



**I. PRELIMINARY STATEMENT**

5. This Consent Agreement and Final Order is entered into under Sections 113(a)(3)(A) and 113(d) of the CAA, 42 U.S.C. §§ 7413(a)(3)(A) and 7413(d), and the Consolidated Rules of Practice, 40 C.F.R. Part 22.

6. EPA and the U.S. Department of Justice jointly determined that this matter is appropriate for administrative penalty assessment. 42 U.S.C. § 7413(d)(1); 40 C.F.R. § 19.4.

7. The Regional Judicial Officer is authorized to ratify this CAFO, which memorializes a settlement between Complainant and Respondent. 40 C.F.R. §§ 22.4(b) and 22.18(b).

8. The issuance of this CAFO simultaneously initiates and concludes an administrative proceeding for the assessment of monetary penalties, pursuant to Section 113(d) of the CAA, 42 U.S.C. § 7413(d). As discussed below, the CAFO resolves the following violations of Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), that Complainant alleges occurred in connection with Respondent's storage and handling of sulfuric acid at its cotton textile bleaching facility in Colrain, Massachusetts:

- a. Failure to identify hazards which may result from accidental releases using appropriate hazard assessment techniques;
- b. Failure to design and maintain a safe facility, taking such steps as are necessary to prevent such releases; and
- c. Failure to minimize the consequences of a release should one occur.

**II. STATUTORY AND REGULATORY AUTHORITY**

9. Pursuant to Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling, or storing substances listed

pursuant to Section 112(r)(3) of the CAA, 42 U.S.C. § 7412(r)(3), or any other extremely hazardous substance, have a general duty, in the same manner and to the same extent as 29 U.S.C. § 654, to (a) identify hazards which may result from accidental releases of such substances using appropriate hazard assessment techniques; (b) design and maintain a safe facility taking such steps as are necessary to prevent releases; and (c) minimize the consequences of accidental releases which do occur. This section of the CAA is referred to as the “General Duty Clause” or “GDC.”

10. The term “extremely hazardous substances” under the GDC includes any chemical, alone or in combination, which may, as a result of short-term exposures associated with releases to the air, cause death, injury, or property damage due to the chemicals’ toxicity, reactivity, flammability, or corrosivity.<sup>1</sup> Pursuant to Section 112(r)(1) of the CAA, the term includes, but is not limited to, substances listed under Section 112(r)(3) of the CAA, 42 U.S.C. § 7412(r)(3) and in 40 C.F.R. § 68.130. In addition, the release of any substance that causes death or serious injury because of its acute toxic effect or as a result of an explosion or fire or that causes substantial property damage by blast, fire, corrosion or other reaction would create a presumption that such substance is extremely hazardous.<sup>2</sup> Under Section 112(r)(3) of the CAA, the term “extremely hazardous substances” also includes, without limitation and in addition to the substances listed in 40 C.F.R. § 68.130, those substances listed in 40 C.F.R. Part 355, Appendices A and B, published under Section 302 of the Emergency Planning and Community Right-to-Know Act (“EPCRA”), 42 U.S.C. § 11002.

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<sup>1</sup> Senate Committee on Environment and Public Works, Clean Air Act Amendments of 1989, Sen. Report No. 228, 101<sup>st</sup> Congress, 1<sup>st</sup> Session 211 (1989).

<sup>2</sup> *Id.*

11. The term “accidental release” is defined by Section 112(r)(2)(A) of the CAA, 42 U.S.C. § 7412(r)(2)(A), as an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.

12. The term “stationary source” is defined by Section 112(r)(2)(C) of the CAA, 42 U.S.C. § 7412(r)(2)(C), in pertinent part, as any buildings, structures, equipment, installations, or substance-emitting stationary activities, located on one or more contiguous properties under the control of the same person, from which an accidental release may occur.

13. The General Duty Clause is a performance standard with requirements that often can be achieved in a variety of ways. EPA routinely consults chemical Safety Data Sheets (“SDSs”), codes, standards, and guidance issued by chemical manufacturers, trade associations, and fire prevention associations (collectively, “industry standards”) to understand the hazards posed by using various extremely hazardous substances. The industry standards also are evidence of the standard of care that industry itself has found to be appropriate for managing those hazards. These industry standards are consistently relied upon by industry safety and fire prevention experts and are sometimes incorporated into state building, fire, and mechanical codes.

14. Sections 113(a) and (d) of the CAA, 42 U.S.C. §§ 7413(a) and (d), as amended by EPA’s Civil Monetary Penalty Inflation Adjustment Rule, 40 C.F.R. Part 19, provide for the assessment of civil penalties for violations of Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r), in amounts of up to \$48,762 per day per violation for violations that occurred after November 2, 2015 and are assessed on or after December 23, 2020.

### **III. GENERAL ALLEGATIONS**

15. Respondent operates a cotton textile bleaching facility located at 247 Main Road in Colrain, Massachusetts (the “Facility”).

16. The Facility abuts the North River and is located immediately across the street from several residential homes. A conveyance, known as the tailrace brook (“Tailrace”), flows through the Facility and discharges to the North River.

17. Respondent is a corporation organized under the laws of the State of North Carolina with its principal office located at 1100 Hawthorne Lane, Charlotte, North Carolina 28205.

18. Respondent is a “person” within the meaning of Section 302(e) of the CAA, 42 U.S.C. § 7602(e), against whom an administrative penalty order may be issued under Section 113(a)(3) of the CAA, 42 U.S.C. § 7413(a)(3).

19. The Facility is a building or structure from which an accidental release may occur and is therefore a “stationary source,” as defined at Section 112(r)(2)(C) of the CAA, 42 U.S.C. § 7412(r)(2)(C).

20. Respondent is the “operator” of the Facility, as that term is defined by Section 112(a)(9) of the CAA, 42 U.S.C. § 7412(a)(9).

21. From at least 2016 through September 1, 2019, the Facility had an average daily amount of at least 28,000 pounds of sulfuric acid on site. During that time, Respondent periodically received deliveries of approximately 45,000 pounds of sulfuric acid per delivery.

22. From September 1, 2019 through the present, the Facility typically had at least 13,000 pounds of sulfuric acid on site.

23. Sulfuric acid is an extremely hazardous substance subject to Section 112(r)(1) of the CAA, as well as EPCRA and Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) reporting requirements.

24. Sulfuric acid and other chemicals found at the Facility, such as sodium hydroxide, sodium bisulfite, and hydrogen peroxide, either alone or improperly co-located with at least one of the other chemicals listed in this paragraph, are chemicals that may, as a result of short-term exposures associated with releases to the air, cause death, injury, or property damage due to their toxicity, reactivity, flammability, volatility, or corrosivity. Accordingly, they are “extremely hazardous substances” subject to the General Duty Clause of the CAA.

25. At the time of the violations alleged herein, Respondent “stored,” “processed,” and “handled” sulfuric acid in its bleaching and wastewater treatment plant operations. Additionally, Respondent “stored,” “processed,” and “handled” sodium hydroxide, sodium bisulfite, and hydrogen peroxide, which, in combination with sulfuric acid or one another, are “extremely hazardous substances” pursuant to Section 112(r) of the CAA, in the Facility’s Bleachery and Screen Buildings.

26. As the operator of a stationary source that processes, handles or stores extremely hazardous substances, Respondent was, at all times relevant to the allegations herein, subject to the General Duty Clause found in Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

27. Sulfuric acid is highly reactive and capable of igniting combustible materials on contact. Sulfuric acid is explosive or incompatible with an enormous array of substances. It can undergo violent chemical change at elevated temperatures and pressure and may react violently with water. When heated, it emits highly toxic fumes. Thus, sulfuric acid should not be stored in contact with heat, water, and organic materials. Sulfuric acid is corrosive to all body tissues,

and inhalation of vapor may cause serious lung damage. Contact with eyes may result in total loss of vision, and skin contact may produce severe necrosis.

28. Due to the dangers associated with sulfuric acid, the chemical storage, sulfuric acid distribution, and model fire code industries have developed industry standards to control the risks associated with the use of sulfuric acid and other hazardous chemicals. The National Association of Corrosion Engineers (“NACE”) (recently merged with the Society for Protection Coatings to form the Association for Materials Protection and Performance) has issued (and updates) its *Standard Practice: Design, Fabrication, and Inspection of Storage Tank Systems for Concentrated Fresh and Process Sulfuric Acid and Oleum at Ambient Temperatures* (“SP0294”) and *Standard for Recommended Practice: Materials for the Handling and Storage of Commercial Concentrated (90 to 100%) Sulfuric Acid at Ambient Temperatures* (“RP0391”). NorFalco, LLC (“NorFalco”) issued its *Sulfuric Acid Handbook* as an information source for industrial consumers, handlers, transporters, and other users. In collaboration with the American Institute of Chemical Engineers (“AIChE”), the Center for Chemical Process Safety (“CCPS”) has issued (and updates) Guidelines for Safe Warehousing of Chemicals and Guidelines for Hazard Evaluation Procedures. The Steel Tank Institute (“STI”) has issued (and updates) its *Standard for the Inspection of Aboveground Storage Tanks* (“SP001”). Assmann Corporation of America has issued *Tank Installation & Use Guidelines for Bulk Storage Tanks*. The American Petroleum Institute has issued (and updates) its *Standard 653: Tank Inspection, Repair, Alteration, and Reconstruction* (“API 653”). The National Fire Protection Association (“NFPA”) has issued (and updates) *NFPA 1, Fire Code* (“NFPA 1”) and *NFPA 400, Hazardous Materials Code* (“NFPA 400”). The International Code Council has issued (and updates) the International Fire Code (“IFC”). These standards are consistently relied upon by industry

experts and are sometimes incorporated by reference into state building and mechanical codes, including Massachusetts' codes.<sup>3</sup>

29. On August 26, 2019, a Barnhardt employee observed a small leak of sulfuric acid from the Facility's 4,500-gallon aboveground sulfuric acid storage tank. The leak was observed again the next day. On August 29, 2019, the employee noticed that the small drip had progressed to a larger drip, and he placed a bucket under it. On August 30, 2019, the employee observed that the leak had filled the bottom of the bucket. Early on the morning of September 1, 2019, an employee discovered that the leak had gotten much worse and was now streaming horizontally out the side of the tank, far past the bucket, over the wall of the containment dike, and onto the ground.

30. Barnhardt estimates that failure of the sulfuric acid tank resulted in a release of at least 53 gallons of sulfuric acid out of the tank, at least 25 gallons of which entered the Tailrace Brook and ultimately discharged to the North River (the "Release").

31. On the afternoon of September 1, 2019, staff from the Massachusetts Department of Environmental Protection ("DEP") and the Massachusetts Division of Fisheries and Wildlife ("MDFW") observed dead and dying fish, frogs, and crayfish in the North River between the Facility and the confluence with the Deerfield River.

32. On October 8, 2019, EPA conducted an inspection of the Facility to determine its compliance with Section 112(r) of the CAA, 42 U.S.C. § 7412(r), and EPCRA ("Inspection").

33. Based on observations made by EPA inspectors during the Inspection and a review of documentation submitted by Respondent, EPA identified several potentially dangerous conditions relating to the sulfuric acid systems at the Facility.

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<sup>3</sup> For example, the Massachusetts Fire Code is based on the 2015 edition of NFPA 1. 527 CMR 1.4. Further, NFPA 1 incorporates NFPA 400 by reference in large part. *See* NFPA 1 § 60.5.1.



34. The potentially dangerous conditions identified by EPA are listed in the chart attached to and made a part of this CAFO as Appendix A. Appendix A also explains how each of the conditions could lead to a release or inhibit the Facility's ability to minimize the consequences of any release that might occur.

#### **IV. VIOLATIONS**

##### **COUNT I – FAILURE TO IDENTIFY HAZARDS**

35. The allegations in paragraphs 1 through 34 are hereby realleged and incorporated by reference herein.

36. Pursuant to the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1), owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty, in the same manner and to the same extent as 29 U.S.C. § 654, to identify hazards that may result from accidental releases of such substances, using appropriate hazard assessment techniques.

37. The recommended industry practice and standard of care for identifying, analyzing, and evaluating potential hazards associated with extremely hazardous substances is to determine: (a) the intrinsic hazards of the chemicals used in the processes; (b) the risks of accidental releases from the processes through possible release scenarios; and (c) the potential effect of these releases on the public and the environment, using appropriate hazard assessment techniques, as further explained in Appendix A. The document that contains this analysis is often referred to as a process hazard analysis or process hazard review (“Process Hazard Review”).

38. As set out in Condition 1 of Appendix A, Respondent has not conducted an adequate Process Hazard Review for its storage, handling, and use of sulfuric acid and other extremely hazardous substances at the Facility using appropriate hazard assessment techniques.

39. By failing to conduct an adequate Process Hazard Review, Respondent failed to identify hazards that may result from extremely hazardous substance releases by using appropriate hazard assessment techniques, in violation of the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

**COUNT 2 – FAILURE TO DESIGN AND MAINTAIN A SAFE FACILITY**

40. The allegations in paragraphs 1 through 39 are hereby realleged and incorporated by reference herein.

41. Pursuant to the General Duty Clause in Section 112(r)(1) of the CAA, owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty, to the same extent as 29 U.S.C. § 654, to design and maintain a safe facility taking such steps as are necessary to prevent releases.

42. The recommended standard of care for designing and maintaining a safe facility to prevent chemical releases is to, among other things, base design considerations upon applicable design codes, federal and state regulations, and recognized industry practices, to prevent releases or minimize their impacts, and to develop and implement standard operating procedures, preventative maintenance programs, personnel training programs, management of change practices, incident investigation procedures, and self-auditing procedures. STI, API, NACE, NFPA, tank manufacturers such as Assmann Corporation of America, and chemical distributors such as NorFalco have published standards and guidance for this purpose, as set out

in Appendix A. *See also* U.S. EPA, *Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1)* (2000).

43. The instances in which Respondent failed in its general duty to design and maintain the Facility as a safe facility taking such steps as are necessary to prevent a release of an extremely hazardous substance are listed under Conditions 2-4 of Appendix A.

44. Examples of the industry standards of care for Respondent's failure to design and maintain a safe facility taking such steps as are necessary to prevent releases of extremely hazardous substances are also listed in Appendix A.

45. By failing to (a) regularly inspect and maintain sulfuric acid tanks, (b) use appropriate piping for sulfuric acid service, and (c) properly separate incompatible chemicals in the Bleachery and Screen Buildings, Respondent failed to design and maintain a safe facility, in violation of the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

**COUNT 3 – FAILURE TO MINIMIZE THE  
CONSEQUENCES OF ACCIDENTAL RELEASES**

46. The allegations in paragraphs 1 through 45 are hereby realleged and incorporated by reference herein.

47. Pursuant to the General Duty Clause in Section 112(r)(1) of the CAA, owners and operators of stationary sources producing, processing, handling, or storing extremely hazardous substances have a general duty, to the same extent as 29 U.S.C. § 654, to minimize the consequences of accidental releases that do occur.

48. Industry standards and guidelines for minimizing the consequences of an accidental release from sulfuric acid systems such as those found at the Facility include, among other things, providing and maintaining adequate secondary containment for sulfuric acid storage

tanks and totes and promptly fixing or replacing leaking sulfuric acid tanks. NFPA, NACE, STI, and NorFalco have published standards and guidance for this purpose, as set out in Appendix A.

49. The instances in which Respondent failed in its general duty to minimize the consequences of accidental releases of extremely hazardous substances that might occur at the Facility are listed under Conditions 5-6 of Appendix A.

50. Examples of the industry standards of care for Respondent's failure to minimize the consequences of releases of extremely hazardous substances that might occur are also listed in Appendix A.

51. By failing to (a) use and maintain adequate secondary containment for sulfuric acid tanks and totes and (b) promptly fix or replace the leaking sulfuric acid tank, Respondent failed to minimize the consequences of an accidental release should one occur, in violation of the General Duty Clause, Section 112(r)(1) of the CAA, 42 U.S.C. § 7412(r)(1).

## **V. TERMS OF SETTLEMENT**

52. For the purpose of this proceeding, as required by 40 C.F.R. § 22.18(b)(2), Respondent:

- a. Admits that EPA has jurisdiction over the subject matter alleged in this CAFO;
- b. Neither admits nor denies the specific factual allegations contained in this CAFO;
- c. Consents to the assessment of a civil penalty as stated below;
- d. Consents to the issuance of any specific compliance or corrective action order;
- e. Consents to the conditions specified in this CAFO;

f. Consents to any stated Permit Action;

g. Waives any right to contest the alleged violations of law set forth in Section IV of this CAFO; and

h. Waives its right to appeal the Final Order accompanying this Consent Agreement.

53. For the purpose of this proceeding, Respondent also:

a. Agrees that this CAFO states a claim upon which relief can be granted against Respondent;

b. Acknowledges that this CAFO constitutes an enforcement action for purposes of considering Respondent's compliance history in any subsequent enforcement actions;

c. Waives any and all remedies, claims for relief and otherwise available rights to judicial or administrative review that Respondent may have with respect to any issue of fact or law set forth in this CAFO, including any right of judicial review under Section 307(b)(1) of the Clean Air Act, 42 U.S.C. § 7607(b)(1);

d. Consents to personal jurisdiction in any action to enforce this Consent Agreement or Final Order, or both, in the United States District Court for the District of Massachusetts; and

e. Waives any rights it may possess at law or in equity to challenge the authority of the EPA to bring a civil action in a United States District Court to compel compliance with the Consent Agreement or Final Order, or both, and to seek an additional penalty for such noncompliance, and agrees that federal law shall govern in any such civil action.

54. Pursuant to Sections 113(d)(2)(B) and (e) of the CAA, 42 U.S.C. § 7413(d)(2)(B) and (e), and taking into account the relevant statutory penalty criteria, the applicable penalty policy, and Respondent's cooperation in agreeing to perform the non-penalty obligations in this CAFO, EPA has determined that it is fair and proper to assess a civil penalty of \$305,278 for the violations alleged in this matter. Respondent consents to the issuance of this CAFO and consents for purposes of settlement to:

- a. pay the civil penalty cited in paragraph 55, below; and
- b. come into compliance with the General Duty Clause, 42 U.S.C.

§ 7412(r)(1), as described in paragraph 57 and Appendix B below.

**Penalty Payment**

55. Respondent agrees to:

- a. Pay the civil penalty of \$305,278 ("EPA Penalty") within 30 calendar days of the Effective Date of the CAFO;

- b. Pay the EPA Penalty using any of method, or combination of methods, provided on the website <http://www2.epa.gov/financial/additional-instructions-making-payments-epa>, and identifying every payment with "*In re Barnhardt Manufacturing Company*, Docket No. CAA-01-2022-0005;" and

- c. Within 24 hours of payment of the EPA Penalty, send proof of payment to the Regional Hearing Clerk and Laura J. Berry by e-mail and mail at the following addresses.

"Proof of payment" means, as applicable, a copy of the check, confirmation of credit card or debit card payment, confirmation of wire or automated clearinghouse transfer, and any other information required to demonstrate that payment has been made according to the EPA

requirements, in the amount due, and identified with “*In re Barnhardt Manufacturing Company*,  
Docket No. CAA-01-2022-0005”:

Laura J. Berry  
Enforcement Counsel  
U.S. Environmental Protection Agency, Region 1  
5 Post Office Square (Mail Code ORC 04-2)  
Boston, MA 02109  
Berry.LauraJ@epa.gov

Wanda I. Santiago  
Regional Hearing Clerk  
U.S. Environmental Protection Agency, Region 1  
5 Post Office Square (Mail Code ORC 04-6)  
Boston, MA 02109  
Santiago.Wanda@epa.gov  
and  
R1\_Hearing\_Clerk\_Filings@epa.gov

56. **Collection of Unpaid Civil Penalty:** Section 113(d)(5) of the CAA, 42 U.S.C. § 7413(d)(5), specifies the consequences of failure to pay the penalty on time. There are other actions EPA may take if respondent fails to timely pay: (a) refer the debt to a credit reporting agency or a collection agency pursuant to 42 U.S.C. § 7413(d)(5), 40 C.F.R. §§ 13.13, 13.14, and 13.33; (b) collect the debt by administrative offset (*i.e.*, the withholding of money payable by the United States to, or held by the United States for, a person to satisfy the debt the person owes the Government), which includes, but is not limited to, referral to the Internal Revenue Service for offset against income tax refunds, 40 C.F.R. Part 13, Subparts C and H; (c) suspend or revoke Respondent’s licenses or other privileges; or (d) suspend or disqualify Respondent from doing business with the EPA or engaging in programs the EPA sponsors or funds, 40 C.F.R. § 13.17. In any collection action, the validity, amount, and appropriateness of the penalty shall not be subject to review.

**Non-Penalty Conditions**

57. As a condition of settlement, Respondent agrees to conduct a Process Hazard Review and update inspection and maintenance procedures, as described more fully in Appendix B, in order to correct the violation cited above in Count 1 and come into compliance with the General Duty Clause.

58. By each deadline listed in Appendix B, Respondent shall submit to EPA written confirmation of compliance or noncompliance with the required action. Any notice of noncompliance shall state the reasons for the noncompliance and when compliance is expected. Notice of noncompliance will in no way excuse the noncompliance unless EPA agrees otherwise in writing or approves a delay. The Chief of EPA Region 1's Waste and Chemical Compliance Section shall have the authority to extend the deadlines in Appendix B for good cause, and the parties shall endeavor to communicate informally before missing deadlines or demanding stipulated penalties.

59. **Approval of Deliverables:**

a. After reviewing any document that is required to be submitted pursuant to this CAFO (the "Submission") EPA shall, in writing (i) approve the Submission; (ii) approve the Submission with specified conditions; (iii) approve part of the Submission and disapprove the remainder; or (iv) disapprove the Submission.

b. If the Submission is approved, Respondent shall take all actions required by the Submission in accordance with the schedules or requirements therein. If the Submission is conditionally approved or approved only in part, Respondent shall, upon written direction from EPA, take all actions required by the Submission that EPA determines are technically severable from any disapproved portions.



c. If the Submission is disapproved in whole or in part, Respondent shall, within 30 days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the Submission, or disapproved portion thereof, for approval in accordance with the preceding subparagraphs. If the resubmission is approved in whole or in part, Respondent shall proceed in accordance with the preceding subparagraphs.

d. Any stipulated penalties applicable to the original Submission, as provided in paragraphs 61 through 65 of this CAFO, shall accrue during the 30-day period or other specified period during which deficiencies are being corrected, but shall not be payable unless the resubmission is untimely or is disapproved in whole or in part, provided that, if the original Submission was so deficient as to constitute a material breach of Respondent's obligations under this CAFO as determined by EPA, the stipulated penalties applicable to the original Submission shall be due and payable notwithstanding any subsequent resubmission.

e. If a resubmission or portion thereof is disapproved in whole or in part, EPA may again require Respondent to correct any deficiencies, in accordance with the preceding subparagraphs, subject to the right of EPA to seek stipulated penalties as provided in the preceding subparagraphs.

**60. Notifications.**

a. Submissions required by this CAFO shall be in writing and shall be mailed to the following addresses with a copy also sent by electronic mail:

Leonard B. Wallace, IV, Environmental Scientist  
Waste and Chemical Compliance Section  
Enforcement and Compliance Assurance Division  
EPA Region 1  
5 Post Office Square, Suite 100 (Mail Code 05-4)  
Boston, MA 02109  
Wallace.Len@epa.gov

with copies by electronic mail to:

Laura J. Berry, Enforcement Counsel  
Office of Regional Counsel, EPA Region 1  
Berry.LauraJ@epa.gov

b. EPA will send all written communications to the following

representative(s) for Respondent:

Barnhardt Manufacturing, Inc.  
1100 Hawthorne Lane  
Charlotte, NC 28205  
lbb@barnhardt.net

With copies by electronic mail to:

Robert D. Cox Jr., Esq.  
Samantha P. McDonald, Esq.  
Bowditch & Dewey, LLP  
311 Main Street  
Worcester, MA 01615  
rcox@bowditch.com  
smcdonald@bowditch.com

c. All documents submitted to EPA in the course of implementing this

CAFO shall be available to the public unless identified as confidential by Respondent pursuant to 40 C.F.R. Part 2 Subpart B and determined by EPA to merit treatment as confidential business information in accordance with applicable law.

### **Stipulated Penalties**

61. Respondent's failure to comply with each of the provisions in paragraphs 57 through 60, above ("the Non-Penalty Conditions") shall become liable for stipulated penalties as set forth below.

62. In the event that Respondent fails to satisfactorily complete all provisions related to the compliance provisions as described above in paragraphs 57 through 60, Respondent shall be liable for stipulated penalties in the following amounts: \$500 per day for the first fifteen (15)

days of such violation; \$1,000 per day for the sixteenth (16th) through thirtieth (30th) days of such violation; and \$1,500 per day for each day of violation thereafter. The determination of whether the compliance requirements have been satisfactorily completed shall be in the sole discretion of EPA.

63. Respondent shall pay stipulated penalties not more than fifteen (15) days after receipt of written demand by EPA for such penalties. The method of payment shall be in accordance with the provisions of paragraph 55 above. Interest and late charges shall be paid as stated in paragraph 64.

64. *Collection of Unpaid Stipulated Penalty for Failure to Perform Non-Penalty Conditions:* Pursuant to 31 U.S.C. § 3717, EPA is entitled to assess interest and penalties on debts owed to the United States and a charge to cover the cost of processing and handling a delinquent claim. In the event that Respondent fails to timely pay any portion of the stipulated penalty relating to the performance of the Non-Penalty Conditions, the penalty shall be payable, plus accrued interest, without demand. Interest shall be payable at the rate of the United States Treasury tax and loan rate in accordance with 31 C.F.R. § 901.9(b)(2) and shall accrue from the original date on which the penalty was due to the date of payment. In addition, a penalty charge of six percent per year will be assessed on any portion of the debt which remains delinquent more than ninety (90) days after payment is due. Should assessment of the penalty charge on the debt be required, it will be assessed as of the first day payment is due under 31 C.F.R. § 901.9(d). In any such collection action, the validity, amount, and appropriateness of the penalty shall not be subject to review.

65. EPA may, in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due under this CAFO.

### **Additional Provisions**

66. The terms, conditions, and compliance requirements of this CAFO may not be modified or amended except upon the written agreement of both parties, and approval of the Regional Judicial Officer, except that the Regional Judicial Officer need not approve written agreements modifying schedules for the compliance conditions in paragraphs 57 through 60.

67. Respondent agrees that the time period from the Effective Date of this CAFO until all of the conditions specified in paragraphs 57 through 60 are completed (the “Tolling Period”) shall not be included in computing the running of any statute of limitations potentially applicable to any action brought by Complainant on any claims (the “Tolled Claims”) set forth in Section IV of this CAFO. Respondent shall not assert, plead, or raise in any fashion, whether by answer, motion or otherwise, any defense of laches, estoppel, or waiver, or other similar equitable defense based on the running of any statute of limitations or the passage of time during the Tolling Period in any action brought on the Tolled Claims.

68. By signing this CAFO, Respondent acknowledges that this CAFO will be available to the public and agrees that this CAFO does not contain any confidential business information or personally identifiable information.

69. By signing this CAFO, the undersigned representative of Complainant and the undersigned representative of Respondent each certify that he or she is fully authorized to execute and enter into the terms and conditions of this CAFO and has the legal capacity to bind the party he or she represents.

70. By signing this CAFO, both parties agree that each party’s obligations under this CAFO and EPA’s compromise of statutory maximum penalties constitute sufficient consideration for the other party’s obligations.

71. By signing this CAFO, Respondent certifies that the information it has supplied concerning this matter was at the time of submission true, accurate, and complete for each such submission, response, and statement. Respondent acknowledges that there are significant penalties for submitting false or misleading information, including the possibility of fines and imprisonment for knowing submission of such information, under 18 U.S.C. § 1001.

72. Complainant and Respondent, by entering into this CAFO, each consent to accept digital signatures hereupon. Respondent further consents to accept electronic service of the fully executed CAFO, by e-mail, at lbb@barnhardt.net with copies to smcdonald@bowditch.com and rcox@bowditch.com. Respondent understands that these e-mail addresses may be made public when the CAFO and Certificate of Service are filed and uploaded to a searchable database.

**VI. EFFECT OF CONSENT AGREEMENT AND ATTACHED FINAL ORDER**

73. In accordance with 40 C.F.R. § 22.18(c), completion of the terms of this CAFO resolves only Respondent's liability for federal civil penalties for the violations specifically alleged above.

74. This CAFO constitutes a settlement by EPA of all claims for civil penalties pursuant to Section 113(d) of the CAA for the violations alleged herein. Compliance with this CAFO shall not be a defense to any other actions subsequently commenced pursuant to federal laws and regulations administered by EPA for matters not addressed in this CAFO, and it is the responsibility of Respondent to comply with all applicable provisions of federal, state, or local law.

75. Penalties paid pursuant to this CAFO shall not be deductible for purposes of federal taxes. For purposes of the identification requirement of Section 162(f)(2)(A)(ii) of the Internal Revenue Code, 26 U.S.C. § 162(f)(2)(A)(ii), and 26 C.F.R. § 1.162-21(b)(2),

performance of the conditions in paragraph 57 is restitution or required to come into compliance with the law.

76. This CAFO constitutes the entire agreement and understanding of the parties and supersedes any prior agreements or understandings, whether written or oral, among the parties with respect to the subject matter hereof.

77. Any violation of this CAFO may result in a civil judicial action for an injunction or civil penalties as provided in Section 113(b)(2) of the Act, 42 U.S.C. § 7413(b)(2), as well as criminal sanctions as provided in Section 113(c) of the Act, 42 U.S.C. § 7413(c). The EPA may use any information submitted under this CAFO in an administrative, civil judicial, or criminal action.

78. Nothing in this CAFO shall relieve Respondent of the duty to comply with all applicable provisions of the Act and other federal, state, or local laws or statutes, nor shall it restrict the EPA's authority to seek compliance with any applicable laws or regulations, or be construed to be a ruling on, or determination of, any issue related to any federal, state, or local permit.

79. Nothing herein shall be construed to limit the power of the EPA to undertake any action against Respondent or any person in response to conditions that may present an imminent and substantial endangerment to the public health, welfare, or the environment.

80. The EPA reserves the right to revoke this CAFO and settlement penalty if and to the extent that the EPA finds, after signing this CAFO, that any information provided by Respondent was materially false or inaccurate at the time such information was provided to the EPA, and the EPA reserves the right to assess and collect any and all civil penalties for any

violation described herein. The EPA shall give Respondent notice of its intent to revoke, which shall not be effective until received by Respondent in writing.

81. This CAFO in no way relieves Respondent or its employees of any criminal liability, and EPA reserves all its other criminal and civil enforcement authorities, including the authority to seek injunctive relief and the authority to undertake any action against Respondent in response to conditions which may present an imminent and substantial endangerment to the public health, welfare, or the environment.

82. Except as qualified by paragraphs 56 and 64 (overdue penalty collection), each party shall bear its own costs and fees in this proceeding including attorney's fees. Respondent specifically waives any right to recover such costs from EPA pursuant to the Equal Access to Justice Act, 5 U.S.C. § 504, or other applicable laws.

**VII. EFFECTIVE DATE**

83. Respondent and Complainant agree to issuance of the attached Final Order. Upon filing, EPA will electronically transmit a copy of the filed CAFO to the Respondent. This CAFO shall become effective after execution of the Final Order by the Regional Judicial Officer, on the date of filing with the Regional Hearing Clerk.

FOR COMPLAINANT:

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James Chow *for* Karen McGuire, Director  
Enforcement and Compliance Assurance Division  
U.S. Environmental Protection Agency  
Region 1 – New England

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Date

FOR RESPONDENT:

DocuSigned by:  
  
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10/20/2021

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Lewis Barnhardt  
President and Chief Operating Officer  
Barnhardt Manufacturing Company

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Date



**FINAL ORDER**

Pursuant to 40 C.F.R. §§ 22.18(b) and (c) of EPA’s Consolidated Rules of Practice and Sections 113(d)(1) and (d)(2)(B) of the Clean Air Act, 42 U.S.C. §§ 7413(d)(1) and (d)(2)(B), the foregoing Consent Agreement resolving this matter is incorporated by reference into this Final Order and is hereby ratified. Respondent is ordered to pay the civil penalty amount specified in the Consent Agreement, in the manner indicated.

The terms of the Consent Agreement will become effective on the date it is filed with the Regional Hearing Clerk.

Date: \_\_\_\_\_

\_\_\_\_\_  
LeAnn Jensen  
Regional Judicial Officer  
U.S. Environmental Protection Agency, Region 1

### Appendix A

<b>Alleged Hazard/Dangerous Condition</b>	<b>GDC Violation</b>	<b>How Condition Cited Could Lead to or Exacerbate the Consequences of a Release, Causing Harm</b>	<b>Examples of Industry Standards of Care, Showing that (1) Hazard is Recognized by Owner/Operator’s Industry, and (2) There are Ways to Eliminate or Reduce the Hazard</b>
<p><u>Condition 1</u></p> <p>Barnhardt failed to conduct any hazard review or process hazard analysis for the sulfuric acid systems in place at the time of the Release. Moreover, the “New Equipment Safety Audit” and “Hazard Risk Assessment” documents that Barnhardt completed for the new sulfuric acid systems did not sufficiently assess all hazards, scenarios, and consequences of the new systems. For example, these documents are identical for the bleaching and wastewater treatment systems, even though each system uses unique equipment and presents unique hazards. Also, these documents do not identify a number of common hazards or hazards relating to all pieces of equipment used in the systems, and they do not consider human factors, siting, prior releases, or affected systems, populations, or environments.</p>	<p>Failure to identify hazards using appropriate hazard assessment techniques.</p>	<p>Identification and understanding of hazards are critical first steps that are necessary in order to abate those hazards in a way that reduces the chance of or minimizes the consequences of a release.</p>	<p><i>See, e.g.</i>, Center for Chemical Process Safety, <u>Guidelines for Hazard Evaluation Procedures</u> (2008); U.S. Env’tl. Prot. Agency, <i>Guidance for Implementation of the General Duty Clause Clean Air Act Section 112(r)(1)</i>, § 2.3.1 (2000); NFPA 400-2016 §§ 7.2.1, 7.2.2. (specifying that industrial processes be reviewed and written plans be prepared by qualified personnel to ensure that fire and explosion and chemical hazards resulting from loss of containment or potential chemical interaction are prevented).</p>
<p><u>Condition 2</u></p> <p>Barnhardt failed to regularly inspect and maintain its sulfuric acid tanks. Barnhardt did not conduct regular inspections of the over 50-year-old sulfuric acid storage tank that breached, resulting in the Release (“AST”), or the indoor Day Tank in the 17 months prior to the Release, and Barnhardt had never conducted any formal external</p>	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p>	<p>The failure to inspect sulfuric acid tanks at regular intervals risks not knowing the corrosion rate or the remaining useful life of the tank, increasing the chance that the tank will fail and lead to a potentially catastrophic release.</p>	<p><i>See, e.g.</i>, STI SP001-2018, Sections 6.5, 6.6, and Table 5.5 (requiring monthly and annual visual inspections for aboveground storage tanks with less than 5,000-gallon capacity); API 653-2009, Sections 6.4.2.1 (initial internal inspection interval should not exceed 10 years unless a longer period can be justified) and 6.4.2.2 (subsequent internal inspection frequencies should not exceed 20 years unless otherwise justified); <i>Assmann Corporation of America</i>, Tank Installation &amp; Use Guidelines for Bulk Storage Tanks, Maintenance Schedule and Check List (calling for monthly</p>

Alleged Hazard/Dangerous Condition	GDC Violation	How Condition Cited Could Lead to or Exacerbate the Consequences of a Release, Causing Harm	Examples of Industry Standards of Care, Showing that (1) Hazard is Recognized by Owner/Operator's Industry, and (2) There are Ways to Eliminate or Reduce the Hazard
<p>or internal inspections, nor any non-destructive wall thickness testing to maintain the mechanical integrity of the AST. Further, Barnhardt did not conduct regular inspections of the temporary sulfuric acid system in place from the time of the Release until its new sulfuric acid systems were installed in July 2020, nor did Barnhardt conduct regular inspections of the new system following its installation.</p>			<p>checks of fittings for possible seepage or leaks, inside and outside surface area checks every 6 months after the first 2 years of service for sulfuric acid tanks); NACE SP0294-2006, Sections 5.1.2.1 (requiring routine in-service inspections, external visual inspections, external ultrasonic thickness inspections, and internal inspections in accordance with NACE SP0294 and API 653 guidelines) and 5.2 (records for each sulfuric acid tank shall be maintained, including but not limited to results of all inspections, maintenance, and repair work).</p>
<p><u>Condition 3</u></p> <p>Barnhardt failed to use appropriate piping for sulfuric acid service. At the time of inspection, PVC piping, which is not recommended for sulfuric acid service, was observed to be in use and was sagging in several places between the Screen Building and the Bleachery. PVC piping was again installed with the Facility's new sulfuric acid systems in July 2020 but was later swapped for metal piping.</p>	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p>	<p>PVC piping used for sulfuric acid service can become weak and break, thereby releasing its contents.</p>	<p><i>See, e.g., NorFalco's Sulfuric Acid Handbook</i>, page 25 (PVC or CPVC piping not recommended for liquid sulfuric acid service, except possibly as a liner due to the unpredictable risk of mechanical failure, which can result in acid exposure); NACE RP0391-2001, Sections 2.6.1 and 3.3.10 (thermoplastic piping should only be used after a hazard review and detailed engineering review are conducted, and, if used, lined piping should be considered due to the mechanical weakness of the material).</p>
<p><u>Condition 4</u></p> <p>During the Inspection, EPA inspectors observed several examples of incompatible chemicals stored sufficiently close together such that a spill or release of one chemical could have resulted in a chemical reaction with other chemicals, creating toxic gases</p>	<p>Failure to design and maintain a safe facility taking such steps as are necessary to prevent releases.</p>	<p>According to NOAA's CAMEO Chemicals tool, the interaction of any two of these substances could have caused an exothermic reaction liberating toxic gases and corrosive reaction products. Moreover, the interaction of sulfuric acid with sodium hydroxide or</p>	<p><i>See, e.g., NFPA 400-2012</i> § 6.1.12 (incompatible materials shall be separated); <i>NFPA 1-2012</i> § 60.5.1.12; <i>IFC</i> § 2703.9.8; and <i>CCPS's Guidelines for Safe Warehousing of Chemicals</i> § 2.6.</p>

<b>Alleged Hazard/Dangerous Condition</b>	<b>GDC Violation</b>	<b>How Condition Cited Could Lead to or Exacerbate the Consequences of a Release, Causing Harm</b>	<b>Examples of Industry Standards of Care, Showing that (1) Hazard is Recognized by Owner/Operator's Industry, and (2) There are Ways to Eliminate or Reduce the Hazard</b>
<p>and/or causing a fire or explosion.<sup>4</sup> Sodium hydroxide, sodium bisulfite, and hydrogen peroxide tanks and sulfuric acid totes were all stored very close to each other in the lower Bleachery space, with no secondary containment separating them. At the time of inspection, EPA observed visible puddles (pH 1-2) and streams of chemicals on the floor in this area migrating toward trench drains, where the chemicals were commingling. In the Screen Building, sulfuric acid is stored and used just a short distance away from a large sodium hydroxide tank, with no berms or secondary containment separating them.</p>		<p>hydrogen peroxide, or the interaction of sodium hydroxide with hydrogen peroxide could have caused an intense or explosive reaction.</p>	
<p><u>Condition 5</u></p> <p>Barnhardt failed to use and maintain adequate secondary containment for sulfuric acid tanks and totes. At the time of inspection, EPA inspectors observed cracks in the floor of the containment dike for the sulfuric acid AST, as well as damage to the coating, staining, and pitting, indicating the dike was not being properly maintained. EPA inspectors also observed a sulfuric acid drum on the first floor of the Screen Building without secondary containment and with unsecured</p>	<p>Failure to minimize the consequences of releases which do occur.</p>	<p>Secondary containment is critical to ensure the impact of any accidental spill is minimized and limited to the immediate area.</p>	<p><i>See, e.g.,</i> NFPA 400-2016, Sections 6.2.1.9.2.2 (calling for spill control for hazardous liquids in containers over 55 gallons via liquid-tight sloped or recessed floors, sills or dikes, or sumps and collection systems), 6.2.1.9.2.3 (floors, sills, dikes, sumps, and/or collection systems should be liquid-tight and constructed of compatible, noncombustible materials), 6.2.1.9.3.1 (calling for secondary containment for hazardous liquids stored indoors in individual containers over 55 gallons or multiple containers over 1,000 gallons in the aggregate), 6.2.1.9.3.4 (areas requiring secondary containment shall contain or drain the hazardous material via liquid-tight sloped or recessed floors, liquid-tight raised or recessed sills or dikes, sumps and collection systems, or drainage systems leading to approved locations), and 12.2.3 (secondary containment shall be provided for corrosive liquids</p>

<sup>4</sup> The reactivity of chemicals at the facility was predicted through the use of CAMEO Chemicals, an on-line tool designed for people who are involved in hazardous material incident response and planning, developed by the National Oceanic and Atmospheric Administration's Office of Response and Restoration in partnership with the Environmental Protection Agency's Office of Emergency Management and the U.S. Coast Guard's Research and Development Center.

<b>Alleged Hazard/Dangerous Condition</b>	<b>GDC Violation</b>	<b>How Condition Cited Could Lead to or Exacerbate the Consequences of a Release, Causing Harm</b>	<b>Examples of Industry Standards of Care, Showing that (1) Hazard is Recognized by Owner/Operator's Industry, and (2) There are Ways to Eliminate or Reduce the Hazard</b>
plastic tubing coming out of an open bung hole. There was standing sulfuric acid on top of the drum.			in accordance with 6.2.1.9.3); NACE Standard RP0391, Section 3.1.4 (recommended design features for sulfuric acid tanks include "a suitable containment or run-off area in case of release"); NACE Standard SP0294, Section 6.3 (the area around sulfuric acid tank systems should be arranged such that any spillage goes to an appropriate containment and neutralization system); NorFalco's <i>Sulfuric Acid Handbook</i> , page 24 ("it is recommended that storage tanks be enclosed by a secondary containment wall having a capacity no less than 110% of the largest tank volume (local regulations may vary). The containment area should be kept dry and clean. In the event of a leak, the acid should be neutralized and pumped out before it reaches a sewer or watercourse.").
<p><u>Condition 6</u></p> <p>As described more thoroughly in paragraph 29 of the CAFO, Barnhardt failed to promptly fix or replace the leaking sulfuric acid tank.</p>	Failure to minimize the consequences of releases which do occur.	Failing to promptly correct a small leak of concentrated acid from a metal tank can quickly accelerate to a catastrophic release, as the highly corrosive substance eats away at the metal.	<i>See, e.g.</i> , STI SP001-2018, Section 10.2 (a tank is considered not suitable for service if conditions are noted that jeopardize the life or safety of personnel working near the tank, including but not limited to visible signs of leakage from appurtenances which cannot be resolved without removing the tank from service).

## Appendix B

1. **Conduct/Update Process Hazard Review:** As soon as possible, but no later than 90 days after the effective date of this CAFO, Respondent shall, with the help of a third-party consultant, conduct a Process Hazard Review (“PHR”) for the sulfuric acid bulk storage and delivery systems at the facility using appropriate, industry-recognized hazard assessment techniques. The consultant must have on his or her team a person (or people) with (1) experience conducting process hazard analyses and reviews under Section 112(r) of the CAA, and (2) knowledge of the industry codes, standards, and guidelines that apply to storage and use of sulfuric acid. The PHR shall identify and describe what methodology is being used and should include, but not be limited to, the following concepts and issues:
  - a. The PHR should consider hazards, scenarios, and consequences that are specific to each of the two sulfuric acid systems (*i.e.*, Building 134 Bleachery system and Screen Building 132 system) (the “Systems”), including but not limited to site-specific equipment, technology, operations, physical and geographic siting, and should consider potential release scenarios based on such site-specific information, including the history of releases at the facility;
  - b. The PHR should consider hazards, scenarios, and consequences for *all phases* of the Systems, including but not limited to receipt and unloading of sulfuric acid totes from the vendor, movement and storage of totes in the Screen Building and Bleachery, unloading of sulfuric acid from totes to bulk storage tanks, and transfer of acid to its end use (*i.e.*, kier tanks in the Bleachery and injection point in the wastewater treatment plant (“WWTP”) process);
  - c. The PHR should consider hazards, scenarios, and consequences/impacts to all affected populations (*e.g.*, workers, emergency responders, and the public);
  - d. The PHR should consider hazards, scenarios, and consequences/impacts to all affected systems (*e.g.*, all process equipment, piping, hoses, and infrastructure within and adjacent to all phases of all hazardous chemical systems on site, including but not limited to the sulfuric acid systems, other hazardous chemical systems, and the potential for co-mingling of incompatible chemicals due to the co-location of such chemicals throughout the facility, including on the floor of the Bleachery and in the wet wells and associated conveyances);
  - e. The PHR should consider hazards, scenarios, and consequences/impacts to the environment (*e.g.*, air effects, impacts of having incompatible chemicals flow through the trench system and wet wells to the WWTP, and the potential for hazardous chemicals spilled outside to flow through the Tailrace to the North River);
  - f. The PHR should evaluate human factors when considering hazards, scenarios, and consequences (*i.e.*, the potential for human error to cause an accident);
  - g. The PHR should consider scenarios from natural events, including but not limited to flooding, hurricanes, tornadoes, snowstorms, and earthquakes, and consequences of these events; and
  - h. The PHR should evaluate the adequacy of existing safeguards and recommend additional controls and countermeasures to address hazards for which existing

safeguards are not sufficient (*e.g.*, secondary containment for tanks and totes in Bleachery and Screen Building).

- i. When conducting the PHR, Respondent should assess whether the facility's existing operating procedures, emergency response manual, and other policies and procedures are up to date, being fully implemented, and reflect the current technology, equipment, and administrative controls for the Systems on site.
2. **Update Inspection and Maintenance Procedures:** As soon as possible, but no later than 90 days after the effective date of this CAFO, Respondent shall update the facility's mechanical integrity/preventative maintenance procedures and/or develop additional procedures that include the following equipment:
- a. Hoses;
  - b. Drains, trenches, underground piping, and other conveyances or tanks (*e.g.*, wet wells) from the Bleachery and Screen Buildings to the WWTP; and
  - c. Metallic sulfuric acid delivery piping from the bulk storage tank to the kier tanks in the Bleachery and from the storage tank to the WWTP injection point in the Screen Building.

New or updated procedures shall include, as appropriate, visual inspection and non-destructive testing procedures and maintenance schedules in accordance with appropriate industry codes and standards (*e.g.*, API 570) and manufacturer recommendations for ensuring the materials of construction and coatings are fit for service.

3. **Document Submittal Requirements:** As soon as possible, but no later than 120 days after the effective date of this CAFO, Respondent shall submit to EPA the following documents:
- a. A copy of the full PHR described in paragraph 1 above, including a list of recommendations resulting from the exercise and a schedule for implementation of those recommendations;
  - b. A copy of the updated and/or newly developed mechanical integrity/preventative maintenance procedures described in paragraph 2 above; and
  - c. A list of expenditures associated with implementing the requirements of this Appendix.