, DTE, and the RC Defendants have emulated AJG's business model and also use Chem-Mod as a supplier, it is reasonable to infer that these parties would have also been aware of ME2C's patents either as a result of their own due diligence, or as part of their interactions with Chem-Mod and/or AJG.

188. Given that a company's internal knowledge and motivation for purchasing liability insurance is often not publicly available, further evidence regarding these Defendants' pre-suit knowledge of the patents-in-suit is likely solely within their possession and available to ME2C only through discovery.

189. In addition to the foregoing, on July 17, 2019, ME2C provided notice to AJG, DTE, CERT, Chem-Mod, and RC Defendants¹ of the '114 and '147 patents and of the acts constituting infringement by filing the original complaint in this case.

190. It is reasonable to infer that AJG, DTE, CERT, Chem-Mod, and RC Defendants would have reviewed the prosecution history for the '114 and '147 patents and would be generally aware of other patents in the same family.

191. On June 29, 2020, ME2C provided notice to AJG, DTE, CERT, Chem-Mod, and RC Defendants of the '225, '517, and '430 patents and of the acts constituting infringement by providing AJG, DTE, CERT, Chem-Mod, and RC Defendants with a draft amended complaint.

192. On July 15, 2020, ME2C again provided notice to AJG, DTE, CERT, Chem-Mod, and RC Defendants of the patents-in-suit and of the acts constituting infringement by filing the second amended complaint.

193. On September 21, 2020, ME2C provided notice to AJG, DTE, CERT, Chem-Mod, and RC Defendants of the patents-in-suit and of the acts constituting infringement by providing AJG, DTE, CERT, Chem-Mod, and RC Defendants with a draft second amended complaint.

194. Each of the RC Defendants have been operated by the same small groups of individuals. These groups of individuals include at least Jeff Green and Leah Schatt with respect to CERT and CERT-affiliated RC Defendants (including Senescence Energy Products, LLC, Rutledge Products, LLC, Alistar Enterprises, LLC, Springhill Resources LLC, Buffington Partners LLC, Bascobert (A) Holdings LLC, Larkwood Energy LLC, and Cottbus Associates LLC), Eddie Turner, Marc Levine, Rick Thomas, Vince Inendino and Sally Batanian with respect to AJG and

¹ Senescence Energy Products, LLC, Rutledge Products, LLC, Alistar Enterprises, LLC, Springhill Resources LLC, Buffington Partners LLC, Bascobert (A) Holdings LLC, Larkwood Energy LLC, Cottbus Associates LLC, George Neal South Refined Coal, LLC, George Neal North Refined Coal, LLC, Superior Fuels Company 1, LLC, Erie Fuels Company, LLC, Huron Fuels Company, LLC, Coronado Refined Coal, LLC, Chouteau Fuels, LLC, Jasper Fuels Company, LLC, Newton RC, LLC, Canadys Refined Coal LLC, Hastings Refined Coal, LLC, Jefferies Refined Coal, LLC, Williams Refined Coal, LLC, Marquis Industrial Company, LLC have been added to this case in subsequent amendments to the complaint and would at least have notice of ME2C's claims based on receiving copies of those complaints.

the AJG-affiliated RC Defendants (including AJG Iowa Refined Coal LLC; Joppa Refined Coal LLC; Louisa Refined Coal, LLC; Walter Scott Refined Coal LLC, George Neal Refined Coal, LLC, George Neal North Refined Coal, LLC, Coronado Refined Coal, LLC, Canadys Refined Coal LLC, Hastings Refined Coal, LLC, Jefferies Refined Coal, LLC, Williams Refined Coal, LLC, Marquis Industrial Company, LLC), and Kerry Kaminski, Christopher Berkimer, and Katie Panczak with respect to DTE and the DTE-affiliated RC Defendants (including Arbor Fuels Company, LLC; Belle River Fuels Company, LLC; Portage Fuels Company, LLC; Superior Fuels Company 1, LLC; Erie Fuels Company, LLC; Huron Fuels Company, LLC Chouteau Fuels, LLC, Jasper Fuels Company, LLC; Newton RC, LLC).

195. Defendants have also performed test runs at power plants where they have learned of activated carbon use at the power plant. At least Katie Panczak and K. Fleming (on behalf of DTE), and Sally Batanian (former president of AJG Coal LLC, Gallagher Financial Services Inc., AJG Financial Services Inc., Gallagher Clean Energy LLC and Chem-Mod LLC) have contracted to perform the patented method during “test burns” at accused power plants. During this process, the power plants have provided those individuals with information regarding their use of activated carbon injection.

196. In addition, prior to the filing of this lawsuit and the beginning of AJG’s refined coal operations, at least Sally Batanian researched potential patents related to the accused refined coal operations.

197. Ms. Batanian also had interactions with, and attended test runs at the EERC when AJG was developing its refined coal process and business plans. During that time, the EERC, working on behalf of AJG, performed coal combustion tests using bromine additives and activated carbon injection. On information and belief, at least Ms. Batanian learned of the ME2C patent applications that would lead to the patents-in-suit, or she was willfully blind to those applications.

198. Ms. Batanian also testified that information about the patent review conducted by AJG was communicated from attorneys for AJG to attorneys for licensees of the Chem-Mod process. Katie Panczak testified that DTE, a licensee for the Chem-Mod process engaged patent

counsel to review the refined coal process when DTE was considering entering the market for refined coal. On information and belief, DTE learned of the ME2C applications that would lead to the patents-in-suit, or DTE was willfully blind to those applications, as a result of that patent review.

199. On information and belief, these individuals have been contacted regarding this case and are aware of the issues involved in this litigation.

200. On information and belief, these individuals have knowledge of ME2C's patents, claims and the conduct accused of infringement in this case. In the alternative, those individuals have been willfully blind to those facts by taking steps to deliberately avoid learning of facts alleged in ME2C's complaint. Accordingly, for any RC Defendant that has been included in an amendment to ME2C's complaint, that RC Defendant has already been aware of: ME2C's patents; ME2C's claims; the conduct accused of infringement by ME2C; and the fact that ME2C has expressed its intent to name the remaining John Doe Defendants for engaging in the same conduct accused with respect to the named Defendants, at least as of the filing of the original complaint in this case.

201. Despite being aware of ME2C's patents, AJG, DTE, CERT, Chem-Mod, and RC Defendants have continued to infringe.

Defendants' Acts of Infringement

202. The power plants connected to an Accused RC Facility each operate at least one coal-fired power plant where they combust coal in a combustion chamber with bromine and/or bromide that has been added to the coal and/or that has been provided to the combustion chamber, and where they inject a sorbent material comprising activated carbon downstream of the combustion chamber (the "Accused Coal Plants"). The Accused Coal Plants are not limited to the specifically named, exemplary coal plants named above.

203. In doing so, the power plants connected to an Accused RC Facility perform the methods claimed by the patents-in-suit, and thus directly infringe the patents-in-suit.

204. As the parent of the other NRG entities, NRG Energy Inc. induces the other NRG entities to perform the steps of the patented methods.

205. On information and belief and based on ME2C's past business encounters with NRG, NRG Energy Inc. does so by exercising control over subsidiaries, providing technical, administrative, logistical and financial services to subsidiaries, and/or negotiating standard form or bulk agreements for products and services related to mercury control. For example, NRG Energy Inc. negotiates or exercises veto power over decisions to sign supply contracts for activated carbon and bromine-containing additives. In so doing, NRG Energy Inc. takes part in the decisions regarding supply contracts and influences the other NRG entities to select suppliers for the plant, including those that provide bromine-containing additives and activated carbon.

206. As the parent of the other Talen entities, Talen Energy Corporation induces the other Talen entities to perform the steps of the patented methods.

207. On information and belief and based on ME2C's business encounters with PPL and the fact that Talen retained at least some PPL employees, Talen Energy Corporation does so by exercising control over subsidiaries, providing technical, administrative, logistical and financial services to subsidiaries, and/or negotiating standard form or bulk agreements for products and services related to mercury control. For example, Talen Energy Corporation negotiates or exercises veto power over decisions to sign supply contracts for activated carbon and bromine-containing additives. In so doing, Talen Energy Corporation takes part in the decisions regarding supply contracts and influences the other Talen entities to select suppliers for the plant, including those that provide bromine-containing additives and activated carbon.

208. AJG, DTE, CERT, Chem-Mod, and the RC Defendants operate RC facilities that receive coal, add bromine and/or bromide such as CaBr_2 to the coal, and then provide that "refined" coal to a coal-fired power plant that injects a sorbent material comprising activated carbon downstream of the combustion chamber (the "Accused RC Facilities").

209. Each of Arthur J. Gallagher & Co., Gallagher Clean Energy, LLC, and AJG Coal, LLC; DTE REF Holdings, LLC, DTE REF Holdings II LLC; CERT Coal Holdings LLC, CERT

Holdings LLC, CERT Holdings 2018, LLC, CERT Operations LLC, CERT Operations II LLC, CERT Operations III LLC, CERT Operations IV LLC, CERT Operations V LLC, CERT Operations RCB LLC; AJG Iowa Refined Coal LLC, Joppa Refined Coal LLC, Walter Scott Refined Coal LLC, Louisa Refined Coal, LLC, Belle River Fuels Company, LLC, Arbor Fuels Company, LLC, Portage Fuels Company, LLC, Senescence Energy Products, LLC, Rutledge Products, LLC, Alistar Enterprises, LLC, Springhill Resources LLC, Buffington Partners LLC, Bascobert (A) Holdings LLC, Larkwood Energy LLC, Cottbus Associates LLC, George Neal South Refined Coal, LLC, George Neal North Refined Coal, LLC, Superior Fuels Company 1, LLC, Erie Fuels Company, LLC, Huron Fuels Company, LLC, Coronado Refined Coal, LLC, Chouteau Fuels Company, LLC, Jasper Fuels Company, LLC, Newton RC, LLC, Canadys Refined Coal, LLC, Hastings Refined Coal LLC, Jefferies Refined Coal, LLC, and Williams Refined Coal, LLC, and Marquis Industrial Company, LLC operate at least one Accused RC Facility either by directly owning the facility, directly controlling the facility, or indirectly exercising control of the facility through a subsidiary that is either named above or referred to as a John Doe LLC. For example, Arthur J. Gallagher & Co. owns and controls Walter Scott Refined Coal LLC which directly operates a refined coal facility at a power plant that directly infringes by supplying bromine-containing refined coal to a combustion chamber and injecting activated carbon sorbent downstream of the combustion chamber.

210. At least CERT Operations II LLC, CERT Operations IV LLC, CERT Operations V LLC, CERT Operations RCB LLC; AJG Iowa Refined Coal LLC, Joppa Refined Coal LLC, Walter Scott Refined Coal LLC, Louisa Refined Coal, LLC, Belle River Fuels Company, LLC, Arbor Fuels Company, LLC, Portage Fuels Company, LLC, Senescence Energy Products, LLC, Rutledge Products, LLC, Alistar Enterprises, LLC, and Springhill Resources LLC, Buffington Partners LLC, Bascobert (A) Holdings LLC, Larkwood Energy LLC, Cottbus Associates LLC, George Neal South Refined Coal, LLC, George Neal North Refined Coal, LLC, Superior Fuels Company 1, LLC, Erie Fuels Company, LLC, Huron Fuels Company, LLC, Coronado Refined Coal, LLC, Chouteau Fuels Company, LLC, Jasper Fuels Company, LLC, Newton RC, LLC,

Canadys Refined Coal, LLC, Hastings Refined Coal LLC, Jefferies Refined Coal, LLC, and Williams Refined Coal, LLC, and Marquis Industrial Company, LLC each directly operated and operate an Accused RC Facility that provides bromine-containing refined coal to a coal plant that directly infringes by combining the refined coal provided by those companies with use of activated carbon sorbents downstream of the combustion chamber.

211. Chem-Mod provides chemicals and/or refined coal to at least some of the Accused Coal Plants and Accused RC Facilities.

212. Chem-Mod also assists in operating the Accused Coal Plants and Accused RC Facilities in connection with administering the chemicals supplied by Chem-Mod.

213. Given the location and operation of the Accused RC Facilities and the contractual relationships between Accused RC Facilities and associated coal-fired power plants, the refined coal provided by each Accused RC Facility has no substantial non-infringing use.

214. In addition, AJG, DTE, CERT, Chem-Mod, and the RC Defendants provide financial incentives to operators of coal-fired power plants to participate in a Section 45 Tax Credit scheme.

215. AJG, DTE, CERT, Chem-Mod, and the RC Defendants condition participation in an activity or receipt of a benefit, i.e., the financial benefits of participating in the Section 45 Tax Credit scheme and the technical and environmental benefits of using refined coal, upon performance of a step or steps of a patented method, i.e., the combusting of coal with added bromine and/or bromide, and they establish the manner or timing of that performance by requiring the power plant to use the refined coal and by providing the refined coal directly onto conveyances leading to the combustor.

216. AJG, DTE, and CERT, directly and in concert with their subsidiaries including Chem-Mod and the RC Defendants, have engaged in a pattern of conduct intended to induce and/or contribute to the infringement of others, including the power plants connected to an Accused RC Facility and the operators of coal-fired power plants connected to an Accused RC Facility. These actions have included:

- a. forming several of the RC Defendants specifically for the purpose of using Chem-Mod products in the manner described below as infringing;
- b. providing several of the RC Defendants and operators of coal-fired power plants with chemicals used to directly infringe the patents-in-suit;
- c. Building the core components of the RC facilities to use Chem-Mod chemicals;
- d. Connecting the RC facilities to coal-fired power plants;
- e. Placing the RC Facilities into service;
- f. Providing the RC Defendants with operational support, regulatory, and technical support necessary to use Chem-Mod chemicals at the Accused RC Facilities and Accused Coal Plants;
- g. Testing the performance of the RC Facilities for regulatory reasons and to obtain Section 45 Tax Credits;
- h. Conditioning participation in the Section 45 Tax Credits program on use of Chem-Mod chemicals at the Accused RC Facilities;
- i. Limiting the amount of capital and/or supplies of the RC Defendants;
- j. Using the RC Defendants to claim Section 45 Tax Credits;
- k. Tailoring the treatments applied to coal for each individual power plant; and
- l. Modifying the amount of bromine and/or bromide added to coal sold to operators of coal-fired power plants connected to an RC Facility in connection with plants' MATS obligations.

217. Thus, AJG, DTE, CERT, Chem-Mod, and the RC Defendants induce and/or contribute to direct infringement of the patents-in-suit by coal-fired power plant operators, and thus indirectly infringe the patents-in-suit.

218. Defendants' infringement of the Patents-in-Suit is willful. Defendants continue to commit acts of infringement despite a high likelihood that its actions constitute infringement, and

Defendants knew or should have known that their actions constituted an unjustifiably high risk of infringement.

219. In addition to the allegations provided above, Defendants have had notice of the '114 and '147 patents and ME2C's allegations of infringement at least as of the filing of the original complaint in this case on July 17, 2019, and Defendants have had notice of the '225, '517, and '430 patents and ME2C's allegations of infringement at least as of June 29, 2020, when ME2C provided Defendants with a draft amended complaint.

220. In accordance with 35 U.S.C. § 287, Defendants have actual notice and knowledge of all of the Patents-in-Suit as described above and no later than the filing of this Complaint and/or the date this Complaint was served upon each Defendant. In any event, Defendants may not avail themselves of 35 U.S.C. § 287 as a defense because ME2C is under no obligation to mark performance of the patented methods.

221. Defendants acts of infringement have been willful as of the date they became aware of the patented technology and the patents-in-suit, and in any event no later than the filing of this Complaint and/or the date this Complaint was served upon each Defendant.

Defendants' Interactions With Each Other Related to Infringement

222. Each Coal Plant Defendant consists of a parent company and various subsidiaries. These various entities work together to procure materials and manage Accused Power Plants.

223. Each of AJG, DTE, and CERT own and operate Refined Coal LLCs (including the other named RC Defendants) that use Chem-Mod materials at the Accused Coal Plants and coal plants with associated Accused RC Facilities.

224. Vistra's Joppa Coal plant, and Talen's Brandon Shores, Herbert Wagner, and Montour coal plants obtain refined coal from AJG, Chem-Mod, and their associated Refined Coal LLCs.

225. Vistra's Duck Creek and Newton coal plants obtain refined coal from DTE, Chem-Mod, and their associated Refined Coal LLCs.

226. The Conesville power plant in Ohio has been/is owned and/or operated by Vistra and AEP.

227. At least Defendants NRG and Talen have owned and/or operated Accused Coal Plants using Chem-Mod products to directly infringe the patents-in-suit and thus NRG is jointly and severally liable with Chem-Mod, and Talen is jointly and severally liable with Chem-Mod with respect to those plants.

228. At least Defendants AJG, DTE, Chem-Mod and their associated Refined Coal LLCs have induced and/or contributed to infringement at Talen Accused Coal Plants and coal plants associated with Accused RC Facilities, and thus those parties are jointly, severally, and/or in the alternative liable with respect to those plants.

229. Each of the RC Defendants is owned and/or operated by AJG, DTE, and/or CERT, and each uses Chem-Mod to induce and/or contribute to infringement. Thus, each RC Defendant is jointly, severally, and/or in the alternative liable with respect to Chem-Mod and the Defendant that is its associated owner/operator.

Control by DTE

230. Arbor Fuels Company, LLC, Belle River Fuels Company, LLC, Portage Fuels Company, LLC, Superior Fuels Company 1, LLC, Erie Fuels Company, LLC, Huron Fuels Company, LLC Chouteau Fuels, LLC, Jasper Fuels Company, LLC, and Newton RC, LLC (collectively and individually, the “DTE-affiliated RC Defendants”), act as the agents of DTE Energy Resources, LLC, with respect to the conduct accused of infringement in this case. Moreover, each of the DTE-affiliated RC Defendants have acted as the alter ego and a sham entity on behalf of DTE Energy Resources, LLC, which justifies piercing the corporate veil.

231. Each of the DTE-affiliated RC Defendants, purchases coal from a coal-fired power plant and chemical additives from Chem-Mod. Each further pays a license fee for the use of Chem-Mod intellectual property. These costs are paid by each owner of the DTE-affiliated RC Defendants, including DTE Energy Resources, LLC.

232. Each of the DTE-affiliated RC Defendants, sells refined coal to a power plant at a price below what it paid for the un-refined coal. In short, each of the DTE-affiliated RC Defendants was designed to operate at a loss, with no intention of ever turning a profit. The sole benefit from this business model is that the sale of refined coal qualifies for federal tax credits. However, none of the DTE-affiliated RC Defendants claimed those tax credits. Instead, those credits are passed along to DTE Energy Resources, LLC. Cash from DTE is then used to fund the DTE-affiliated RC Defendants.

233. Indeed, the DTE-affiliated RC Defendants do not have accountants or a tax department. Instead, AJG controls the necessary filings for tax credits through DTE employees.

234. None of the DTE-affiliated RC Defendants are able to engage in contracting for and providing refined coal—i.e., the conduct accused of infringement—on their own. Rather, they may only do so as directed by DTE Energy Resources.

235. As of December 31, 2021—the date that refined coal tax credits expire—the DTE-affiliated RC Defendants have ceased their refined coal operations and have attempted to dispose of remaining assets.

236. Accordingly, none of the DTE-affiliated RC Defendants have independent business interests that they pursue. Rather these entities exist only to further the interests of, and act under the control of, their principal DTE Energy Resources.

237. Moreover, AJG has used Chem-Mod LLC to further support the conduct accused of infringement in this case.

238. Chem-Mod LLC has no employees. Chem-Mod LLC has been controlled by AJG employees, such as Murray Abbot and Sally Batanian who have at times both acted as president of Chem-Mod LLC while concurrently working for AJG.

239. Chem-Mod LLC signed license and supply agreements with the AJG-affiliated RC Defendants and DTE-affiliated RC Defendants for providing the bromine compounds used to infringe the patents-in-suit. These agreements were controlled by AJG employees, including at least Sally Batanian, who provided indemnification to the AJG-affiliated RC Defendants and DTE-

affiliated RC Defendants for third party patent infringement claims. Moreover, when the DTE-affiliated RC Defendants and associated coal-fired power plants have been accused of patent infringement, AJG and Chem-Mod LLC secured patent licenses and paid the license fee on behalf of the DTE-affiliated RC Defendants, AJG-affiliated RC Defendants, and the associated coal-fired power plants. This indemnification scheme further encourages coal-fired power plants to engage in infringing conduct.

240. Chem-Mod LLC has also provided technical know-how to the other Defendants in this case for use in encouraging power plants to enter into the refined coal process accused of infringement in this case.

COUNT ONE: INFRINGEMENT OF THE '114 PATENT

241. ME2C incorporates by reference the preceding paragraphs as if fully set forth herein.

242. U.S. Patent No. 10,343,114 (the "'114 patent"), entitled "Sorbents for the Oxidation and Removal of Mercury", was issued on July 9, 2019, naming Edwin S. Olson, Michael J. Holmes and John H. Pavlish as the inventors. Exhibit A ('114 Patent).

243. ME2C owns all rights, title, and interest in the '114 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

244. The '114 Patent is valid and enforceable and directed to patentable subject matter.

245. Defendants infringe at least one of claims 1-30 of the '114 patent.

246. ME2C provides the following explanation of infringement with regard to an exemplary claim.

247. Claim 25 of the '114 patent recites: A method of separating mercury from a mercury-containing gas.

248. The power plants connected to an Accused RC Facility perform this method in order to comply with federal and/or state mercury regulations.

249. Claim 25 of the '114 patent recites: combusting coal in a combustion chamber to provide the mercury-containing gas, wherein the coal comprises added Br₂, HBr, a bromide compound, or a combination thereof, added to the coal upstream of the combustion chamber, or the combustion chamber comprises added Br₂, HBr, a bromide compound, or a combination thereof, or a combination thereof.

250. The power plants connected to an Accused RC Facility perform this step by burning coal with an added Br₂, HBr, a bromide compound, or a combination thereof and/or by adding Br₂, HBr, a bromide compound, or a combination thereof to the combustion chamber.

251. Claim 25 of the '114 patent recites: injecting a sorbent material comprising activated carbon into the mercury containing gas downstream of the combustion chamber.

252. The power plants connected to an Accused RC Facility perform this step by injecting activated carbon sorbent downstream of the combustion chamber.

253. Claim 25 of the '114 patent recites: contacting mercury in the mercury-containing gas with the sorbent, to form a mercury/sorbent composition.

254. The power plants connected to an Accused RC Facility perform this step because mercury contained in the gas exiting the combustion chamber contacts the sorbent as all of this material is contained in the same gas.

255. Claim 25 of the '114 patent recites: separating the mercury/sorbent composition from the mercury-containing gas, to form a cleaned gas.

256. The power plants connected to an Accused RC Facility perform this step using equipment to collect the mercury captured by the sorbent in order to comply with mercury regulations.

257. AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to coal-fired power plants connected to an Accused RC Facility.

258. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with

an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

259. Alternatively, when AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants are willfully blind to the fact that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

260. The coal with added Br₂, HBr, a bromide compound, or a combination thereof provided by AJG, DTE, CERT, Chem-Mod and the RC Defendants is not a staple article or commodity of commerce suitable for substantial non-infringing use. This coal is supplied to a conveyance that moves the coal toward the combustion chamber of a power plant that directly infringes the '114 patent. In addition, AJG, DTE, CERT, Chem-Mod and the RC Defendants tailor the amount of Br₂, HBr, a bromide compound, or a combination thereof added to the coal for the specific needs of the power plant.

261. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the provided coal has no substantial use other than to be combusted at the plant that will perform the step of injecting sorbent comprising activated carbon.

262. AJG, DTE, CERT, Chem-Mod and the RC Defendants took the above-described actions intending to cause infringing acts by others.

263. AJG, DTE, CERT, Chem-Mod and the RC Defendants have actual knowledge of the '114 patent and know that actions described above, if taken, would constitute infringement of that patent. Alternatively, AJG, DTE, CERT, Chem-Mod and the RC Defendants believe there is a high probability that others would infringe the '114 patent but have remained willfully blind to the infringing nature of those actions. AJG, DTE, CERT, Chem-Mod and the RC Defendants

therefore infringe the '114 patent under 35 U.S.C. § 271(b) with respect to each coal-fired power plant connected to an Accused RC Facility.

264. AJG, DTE, CERT, Chem-Mod and the RC Defendants indirectly infringe the '114 patent by contributing to infringement by others, such as its customers and end-users by offering to sell and/or selling within the United States coal with added Br₂, HBr, a bromide compound, or a combination thereof used to practice one or more processes/methods covered by the claims of the '114 patent and that constitute a material part of the inventions claimed in the '114 patent. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '114 patent under 35 U.S.C. § 271(c) with respect to each coal-fired power plant connected to an Accused RC Facility.

265. Defendants' acts of infringement have caused damage to ME2C. ME2C is entitled to recover from Defendants the damages sustained by ME2C as a result of Defendants' wrongful acts in an amount subject to proof at trial. In addition, the infringing acts and practices of Defendants have caused, are causing, and, unless such acts and practices are enjoined by the Court, will continue to cause immediate and irreparable harm to ME2C for which there is no adequate remedy at law, and for which ME2C is entitled to injunctive relief under 35 U.S.C. § 283.

COUNT TWO: INFRINGEMENT OF THE '147 PATENT

266. ME2C incorporates by reference the preceding paragraphs as if fully set forth herein.

267. U.S. Patent No. 8,168,147 (the "'147 patent"), entitled "Sorbents for the Oxidation and Removal of Mercury", was issued on May 1, 2012, naming Edwin S. Olson, Michael J. Holmes and John H. Pavlish as the inventors. Exhibit B ('147 Patent).

268. ME2C owns by assignment all rights, title, and interest in the '147 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

269. The '147 Patent is valid and enforceable and directed to patentable subject matter.

270. Defendants infringe at least one of claims 17-20 of the '147 patent.

271. ME2C provides the following explanation of infringement with regard to an exemplary claim.

272. Claim 17 of the '147 patent recites: "A method for separating mercury from a mercury containing gas."

273. The power plants connected to an Accused RC Facility perform this method in order to comply with federal and/or state mercury regulations.

274. Claim 17 of the '147 patent recites: "promoting at least a portion of a particulate sorbent material comprising activated carbon by chemically reacting the sorbent material with a bromine containing promoter to form a promoted brominated sorbent, wherein the bromine containing promoter is in gaseous form, vapor form, or non-aqueous liquid form, and wherein the activated carbon contains graphene sheets having carbene species edge sites which react with the bromine containing promoter to form a carbocation paired with a bromide anion in the promoted brominated sorbent for oxidation of the mercury."

275. The power plants connected to an Accused RC Facility perform this step because they burn coal with added Br_2 , HBr , a bromide compound, or a combination thereof and/or they provide Br_2 , HBr , a bromide compound, or a combination thereof into the combustion zone with the coal. The bromine containing promoter is in gaseous form when it comes into contact with activated carbon added by the power plants connected to an Accused RC Facility. This contact causes the recited chemical reaction to occur.

276. Claim 17 of the '147 patent recites: "chemically reacting elemental mercury in the mercury containing gas with the promoted brominated sorbent to form a mercury/sorbent chemical composition."

277. As noted above, power plants connected to an Accused RC Facility perform this step such that the recited chemical reaction occurs.

278. Claim 17 of the '147 patent recites: "separating particulates from the mercury containing gas, the particulates including ash and the mercury/sorbent chemical composition."

279. The power plants connected to an Accused RC Facility perform this method in order to comply with federal and/or state mercury regulations.

280. Claim 17 of the '147 patent recites: "A method according to claim 1, further comprising injecting the particulate sorbent material at a sorbent material injection rate and injecting separately the bromine containing promoter into a gas stream whereby in-flight reaction produces the promoted brominated sorbent, wherein the promoter is reacted in the gas phase or as a vapor, wherein the promoter is added at from about 1 to about 30 grams per 100 grams of the sorbent material."

281. The power plants connected to an Accused RC Facility perform this step because they burn coal with added Br₂, HBr, a bromide compound, or a combination thereof and/or they provide BR₂, HBr, a bromide compound, or a combination thereof into the combustion zone with the coal. In either case, the bromine containing promoter is injected into a gas stream, and it later comes into contact with activated carbon sorbent added by the power plants connected to an Accused RC Facility. This contact causes in-flight promotion of the sorbent.

282. The bromine containing promoter is added at from about 1 to 30 grams per 100 grams of the sorbent material.

283. AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to coal-fired power plants connected to an Accused RC Facility.

284. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

285. Alternatively, when AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC

Defendants are willfully blind to the fact that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

286. The coal with added Br₂, HBr, a bromide compound, or a combination thereof provided by AJG, DTE, CERT, Chem-Mod and the RC Defendants is not a staple article or commodity of commerce suitable for substantial non-infringing use. This coal is supplied to a conveyance that moves the coal toward the combustion chamber of a power plant that directly infringes the '147 patent. In addition, AJG, DTE, CERT, Chem-Mod and the RC Defendants tailor the amount of Br₂, HBr, a bromide compound, or a combination thereof added to the coal for the specific needs of the power plant.

287. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the provided coal has no substantial use other than to be combusted at the plant that will perform the step of injecting sorbent comprising activated carbon.

288. AJG, DTE, CERT, Chem-Mod and the RC Defendants took the above-described actions intending to cause infringing acts by others.

289. AJG, DTE, CERT, Chem-Mod and the RC Defendants have actual knowledge of the '147 patent and know that actions described above, if taken, would constitute infringement of that patent. Alternatively, AJG, DTE, CERT, Chem-Mod and the RC Defendants believe there is a high probability that others would infringe the '147 patent but have remained willfully blind to the infringing nature of those actions. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '147 patent under 35 U.S.C. § 271(b) with respect to each coal-fired power plant connected to an Accused RC Facility.

290. AJG, DTE, CERT, Chem-Mod and the RC Defendants indirectly infringes the '147 patent by contributing to infringement by others, such as its customers and end-users by offering to sell and/or selling within the United coal with added BR₂, HBR, a bromide compound, or a combination thereof used to practice one or more processes/methods covered by the claims of the

'147 patent and that constitute a material part of the inventions claimed in the '147 patent. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '147 patent under 35 U.S.C. § 271(c) with respect to each coal-fired power plant connected to an Accused RC Facility.

291. Defendants' acts of infringement have caused damage to ME2C. ME2C is entitled to recover from Defendants the damages sustained by ME2C as a result of Defendants' wrongful acts in an amount subject to proof at trial. In addition, the infringing acts and practices of Defendants have caused, are causing, and, unless such acts and practices are enjoined by the Court, will continue to cause immediate and irreparable harm to ME2C for which there is no adequate remedy at law, and for which ME2C is entitled to injunctive relief under 35 U.S.C. § 283.

COUNT THREE: INFRINGEMENT OF THE '225 PATENT

292. ME2C incorporates by reference the preceding paragraphs as if fully set forth herein.

293. U.S. Patent No. 10,589,225 (the "'225 patent"), entitled "Sorbents for the Oxidation and Removal of Mercury", was issued on March 17, 2020, naming Edwin S. Olson, Michael J. Holmes and John H. Pavlish as the inventors. Exhibit C ('225 Patent).

294. ME2C owns by assignment all rights, title, and interest in the '225 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

295. The '225 Patent is valid and enforceable and directed to patentable subject matter.

296. Defendants infringe at least one of claims 1-29 of the '225 patent.

297. ME2C provides the following explanation of infringement with regard to an exemplary claim.

298. Claim 1 of the '225 patent recites: "A method for treating a mercury-containing gas."

299. The power plants connected to an Accused RC Facility perform this method in order to comply with federal and/or state mercury regulations.

300. Claim 1 of the '225 patent recites: “combusting a mixture comprising coal, pyrolysis char, and an additive comprising HBr, a bromide compound, or a combination thereof, to form the mercury-containing, gas.”

301. The power plants connected to an Accused RC Facility perform this step because they combust coal, pyrolysis char, and an additive comprising HBr, a bromide compound, or a combination thereof.

302. Claim 1 of the '225 patent recites: “adding a particulate sorbent material comprising activated carbon into the mercury-containing gas.”

303. The power plants connected to an Accused RC Facility perform this step by adding sorbent containing activated carbon to the gas that exits the combustion chamber.

304. AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to coal-fired power plants connected to an Accused RC Facility.

305. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

306. Alternatively, when AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants are willfully blind to the fact that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

307. The coal with added Br₂, HBr, a bromide compound, or a combination thereof provided by AJG, DTE, CERT, Chem-Mod and the RC Defendants is not a staple article or commodity of commerce suitable for substantial non-infringing use. This coal is supplied to a conveyance that moves the coal toward the combustion chamber of a power plant that directly

infringes the '225 patent. In addition, AJG, DTE, CERT, Chem-Mod and the RC Defendants tailor the amount of Br₂, HBr, a bromide compound, or a combination thereof added to the coal for the specific needs of the power plant.

308. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the provided coal has no substantial use other than to be combusted at the plant that will perform the step of injecting sorbent comprising activated carbon.

309. AJG, DTE, CERT, Chem-Mod and the RC Defendants took the above-described actions intending to cause infringing acts by others.

310. AJG, DTE, CERT, Chem-Mod and the RC Defendants have actual knowledge of the '225 patent and know that actions described above, if taken, would constitute infringement of that patent. Alternatively, AJG, DTE, CERT, Chem-Mod and the RC Defendants believe there is a high probability that others would infringe the '225 patent but have remained willfully blind to the infringing nature of those actions. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '225 patent under 35 U.S.C. § 271(b) with respect to each coal-fired power plant connected to an Accused RC Facility.

311. AJG, DTE, CERT, Chem-Mod and the RC Defendants indirectly infringes the '225 patent by contributing to infringement by others, such as its customers and end-users by offering to sell and/or selling within the United coal with added BR₂, HBR, a bromide compound, or a combination thereof used to practice one or more processes/methods covered by the claims of the '225 patent and that constitute a material part of the inventions claimed in the '225 patent. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '225 patent under 35 U.S.C. § 271(c) with respect to each coal-fired power plant connected to an Accused RC Facility.

312. Defendants' acts of infringement have caused damage to ME2C. ME2C is entitled to recover from Defendants the damages sustained by ME2C as a result of Defendants' wrongful acts in an amount subject to proof at trial. In addition, the infringing acts and practices of

Defendants have caused, are causing, and, unless such acts and practices are enjoined by the Court, will continue to cause immediate and irreparable harm to ME2C for which there is no adequate remedy at law, and for which ME2C is entitled to injunctive relief under 35 U.S.C. § 283.

COUNT FOUR: INFRINGEMENT OF THE '517 PATENT

313. ME2C incorporates by reference the preceding paragraphs as if fully set forth herein.

314. U.S. Patent No. 10,596,517(the "'517 patent"), entitled "Sorbents for the Oxidation and Removal of Mercury", was issued on March 24, 2020, naming Edwin S. Olson, Michael J. Holmes and John H. Pavlish as the inventors. Exhibit D ('517 Patent).

315. ME2C owns by assignment all rights, title, and interest in the '517 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

316. The '517 Patent is valid and enforceable and directed to patentable subject matter.

317. Defendants infringe at least one of claims 1-30 of the '517 patent.

318. ME2C provides the following explanation of infringement with regard to an exemplary claim.

319. Claim 1 of the '517 patent recites: "A method for reducing mercury in a mercury-containing gas."

320. The power plants connected to an Accused RC Facility perform this method in order to comply with federal and/or state mercury regulations.

321. Claim 1 of the '517 patent recites: "combusting coal in a combustion chamber, the coal comprising an additive comprising Br₂, HBr, a bromide compound, or a combination thereof, to form the mercury-containing gas."

322. The power plants connected to an Accused RC Facility perform this step because they combust coal with an additive comprising Br₂, HBr, a bromide compound, or a combination thereof to form mercury-containing gas.

323. Claim 1 of the '517 patent recites: "collecting mercury in the mercury-containing gas with a sorbent added to the mercury-containing gas, the sorbent comprising activated carbon."

324. The power plants connected to an Accused RC Facility perform this step by adding sorbent containing activated carbon to the gas that exits the combustion chamber. The mercury in the gas is then collected with the sorbent.

325. AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to coal-fired power plants connected to an Accused RC Facility.

326. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

327. Alternatively, when AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants are willfully blind to the fact that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

328. The coal with added Br₂, HBr, a bromide compound, or a combination thereof provided by AJG, DTE, CERT, Chem-Mod and the RC Defendants is not a staple article or commodity of commerce suitable for substantial non-infringing use. This coal is supplied to a conveyance that moves the coal toward the combustion chamber of a power plant that directly infringes the '517 patent. In addition, AJG, DTE, CERT, Chem-Mod and the RC Defendants tailor the amount of Br₂, HBr, a bromide compound, or a combination thereof added to the coal for the specific needs of the power plant.

329. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with

an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the provided coal has no substantial use other than to be combusted at the plant that will perform the step of injecting sorbent comprising activated carbon.

330. AJG, DTE, CERT, Chem-Mod and the RC Defendants took the above-described actions intending to cause infringing acts by others.

331. AJG, DTE, CERT, Chem-Mod and the RC Defendants have actual knowledge of the '517 patent and know that actions described above, if taken, would constitute infringement of that patent. Alternatively, AJG, DTE, CERT, Chem-Mod and the RC Defendants believe there is a high probability that others would infringe the '517 patent but have remained willfully blind to the infringing nature of those actions. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '517 patent under 35 U.S.C. § 271(b) with respect to each coal-fired power plant connected to an Accused RC Facility.

332. AJG, DTE, CERT, Chem-Mod and the RC Defendants indirectly infringes the '517 patent by contributing to infringement by others, such as its customers and end-users by offering to sell and/or selling within the United coal with added BR₂, HBR, a bromide compound, or a combination thereof used to practice one or more processes/methods covered by the claims of the '517 patent and that constitute a material part of the inventions claimed in the '517 patent. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '517 patent under 35 U.S.C. § 271(c) with respect to each coal-fired power plant connected to an Accused RC Facility.

333. Defendants' acts of infringement have caused damage to ME2C. ME2C is entitled to recover from Defendants the damages sustained by ME2C as a result of Defendants' wrongful acts in an amount subject to proof at trial. In addition, the infringing acts and practices of Defendants have caused, are causing, and, unless such acts and practices are enjoined by the Court, will continue to cause immediate and irreparable harm to ME2C for which there is no adequate remedy at law, and for which ME2C is entitled to injunctive relief under 35 U.S.C. § 283.

COUNT FIVE: INFRINGEMENT OF THE '430 PATENT

334. ME2C incorporates by reference the preceding paragraphs as if fully set forth herein.

335. U.S. Patent No. 10,668,430 (the "'430 patent"), entitled "Sorbents for the Oxidation and Removal of Mercury", was issued on March 24, 2020, naming Edwin S. Olson, Michael J. Holmes and John H. Pavlish as the inventors. Exhibit E ('430 Patent).

336. ME2C owns by assignment all rights, title, and interest in the '430 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

337. The '430 Patent is valid and enforceable and directed to patentable subject matter.

338. Defendants infringe at least one of claims 1-29 of the '430 patent.

339. ME2C provides the following explanation of infringement with regard to an exemplary claim.

340. Claim 1 of the '430 patent recites: "A method of separating mercury from a mercury-containing gas."

341. The power plants connected to an Accused RC Facility perform this method in order to comply with federal and/or state mercury regulations.

342. Claim 1 of the '430 patent recites: "combusting coal in a combustion chamber, to provide the mercury-containing gas, wherein the coal comprises an additive comprising Br₂, HBr, a bromide compound, or a combination thereof, wherein the additive is added to the coal before the coal enters the combustion chamber, or the combustion chamber comprises an additive comprising Br₂, HBr, a bromide compound, or a combination thereof or a combination thereof."

343. The power plants connected to an Accused RC Facility perform this step because they combust coal with an additive comprising Br₂, HBr, a bromide compound, or a combination thereof to form mercury-containing gas.

344. Claim 1 of the '430 patent recites: "injecting a sorbent comprising activated carbon into the mercury-containing gas downstream of the combustion chamber."

345. The power plants connected to an Accused RC Facility perform this step by injecting sorbent containing activated carbon downstream of the combustion chamber.

346. Claim 1 of the '430 patent recites: "contacting mercury in the mercury-containing gas with the sorbent."

347. The power plants connected to an Accused RC Facility perform this step because mercury contained in the gas exiting the combustion chamber contacts the sorbent as all of this material is contained in the same gas.

348. Claim 1 of the '430 patent recites: "separating the sorbent contacted with the mercury from the mercury-containing gas."

349. The power plants connected to an Accused RC Facility perform this step using equipment to collect the mercury captured by the sorbent in order to comply with mercury regulations.

350. AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to coal-fired power plants connected to an Accused RC Facility.

351. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

352. Alternatively, when AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants are willfully blind to the fact that the coal-fired power plant will perform the step of injecting sorbent comprising activated carbon.

353. The coal with added Br₂, HBr, a bromide compound, or a combination thereof provided by AJG, DTE, CERT, Chem-Mod and the RC Defendants is not a staple article or

commodity of commerce suitable for substantial non-infringing use. This coal is supplied to a conveyance that moves the coal toward the combustion chamber of a power plant that directly infringes the '430 patent. In addition, AJG, DTE, CERT, Chem-Mod and the RC Defendants tailor the amount of Br₂, HBr, a bromide compound, or a combination thereof added to the coal for the specific needs of the power plant.

354. When AJG, DTE, CERT, Chem-Mod and the RC Defendants provide coal with added Br₂, HBr, a bromide compound, or a combination thereof to a coal-fired power plant with an activated carbon injection system, AJG, DTE, CERT, Chem-Mod and the RC Defendants know that the provided coal has no substantial use other than to be combusted at the plant that will perform the step of injecting sorbent comprising activated carbon.

355. AJG, DTE, CERT, Chem-Mod and the RC Defendants took the above-described actions intending to cause infringing acts by others.

356. AJG, DTE, CERT, Chem-Mod and the RC Defendants have actual knowledge of the '430 patent and know that actions described above, if taken, would constitute infringement of that patent. Alternatively, AJG, DTE, CERT, Chem-Mod and the RC Defendants believe there is a high probability that others would infringe the '430 patent but have remained willfully blind to the infringing nature of those actions. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '430 patent under 35 U.S.C. § 271(b) with respect to each coal-fired power plant connected to an Accused RC Facility.

357. AJG, DTE, CERT, Chem-Mod and the RC Defendants indirectly infringes the '430 patent by contributing to infringement by others, such as its customers and end-users by offering to sell and/or selling within the United coal with added BR₂, HBR, a bromide compound, or a combination thereof used to practice one or more processes/methods covered by the claims of the '430 patent and that constitute a material part of the inventions claimed in the '430 patent. AJG, DTE, CERT, Chem-Mod and the RC Defendants therefore infringe the '430 patent under 35 U.S.C. § 271(c) with respect to each coal-fired power plant connected to an Accused RC Facility.

358. Defendants' acts of infringement have caused damage to ME2C. ME2C is entitled to recover from Defendants the damages sustained by ME2C as a result of Defendants' wrongful acts in an amount subject to proof at trial. In addition, the infringing acts and practices of Defendants have caused, are causing, and, unless such acts and practices are enjoined by the Court, will continue to cause immediate and irreparable harm to ME2C for which there is no adequate remedy at law, and for which ME2C is entitled to injunctive relief under 35 U.S.C. § 283.

JURY DEMAND

Plaintiff hereby demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE Plaintiff Midwest Energy Emissions Corp. asks this Court for an order granting the following relief:

- a. A judgment in favor of Plaintiff that Defendants have infringed, either literally and/or under the doctrine of equivalents, the '114, '147, '225, '517, and '430 patents;
- b. A judgment and order finding that Defendants' infringement has been willful as of June 29, 2020;
- c. A permanent injunction prohibiting Defendants from further acts of infringement;
- d. A judgment and order requiring Defendants to pay Plaintiff its damages, costs, expenses, and any enhanced damages to which Plaintiff is entitled for Defendants' infringement;
- e. A judgment and order requiring Defendants to provide an accounting and to pay supplemental damages to Plaintiff, including without limitation, pre-judgment and post-judgment interest;
- f. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding Plaintiff its reasonable attorneys' fees against Defendants; and
- g. Any and all other relief as the Court may deem appropriate and just under the circumstances.

Dated: May 3, 2022

Respectfully submitted,

/s/ James M. Lennon

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