



Purchasing Department
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<http://fiscal.gmu.edu/purchasing>

**STANDARD CONTRACT
GMU-CM0905-23-02**

This Contract entered on this 5th day of July, 2024 (Effective Date) by BMS CAT of Maryland LLC hereinafter called “Contractor” (located at 8280 Stayton Drive, C-2 Jessup, MD 20794) and George Mason University hereinafter called “Mason,” or “University”.

- I. **WITNESSETH** that the Contractor and Mason, in consideration of the mutual covenants, promises and agreement herein contained, agree as follows:
- II. **SCOPE OF CONTRACT:** The Contractor shall provide emergency response services for collections stabilization and recovery for the University Libraries of George Mason University as set forth in the Contract documents. During the term of this Contract, Contractor may issue Statements of Work (“SOW”) to modify the scope of the engagement or otherwise change the work to be performed under this Contract. All SOW’s must be on a form approved by Mason prior to the start of this Contract. Any SOW that does not conform to the pre-approved SOW form shall be void even if approved by Mason. Additionally, the SOW shall be limited to modifications to the scope of the engagement or other changes to the work to be performed under this Contract; any other terms contained in a SOW shall be void and have no effect even if approved by Mason. Other than changes to the scope of the engagement or the work to be performed under this Contract, Contractor may not change, modify, add, supersede, or remove any term from this Contract through a SOW.
- III. **PERIOD OF CONTRACT:** One year from the Effective Date with four (4) successive one-year renewal options.
- IV. **PRICE SCHEDULE:** Per Preferred Time and Material Rate Schedule submitted in vendor proposal dated October 30, 2023 see page 247-256.
- V. **CONTRACT ADMINISTRATION:** Amy Sullivan shall serve as Contract Administrator for this Contract and shall use all powers under the Contract to enforce its faithful performance. The Contract Administrator shall determine the amount, quality and acceptability of work and shall decide all other questions in connection with the work. All direction and order from Mason shall be transmitted through the Contract Administrator, however, the Contract Administrator shall have no authority to approve changes which shall alter the concept or scope or change the basis for compensation.
- VI. **METHOD OF PAYMENT:** Paymode-X, Net30. <http://www.paymode.com/gmu>. Contractor shall submit invoices directly to acctpay@gmu.edu with a copy to the Contract Administrator. Invoices will be paid Net 30 after goods received, services rendered, or receipt in Mason’s Accounts Payable email box, acctpay@gmu.edu, whichever is later. Invoices must reference a Purchase Order number to be considered valid.
- VII. **THE CONTRACT DOCUMENTS SHALL CONSIST OF (In order of precedence):**
 - A. This signed Contract;
 - B. Negotiation Responses dated February 28, 2024 (attached);
 - C. RFP No. GMU-CM0905-23, in its entirety (attached);
 - D. Contractor’s proposal dated October 30, 2023 (attached).
- VIII. **GOVERNING RULES:** This Contract is governed by the provisions of the Restructured Higher Education Financial and Administrative Operations Act, Chapter 10 (§ [23.1-1000](#) et seq.) of Title 23.1 of the Code of Virginia, and the “*Governing Rules*” and the *Purchasing Manual for Institutions of Higher Education and their Vendors*. Documents may be viewed at: <https://vascupp.org>.
- IX. **CONTRACT PARTICIPATION:** It is the intent of this Contract to allow for cooperative procurement. Accordingly, any public body, public or private health or educational institutions, or affiliated corporations may access this Contract if authorized by the Contractor.
Participation in this Contract is strictly voluntary. If authorized by the Contractor, the contract will be extended to the entities indicated above to purchase goods and services in accordance with contract terms. As a separate contractual relationship, the

participating entity will place its own orders directly with the Contractor(s) and shall fully and independently administer its use of the contract(s) to include contractual disputes, invoicing and payments without direct administration from the University. No modification of this Contract or execution of a separate agreement is required to participate; however, the participating entity and the Contractor may modify the terms and conditions of the contract to accommodate specific governing laws, regulations, policies, and business goals required by the participating entity. Any such modification will apply solely between the participating entity and the Contractor.

The University may request the Contractor provide semi-annual usage reports for all entities accessing the Contract. The University shall not be held liable for any costs or damages incurred by any other participating entity as a result of any authorization by the Contractor to extend the Contract. It is understood and agreed that the University is not responsible for the acts or omissions of any entity and will not be considered in default of the contract no matter the circumstances.

Use of this Contract does not preclude any participating entity from using other contracts or competitive processes as needed.

X. STANDARD TERMS AND CONDITIONS:

- A. APPLICABLE LAW AND CHOICE OF FORUM: This Contract shall be construed, governed, and interpreted pursuant to the laws of the Commonwealth of Virginia. All disputes arising under this Contract shall be brought before an appropriate court in the Commonwealth of Virginia.

- B. ANTI-DISCRIMINATION: By entering into this Contract Contractor certifies to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians with Disabilities Act, the Americans with Disabilities Act and §§ 9&10 of the *Governing Rules*. If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the Contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (*Governing Rules*, § 36).

In every contract over \$10,000 the provisions in 1. and 2. below apply:

- 1. During the performance of this Contract, the Contractor agrees as follows:
 - a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.

- 2. The Contractor will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or Contractor.

- C. ANTITRUST: By entering into this Contract, the Contractor conveys, sells, assigns, and transfers to the Commonwealth of Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the Commonwealth of Virginia under this Contract.

- D. ASSIGNMENT: Neither party will assign or otherwise transfer its rights or obligations under this Contract without both parties' prior written consent. Any attempted assignment, transfer, or delegation without such consent is void.

- E. AUDIT: The Contractor shall retain all books, records, and other documents relative to this Contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. The University, its

authorized agents, and/or state auditors shall have full access to and the right to examine any of said materials during said period.

- F. AVAILABILITY OF FUNDS: It is understood and agreed between the parties herein that the University shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this Contract.
- G. AUTHORIZED SIGNATURES: The signatory for each Party certifies that he or she is an authorized agent to sign on behalf such Party.
- H. BACKGROUND CHECKS: Contractor's employees (including subcontractors) performing services on any Mason campus must have successfully completed a criminal background check prior to the start of their work assignment/service. As stated in [Administrative Policy Number 2221 – Background Investigations](#), the criminal background investigation will normally include a review of the individual's records to include Social Security Number Search, Credit Report (if related to potential job duties), Criminal Records Search (any misdemeanor convictions and/or felony convictions are reported) in all states in which the employee has lived or worked over the past seven years, and the National Sex Offender Registry. In addition, the Global Watch list (maintained by the Office of Foreign Assets Control of The US Department of Treasury) should be reviewed. Signature on this Contract confirms your compliance with this requirement.
- I. CANCELLATION OF CONTRACT: Mason reserves the right to cancel this Contract, in part or in whole, without penalty, for any reason, upon 60 days written notice to the Contractor. Upon written notice of cancellation from Mason, Mason shall be fully released from any further obligation under the Contract and Contractor agrees to directly refund all payments, for services not already performed, to Mason, including any pre-paid deposits, within 14 days. Any contract cancellation notice shall not relieve the Contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.
- J. CHANGES TO THE CONTRACT: Changes can be made to this Contract in any of the following ways:
 - 1. The parties may agree in writing to modify the scope of this Contract.
 - 2. Mason may order changes within the general scope of Contract at any time by written notice to Contractor. Changes within the scope of this Contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. Contractor shall comply with the notice upon receipt. Contractor shall be compensated for any additional costs incurred as the result of such order and shall give Mason a credit for any savings. Said compensation shall be determined by one of the following methods:
 - a. By mutual agreement between the parties in writing; or
 - b. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the Contractor accounts for the number of units of work performed, subject to the Mason's right to audit Contractor's records and/or to determine the correct number of units independently; or
 - c. By ordering Contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by Contract. The same markup shall be used for determining a decrease in price as the result of savings realized. Contractor shall present Mason with all vouchers and records of expenses incurred and savings realized. Mason shall have the right to audit the records of Contractor as it deems necessary to determine costs or savings. Any claim for an adjustment in price under this provision must be asserted by written notice to Mason within thirty (30) days from the date of receipt of the written order from Mason. If the Parties fail to agree on an amount of adjustment, the question of an increase or decrease in the Contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes provided by the Disputes Clause of this Contract or, if there is none, in accordance with the disputes provisions of the Commonwealth of Virginia Purchasing Manual for Institutions of Higher Education and Their Contractors. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this Contract shall excuse the Contractor from promptly complying with the changes ordered by Mason or with the performance of this Contract generally.
- K. CLAIMS: Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days

after final payment. However, written notice of the Contractor's intention to file a claim shall be given at the time of the occurrence or beginning of the work upon which the claim is based. Nothing herein shall preclude a contract from requiring submission of an invoice for final payment within a certain time after completion and acceptance of the work or acceptance of the goods. Pendency of claims shall not delay payment of amounts agreed due in the final payment.

1. The Contractor must submit written claim to:
Chief Procurement Officer
George Mason University
4400 University Drive, MSN 3C5
Fairfax, VA 22030
 2. The Contractor must submit any unresolved claim in writing no later than 60 days after final payment to the Chief Procurement Officer.
 3. Upon receiving the written claim, the Chief Procurement Officer will review the written materials relating to the claim and will mail their decision to the Contractor within 60 days after receipt of the claim.
 4. The Contractor may appeal the Chief Procurement Officer's decision in accordance with §55 of the *Governing Rules*.
- L. COLLECTION AND ATTORNEY'S FEES: The Contractor shall pay to Mason any reasonable attorney's fees or collection fees, at the maximum allowable rate permitted under Virginia law, incurred in enforcing this Contract or pursuing and collecting past-due amounts under this Contract.
- M. COMPLIANCE: All goods and services provided to Mason shall be done so in accordance with any and all applicable local, state, federal, and international laws, regulations and/or requirements and any industry standards, including but not limited to: the Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health Act (HITECH), Government Data Collection and Dissemination Practices Act, Gramm-Leach-Bliley Financial Modernization Act (GLB), Payment Card Industry Data Security Standards (PCI-DSS), Americans with Disabilities Act (ADA), and Federal Export Administration Regulations. Any Contractor personnel visiting Mason facilities will comply with all applicable Mason policies regarding access to, use of, and conduct within such facilities. Mason's policies can be found at <https://universitypolicy.gmu.edu/all-policies/> and any facility specific policies can be obtained from the facility manager.
- N. CONFIDENTIALITY OF PERSONALLY IDENTIFIABLE INFORMATION: The Contractor shall ensure that personally identifiable information ("PII") which is defined as any information that by itself or when combined with other information can be connected to a specific person and may include but is not limited to personal identifiers such as name, address, phone, date of birth, Social Security number, student or personal identification numbers, driver's license numbers, state or federal identification numbers, biometric information, religious or political affiliation, non-directory information, and any other information protected by state or federal privacy laws, will be collected and held confidential and in accordance with this agreement, during and following the term of this Contract, and will not be divulged without the individual's and Mason's written consent and only in accordance with federal law or the Code of Virginia.
- O. CONFLICT OF INTEREST: Contractor represents to Mason that its entering into this Contract with Mason and its performance through its agents, officers and employees does not and will not involve, contribute to nor create a conflict of interest prohibited by Virginia State and Local Government Conflict of Interests Act (Va. Code 2.2-3100 *et seq*), the Virginia Ethics in Public Contracting Act (§57 of the *Governing Rules*), the Virginia Governmental Frauds Act (Va. Code 18.2 – 498.1 *et seq*) or any other applicable law or regulation.
- P. CONTINUITY OF SERVICES:
1. The Contractor recognizes that the services under this Contract are vital to Mason and must be continued without interruption and that, upon contract expiration, a successor, either Mason or another contractor, may continue them. The Contractor agrees:
 - a. To exercise its best efforts and cooperation to affect an orderly and efficient transition to a successor;
 - b. To make all Mason owned facilities, equipment, and data available to any successor at an appropriate time prior to the expiration of the contract to facilitate transition to successor; and
 - c. That the University Procurement Officer shall have final authority to resolve disputes related to the transition of the contract from the Contractor to its successor.

2. The Contractor shall, upon written notice from the Procurement Officer, furnish phase-in/phase-out services for up to ninety (90) days after this Contract expires and shall negotiate in good faith a plan with the successor to execute the phase-in/phase-out services. This plan shall be subject to the Procurement Officer's approval.
 3. The Contractor shall be reimbursed for all reasonable, pre-approved phase-in/phase-out costs (i.e., costs incurred within the agreed period after contract expiration that result from phase-in, phase-out operations). All phase-in/phase-out work fees must be approved by the Procurement Officer in writing prior to commencement of said work.
- Q. **DEBARMENT STATUS:** As of the Effective Date, the Contractor certifies that it is not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of services covered by this Contract, nor is the Contractor an agent of any person or entity that is currently so debarred.
- R. **DEFAULT:** In the case of failure to deliver goods or services in accordance with Contract terms and conditions, Mason, after due oral or written notice, may procure them from other sources and hold Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which Mason may have.
- S. **DRUG-FREE WORKPLACE:** Contractor has, and shall have in place during the performance of this Contract, a drug-free workplace policy (DFWP), which it provides in writing to all its employees, vendors, and subcontractors, and which specifically prohibits the following on company premises, during work-related activities, or while conducting company business: the sale, purchase, manufacture, dispensation, distribution possession, or use of any illegal drug under federal law (including marijuana). For purposes of this section, "drug-free workplace" covers all sites at which work is done by Contractor in connection with this Contract.
- T. **ENTIRE CONTRACT:** This Contract constitutes the entire understanding of the Parties with respect to the subject matter herein and supersedes all prior oral or written contracts with respect to the subject matter herein. This Contract can be modified or amended only by a writing signed by all of the Parties.
- U. **EXPORT CONTROL:**
1. **Munitions Items:** If the Contractor is providing any items, data or services under this order that are controlled by the Department of State, Directorate of Defense Trade Controls, International Traffic in Arms Regulations ("ITAR"), or any items, technology or software controlled under the "600 series" classifications of the Bureau of Industry and Security's Commerce Control List ("CCL") (collectively, "Munitions Items"), prior to delivery, Contractor must:
 - a. notify Mason (by sending an email to export@gmu.edu), and
 - b. receive written authorization for shipment from Mason's Director of Export Controls.

The notification provided by the Contractor must include the name of the Mason point of contact, identify and describe each ITAR or CCL-controlled commodity, provide the associated U.S. Munitions List (USML) category number(s) or Export Control Classification Number, and indicate whether or not the determination was reached as a result of a commodity jurisdiction determination, or self-classification process. The Contractor promises that if it fails to obtain the required written pre-authorization approval for shipment to Mason of any Munitions Item, it will reimburse Mason for any fines, legal costs and other fees imposed for any violation of export controls regarding the Munition Item that are reasonably related to the Contractor's failure to provide notice or obtain Mason's written pre-authorization.
 2. **Dual-Use Items:** If the Contractor is providing any dual-use items, technology or software under this order that are listed on the CCL in a series other than a "600 series", Contractor must (i) include the Export Control Classification Number (ECCN) on the packing or other transmittal documentation traveling with the item(s) and, (ii) send a description of the item, its ECCN, and the name of the Mason point of contact to: export@gmu.edu .
- V. **FORCE MAJEURE:** Mason shall be excused from any and all liability for failure or delay in performance of any obligation under this Contract resulting from any cause not within the reasonable control of Mason, which includes but is not limited to acts of God, fire, flood, explosion, earthquake, or other natural forces, war, civil unrest, accident, any strike or labor disturbance, travel restrictions, acts of government, disease, pandemic, or contagion, whether such

cause is similar or dissimilar to any of the foregoing. Upon written notification from Mason that such cause has occurred, Contractor agrees to directly refund all payments to Mason, for services not yet performed, including any pre-paid deposits within 14 days.

- W. FUTURE GOODS AND SERVICES: Mason reserves the right to have Contractor provide additional goods and/or services that may be required by Mason during the term of this Contract. Any such goods and/or services will be provided by the Contractor under the same pricing, terms and conditions of this Contract. Such additional goods and/or services may include other products, components, accessories, subsystems or related services that are newly introduced during the term of the contract. Such newly introduced additional goods and/or services will be provided to Mason at Favored Customer pricing, terms and conditions.
- X. IMMIGRATION REFORM AND CONTROL ACT OF 1986: By entering into this Contract Contractor certifies that they do not and will not during the performance of this Contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.
- Y. INDEMNIFICATION: Contractor agrees to indemnify, defend and hold harmless George Mason University, the Commonwealth of Virginia, its officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the Contractor/any services of any kind or nature furnished by the Contractor, provided that such liability is not attributable to the sole negligence of Mason or to the failure of Mason to use the materials, goods, or equipment in the manner already and permanently described by the Contractor on the materials, goods or equipment delivered.
- Z. INDEPENDENT CONTRACTOR: The Contractor is not an employee of Mason, but is engaged as an independent contractor. The Contractor shall indemnify and hold harmless the Commonwealth of Virginia, Mason, and its employees and agents, with respect to all withholding, Social Security, unemployment compensation and all other taxes or amounts of any kind relating to the Contractor's performance of this Contract. Nothing in this Contract shall be construed as authority for the Contractor to make commitments which will bind Mason or to otherwise act on behalf of Mason, except as Mason may expressly authorize in writing.
- AA. INFORMATION TECHNOLOGY ACCESS ACT: Computer and network security is of paramount concern at Mason. Mason wants to ensure that computer/network hardware and software does not compromise the security of its IT environment. Contractor agrees to use commercially reasonable measures in connection with any offering your company makes to avoid any known threat to the security of the IT environment at Mason.

All e-learning and information technology developed, purchased, upgraded or renewed by or for the use of Mason shall comply with all applicable University policies, Federal and State laws and regulations including but not limited to Section 508 of the Rehabilitation Act (29 U.S.C. 794d), the Information Technology Access Act, §§2.2-3500 through 2.2-3504 of the Code of Virginia, as amended, and all other regulations promulgated under Title II of The Americans with Disabilities Act which are applicable to all benefits, services, programs, and activities provided by or on behalf of the University. The Contractor shall also comply with the Web Content Accessibility Guidelines (WCAG) 2.0. For more information please visit <http://ati.gmu.edu>, under Policies and Procedures.

- BB. INSURANCE: The Contractor shall maintain all insurance necessary with respect to the services provided to Mason. The Contractor further certifies that they will maintain the insurance coverage during the entire term of the Contract and that all insurance is to be placed with insurers with a current reasonable A.M. Best's rating authorized to sell insurance in the Commonwealth of Virginia by the Virginia State Corporation Commission. The Commonwealth of Virginia and Mason shall be named as an additional insured. By requiring such minimum insurance, Mason shall not be deemed or construed to have assessed the risk that may be applicable to the Contractor. The Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain higher limits and/or broader coverage. The Contractor is not relieved of any liability or other obligations assumed or pursuant to this Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types.
 - 1. Commercial General Liability Insurance in an amount not less than \$1,000,000 per occurrence for bodily injury or property damage, personal injury and advertising injury, products and completed operations coverage;
 - 2. Workers Compensation Insurance in an amount not less than that prescribed by statutory limits; and, as applicable;
 - 3. Commercial Automobile Liability Insurance applicable to bodily injury and property damage, covering

owned, non-owned, leased, and hired vehicles in an amount not less than \$1,000,000 per occurrence; and

4. An umbrella/excess policy in an amount not less than five million dollars (\$5,000,000) to apply over and above Commercial General Liability, Employer's Liability, and Commercial Automobile Liability Insurance.

CC. INTELLECTUAL PROPERTY: Contractor warrants and represents that it will not violate or infringe any intellectual property right or any other personal or proprietary right and shall indemnify and hold harmless Mason against any claim of infringement of intellectual property rights which may arise under this Contract.

Unless expressly agreed to the contrary in writing, all goods, products, materials, documents, reports, writings, video images, photographs or papers of any nature including software or computer images prepared or provided by Contractor (or its subcontractors) for Mason will not be disclosed to any other person or entity without the written permission of Mason.

Work Made for Hire. Contractor warrants to Mason that Mason will own all rights, title and interest in any and all intellectual property rights created in the performance or otherwise arising from the Contract and will have full ownership and beneficial use thereof, free and clear of claims of any nature by any third party including, without limitation, copyright or patent infringement claims. Contractor agrees to assign and hereby assigns all rights, title, and interest in any and all intellectual property created in the performance or otherwise arising from the Contract, and will execute any future assignments or other documents needed for Mason to document, register, or otherwise perfect such rights. Notwithstanding the foregoing, for research collaboration pursuant to subcontracts under sponsored research Contracts administered by the University's Office of Sponsored Programs, intellectual property rights will be governed by the terms of the grant or contract to Mason to the extent such grant or contract requires intellectual property terms to apply to subcontractors.

DD. NON-DISCRIMINATION: All parties to this Contract agree to not discriminate on the basis of race, color, religion, national origin, sex, pregnancy, childbirth or related medical conditions, age (except where sex or age is a bona fide occupational qualification, marital status or disability).

EE. NON-EXCLUSIVITY: Nothing herein is intended nor shall be construed as creating any exclusive arrangement with Contractor. This Contract will not restrict or prohibit Mason from acquiring the same or similar goods and/or services from other entities or sources.

FF. PAYMENT TO SUBCONTRACTORS: The Contractor shall take the following actions upon receiving payment from Mason: (1) pay the subcontractor within seven days for the proportionate share of the total payment received from Mason attributable to the work performed by the subcontractor under that Contract; or (2) notify Mason and subcontractor within seven days, in writing, of its intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment. b. If an individual contractor, provide social security number in order to receive payment. c. If a proprietorship, partnership or corporation provide Federal employer identification number. d. Pay interest to subcontractors on all amounts owed by the Contractor that remain unpaid after seven days following receipt by the Contractor of payment from the Institution for work performed by the subcontractor under that Contract, except for amounts withheld as allowed by prior notification. e. Accrue interest at no more than the rate of one percent per month. f. Include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

GG. PUBLICITY: The Contractor shall not use, in its external advertising, marketing programs or promotional efforts, any data, pictures, trademarks or other representation of Mason except on the specific written authorization in advance by Mason's designated representative.

HH. REMEDIES: If the Contractor breaches this Contract, in addition to any other rights or remedies, Mason may terminate this Contract without prior notice.

II. RENEWAL OF CONTRACT: This Contract may be renewed by Mason for four (4) successive one-year renewal options under the terms and conditions of this Contract except as stated in 1. and 2. below. Price increases may be negotiated only at the time of renewal. Written notice of the University's intention to renew shall be given approximately 90 days prior to the expiration date of each contract period.

1. If the University elects to exercise the option to renew the Contract for an additional one-year period, the Contract price(s) for the additional one year shall not exceed the lesser of the Contract price(s) of the original Contract increased/decreased by more than the percentage increase/decrease of the "other goods and services" category of the CPI-U section of the Consumer Price Index of the United States Bureau of Labor

Statistics for the latest twelve months for which statistics are available, or 2%, whichever is lower.

2. If during any subsequent renewal periods, the University elects to exercise the option to renew the Contract, the Contract price(s) for the subsequent renewal period shall not exceed the lesser of the Contract price(s) of the previous renewal period increased/decreased by more than the percentage increase/decrease of the "other goods and services" category of the CPI-U section of the Consumer Price Index of the United States bureau of Labor Statistics for the latest twelve months for which statistics are available, or 2%, whichever is lower.

JJ. REPORTING OF CRIMES, ACCIDENTS, FIRES AND OTHER EMERGENCIES: Any Mason Employee, including contracted service providers, who is not a staff member in Counseling and Psychological Services (CAPS) or a pastoral counselor, functioning within the scope of that recognition, is considered a "Campus Security Authority (CSA)." CSAs must promptly report all crimes and other emergencies occurring on or near property owned or controlled by Mason to the Department of Police & Public Safety or local police and fire authorities by dialing 9-1-1. At the request of a victim or survivor, identifying information may be excluded from a report (e.g., names, initials, contact information, etc.). Please visit the following website for more information and training: <http://police.gmu.edu/clery-act-reporting/campus-security-authority-csa/>."

KK. RESPONSE TO LEGAL ORDERS, DEMANDS, OR REQUESTS FOR DATA: Except as otherwise expressly prohibited by law, Contractor will: i) immediately notify Mason of any subpoenas, warrants, or other legal orders, demands or requests received by Contractor seeking University Data; ii) consult with Mason regarding its response; iii) cooperate with Mason's reasonable requests in connection with efforts by Mason to intervene and quash or modify the legal order, demand or request; and iv) upon Mason's request, provide Mason with a copy of its response.

If Mason receives a subpoena, warrant, or other legal order, demand (including request pursuant to the Virginia Freedom of Information Act) or request seeking University Data maintained by Contractor, Mason will promptly provide a copy to Contractor. Contractor will promptly supply Mason with copies of data required for Mason to respond, and will cooperate with Mason's reasonable requests in connection with its response.

LL. SEVERABILITY: Should any portion of this Contract be declared invalid or unenforceable for any reason, such portion is deemed severable from the Contract and the remainder of this Contract shall remain fully valid and enforceable.

MM. SOVEREIGN IMMUNITY: Nothing in this Contract shall be deemed a waiver of the sovereign immunity of the Commonwealth of Virginia and of Mason.

NN. SUBCONTRACTS: No portion of the work shall be subcontracted without prior written consent from Mason. In the event that the Contractor desires to subcontract some part of the work specified herein, the Contractor shall furnish Mason the names, qualifications and experience of their proposed subcontractors. The Contractor shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of this Contract. This paragraph applies to, but is not limited to, subcontractor(s) who process University Data.

OO. SWaM CERTIFICATION: Contractor agrees to fully support the Commonwealth of Virginia and Mason's efforts related to SWaM goals. Upon contract execution, Contractor, if eligible, shall submit all required documents necessary to achieve SWaM certification to the Department of Small Business and Supplier Diversity within 90 days. If Contractor is currently SWaM certified, Contractor agrees to maintain their certification for the duration of this Contract and shall submit all required renewal documentation at least 30 days prior to existing SWaM expiration at <https://www.sbsd.virginia.gov/>.

PP. UNIVERSITY DATA: University Data includes all Mason owned, controlled, or collected PII and any other information that is not intentionally made available by Mason on public websites, including but not limited to business, administrative and financial data, intellectual property, and patient, student and personnel data. Contractor agrees to the following regarding University Data it may collect or process as part of this contract:

1. Contractor will use University Data only for the purpose of fulfilling its duties under the Contract and will not share such data with or disclose it to any third party without the prior written consent of Mason, except as required by the Contract or as otherwise required by law. University Data will only be processed by Contractor to the extent necessary to fulfill its responsibilities under the Contract or as otherwise directed by Mason.
2. University Data, including any back-ups, will not be accessed, stored, or transferred outside the United States

without prior written consent from Mason. Contractor will provide access to University Data only to its employees and subcontractors who need to access the data to fulfill Contractor's obligations under the Contract. Contractor will ensure that employees who perform work under the Contract have read, understood, and received appropriate instruction as to how to comply with the data protection provisions of the Contract and to maintain the confidentiality of the University Data.

3. The parties agree that as between them, all rights including all intellectual property rights in and to University Data shall remain the exclusive property of Mason, and Contractor has a limited, nonexclusive license to use the University Data as provided in the Contract solely for the purpose of performing its obligations under the Contract. The Contract does not give a party any rights, implied or otherwise, to the other party's data, content, or intellectual property, except as expressly stated in the Contract.
4. Contractor will take reasonable measures, including audit trails, to protect University Data against deterioration or degradation of data quality and authenticity. Contractor shall be responsible for ensuring that University Data, per the Virginia Public Records Act, is preserved, maintained, and accessible throughout their lifecycle, including converting and migrating electronic data as often as necessary so that information is not lost due to hardware, software, or media obsolescence or deterioration.
5. Contractor shall notify Mason within three business days if it receives a request from an individual under any applicable law regarding PII about the individual, including but not limited to a request to view, access, delete, correct, or amend the information. Contractor shall not take any action regarding such a request except as directed by Mason.
6. If Contractor will have access to University Data that includes "education records" as defined under the Family Educational Rights and Privacy Act (FERPA), the Contractor acknowledges that for the purposes of the Contract it will be designated as a "school official" with "legitimate educational interests" in the University education records, as those terms have been defined under FERPA and its implementing regulations, and the Contractor agrees to abide by the limitations and requirements imposed on school officials. Contractor will use the education records only for the purpose of fulfilling its duties under the Contract for Mason's and its end user's benefit, and will not share such data with or disclose it to any third party except as provided for in the Contract, required by law, or authorized in writing by the University.
7. Mason may require that Mason and Contractor complete a Data Processing Addendum ("DPA"). If a DPA is completed, Contractor agrees that the information in the DPA is accurate. Contractor will only collect or process University Data that is identified in the DPA and will only handle that data (e.g., type of processing activities, storage, security, disclosure) as described in the DPA. If Contractor intends to do anything regarding University Data that is not reflected in the DPA, Contractor must request an amendment to the DPA and may not take the intended action until the amendment is approved and documented by Mason.

QQ. UNIVERSITY DATA SECURITY: Data security is of paramount concern to Mason. Contractor will utilize, store and process University Data in a secure environment in accordance with commercial best practices, including appropriate administrative, physical, and technical safeguards, to secure such data from unauthorized access, disclosure, alteration, and use. Such measures will be no less protective than those used to secure Contractor's own data of a similar type, and in no event less than reasonable in view of the type and nature of the data involved. At a minimum, Contractor shall use industry-standard and up-to-date security tools and technologies such as anti-virus protections and intrusion detection methods to protect University Data.

1. Immediately upon becoming aware of circumstances that could have resulted in unauthorized access to or disclosure or use of University Data, Contractor will notify Mason, fully investigate the incident, and cooperate fully with Mason's investigation of and response to and remediation of the incident. Except as otherwise required by law, Contractor will not provide notice of the incident directly to individuals who's PII was involved, regulatory agencies, or other entities, without prior written permission from Mason.
2. Mason reserves the right in its sole discretion to perform audits of Contractor, at Mason's expense, to ensure compliance with all obligations regarding University Data. Contractor shall reasonably cooperate in the performance of such audits. Contractor will make available to Mason all information necessary to demonstrate compliance with its data processing obligations. Failure to adequately protect University Data or comply with the terms of this Contract with regard to University Data may be grounds to terminate this Contract.

RR. UNIVERSITY DATA UPON TERMINATION OR EXPIRATION: Upon termination or expiration of the Contract,

Contractor will ensure that all University Data are securely returned or destroyed as directed by Mason in its sole discretion within 180 days of the request being made. Transfer to Mason or a third party designated by Mason shall occur within a reasonable period of time, and without significant interruption in service. Contractor shall ensure that such transfer/migration uses facilities and methods that are compatible with the relevant systems of Mason or its transferee, and to the extent technologically feasible, that Mason will have reasonable access to University Data during the transition. In the event that Mason requests destruction of its data, Contractor agrees to destroy all data in its possession and in the possession of any subcontractors or agents to which the Contractor might have transferred University Data. Contractor agrees to provide documentation of data destruction to the University.

Contractor will notify the University of any impending cessation of its business and any contingency plans. This includes immediate transfer of any previously escrowed assets and University Data and providing Mason access to Contractor’s facilities to remove and destroy Mason-owned assets and University Data. Contractor shall implement its exit plan and take all necessary actions to ensure a smooth transition of service with minimal disruption to Mason. Contractor will also provide a full inventory and configuration of servers, routers, other hardware, and software involved in service delivery along with supporting documentation, indicating which if any of these are owned by or dedicated to Mason. Contractor will work closely with its successor to ensure a successful transition to the new equipment, with minimal downtime and effect on Mason, all such work to be coordinated and performed in advance of the formal, final transition date.

SS. UNIVERSITY REVIEW/APPROVAL: All goods, services, products, design, etc. produced by the Contractor for or on behalf of Mason are subject to Mason’s review and approval.

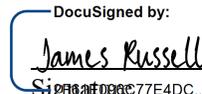
TT. WAIVER: The failure of a party to enforce any provision in this Contract shall not be deemed to be a waiver of such right.

BMS CAT of Maryland LLC



Signature
Name: Jeremy James
Title: Vice President
Date: July 11, 2024

George Mason University

DocuSigned by:


Signature
Name: James Russell
Title: Purchasing Director
Date: 7/3/2024



Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, VA 22030
Phone: 703.993.2580 | Fax: 703.993.2589
<http://fiscal.gmu.edu/purchasing/>

February 28, 2024

To: Christopher Mullins, VCO, CUPO
Sr. Buyer | Purchasing
cmullin4@gmu.edu

SUBJECT: RFP GMU-CM0905-23, Emergency Response Services for Collections Stabilization and Recovery – Negotiation Responses

Dear Mr. Mullins:

Please see the answers/clarifications for Section XIV, B of the subject RFP.

1. Mason is an educational institution and entity of the Commonwealth of Virginia. As such, we are obligated to ensure that all pricing and contractual elements meet our institution's needs. Can you provide a reduced hourly rate for services?
 - **BMS CAT can offer a 5% discount if our invoice is paid within 1-15 days. BMS CAT can offer a 2.5% discount if our invoice is paid within 16-30 days.**
 - **BMS CAT waives the high-cost markup.**
 - **Overtime labor charges apply only if the job exceeds 40 hours.**
 - **To note, the local BMS CAT GM has extensive familiarity with the GMU campuses and facilities, which will aid responsiveness and overall performance efficiencies.**
2. Can the cost-plus percentage amount be reduced for the items/services/consultant fees not identified in your price list? If so, please state the new percentage rate.
 - **BMS CAT will mark up reimbursable third party invoices 10%/10% which is 5% lower than industry standard in the DC region.**
3. Do you have any minimum hourly requirements for jobs? For example, a 4-hour minimum per project.
 - **BMS CAT does not have any minimum hourly requirements.**
4. Can you provide any additional discounts based on total university spend?
 - **BMS CAT can offer early pay discounts (See Item #1 above)**
5. If awarded a contract, do you acknowledge, agree and understand George Mason University cannot guarantee a minimum amount of business?
 - **Yes**
6. Do you agree to sign Mason's Standard Contract (RFP Attachment B – Sample Contract) if awarded a contract?
 - **Yes**

Please advise if you have any questions or need clarifications.

Regards,

Hal W. Hocking
Regional Account Manager - BMS CAT
Cell: 240-460-4813 email: hhocking@bmscat.com



Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, VA 22030
Voice: 703.993.2580 | Fax: 703.993.2589
<http://fiscal.gmu.edu/purchasing/>



**REQUEST FOR PROPOSALS
GMU-CM0905-23**

ISSUE DATE: October 4, 2023
TITLE: Emergency Response Services for Collections Stabilization and Recovery
PRIMARY PROCUREMENT OFFICER: Christopher Mullins, Senior Buyer
SECONDARY PROCUREMENT OFFICER: James F. Russell, Director

QUESTIONS/INQUIRIES: Submit all inquiries through [Mason’s Bonfire Portal](#), no later than 4:00 PM Eastern Time (ET) on October 18, 2023. **All questions must be submitted through Mason’s Bonfire portal.** For assistance with technical questions related to Bonfire, contact Support@GoBonfire.com or visit Bonfire’s help forum at <https://vendorsupport.gobonfire.com/hc/en-us>. Responses to questions will be posted to Mason’s Bonfire portal and by 5:00 PM ET on October 20, 2023.

PROPOSAL DUE DATE AND TIME: November 8, 2023 @ 2:00 PM ET. ATTENTION: PROPOSALS WILL NOT BE ACCEPTED VIA EMAIL, MAIL, THROUGH eVA OR IN PERSON. SEE SECTION XIII.A.1 FOR DETAILS ON ELECTRONIC PROPOSAL SUBMISSION.

In Compliance With This Request For Proposal And To All The Conditions Imposed Therein And Hereby Incorporated By Reference, The Undersigned Offers And Agrees To Furnish The Goods/Services In Accordance With The Attached Signed Proposal Or As Mutually Agreed Upon By Subsequent Negotiations.

Name and Address of Firm:

Legal Name: _____ Date: _____

DBA: _____

Address: _____

By: _____
Signature

FEI/FIN No. _____

Name: _____

Fax No. _____

Title: _____

Email: _____

Telephone No. _____

SWaM Certified: Yes: _____ No: _____ (See Section VII. SWaM CERTIFICATION for complete details).

SWaM Certification Number: _____

This public body does not discriminate against faith-based organizations in accordance with the *Governing Rules*, § 36 or against a Bidder/Offeror because of race, religion, color, sex, national origin, age, disability, or any other prohibited by state law relating to discrimination in employment.

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GMU-CM0905-23

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- I. **PURPOSE:** The purpose of this Request for Proposal (RFP) is to solicit proposals to establish a contract through competitive negotiations with one or more qualified vendors to provide emergency response services for collections stabilization and recovery to George Mason University's Libraries of George Mason University. George Mason University (herein after referred to as "Mason," or "University") is an educational institution and agency of the Commonwealth of Virginia.
- II. **PURCHASING MANUAL/GOVERNING RULES:** This solicitation and any resulting contract shall be subject to the provisions of the Commonwealth of Virginia *Purchasing Manual for Institutions of Higher Education and their Vendor's*, and any revisions thereto, and the *Governing Rules*, which are hereby incorporated into this contract in their entirety. A copy of both documents is available for review at: <https://vascupp.org>
- III. **COMMUNICATION:** Communications regarding the Request For Proposals shall be formal from the date of issuance until a contract has been awarded. Unless otherwise instructed offerors are to communicate with only the Procurement Officers listed on the cover page. Offerors are not to communicate with any other employees of Mason.
- IV. **FINAL CONTRACT:** ATTACHMENT B to this solicitation is Mason's standard two-party contract. It is the intent of this solicitation to base the final contractual documents off of Mason's standard two-party contract and Mason's General Terms and Conditions. Any exceptions to our standard contract and General Terms and Conditions should be denoted in your RFP response. Other documents may be incorporated into the final contract, either by way of attachment or by reference, but in all cases this contract document and Mason's General Terms and Conditions shall jointly take precedence over all other documents and will govern the terms and conditions of the contract.

As a public institution of higher education in Virginia Mason cannot agree to any of the following terms in any documents:

- A. An express or implied waiver of sovereign immunity.
- B. An agreement to indemnify, defend or hold harmless any entity.
- C. An agreement to maintain insurance.
- D. An agreement providing for binding arbitration.
- E. An agreement providing for the payment of attorneys' fees, costs of collection, or liquidated damages.
- F. Waiver of jury trial.
- G. Choice of law or venue other than the Commonwealth of Virginia.

Contracts will only be issued to the FEI/FIN Number and Firm listed on the signed cover page submitted in your RFP response. Joint proposals will not be accepted.

- V. **ADDITIONAL USERS:** It is the intent of this solicitation and resulting contract(s) to allow for cooperative procurement. Accordingly, any public body, public or private health or educational institutions, or affiliated corporations may access any resulting contract if authorized by the contractor.

Participation in this cooperative procurement is strictly voluntary. If authorized by the Contractor(s), the resultant contract(s) will be extended to the entities indicated above to purchase goods and services in accordance with contract terms. As a separate contractual relationship, the participating entity will place its own orders directly with the Contractor(s) and shall fully and independently administer its use of the contract(s) to include contractual disputes, invoicing and payments without direct administration from the University. No modification of this contract or execution of a separate agreement is required to participate; however, the participating entity and the Contractor may modify the terms and conditions of the contract to accommodate specific governing laws, regulations, policies, and business goals required by the participating entity. Any such modification will apply solely between the participating entity and the contractor.

The University may require the Contractor provide semi-annual usage reports for all entities accessing the contract. The University shall not be held liable for any costs or damages incurred by any other participating entity as a result of any authorization by the Contractor to extend the contract. It is understood and agreed that the University is not responsible for the acts or omissions of any entity and will not be considered in default of the contract no matter the circumstances.

Use of the resulting contract(s) does not preclude any participating entity from using other contracts or competitive processes as needed.

- VI. **eVA BUSINESS-TO-GOVERNMENT VENDOR REGISTRATION:** The eVA Internet electronic procurement solution, website portal www.eVA.virginia.gov, streamlines and automates government purchasing activities in the Commonwealth. The eVA portal is the gateway for vendors to conduct business with state agencies and public bodies. All vendors desiring to provide goods and/or services to the Commonwealth shall participate in the eVA Internet eProcurement solution by completing

the free eVA Vendor Registration. All bidders or offerors agree to self-register in eVA and pay the Vendor Transaction Fees prior to being awarded a contract. Registration instructions and transaction fees may be viewed at: <https://eva.virginia.gov/>

VII. SWaM CERTIFICATION: Vendor agrees to fully support the Commonwealth of Virginia and Mason’s efforts related to SWaM goals. Upon contract execution, eligible vendors (as determined by Mason and the Virginia Department of Small Business and Supplier Diversity) shall submit all required documents necessary to achieve SWaM certification to the Department of Small Business and Supplier Diversity within 90 days. Vendors currently SWaM certified agree to maintain their certification for the duration of the contract and shall submit all required renewal documentation at least 30 days prior to existing SWaM expiration. <https://www.sbsd.virginia.gov/>

VIII. SMALL BUSINESS SUBCONTRACTING PLAN: All potential offerors are required to fill out and submit Attachments A with their proposal.

Note: Invoices shall only be submitted to Mason by the entity awarded a contract. Subcontractors cannot submit invoices to Mason under any resulting contract.

IX. PERIOD OF PERFORMANCE: One (1) year from Effective Date of contract with four (4) successive one-year renewal options (or as negotiated).

X. BACKGROUND: George Mason University has an estimated enrollment of 36,000 students. The Mason Libraries consist of many libraries under one administration. The main library, Fenwick, and Gateway Library in the Johnson Center, as well as the University Records Center in the Facilities Warehouse are located on the original campus in Fairfax City. The Arlington Campus Library is located at 3401 N. Fairfax Dr., Arlington and the Mercer Library at 10900 University Blvd., Manassas. The library physical holdings consist of approximately 1,245,000 volumes, including approximately 156,000 bound journal volumes, and 310,000 government documents. In addition, there are 215,000 cartographic materials, 16,000 musical scores, 2,100,000 microforms, 24,000 audio and 32,000 film and video materials. The University collections’ estimated value is in excess of \$100 million dollars and include irreplaceable historic, cultural, and research property. The annual budget for materials is over \$9,800,000, of which over 75% goes toward electronic resources.

There have been incidents of water intrusion in all campus buildings housing library collections (Fenwick, Mercer, Arlington, and University Records Center) in the past that have impacted the libraries’ materials as well as donated materials requiring remediation before entering the building so as not to cross contaminate.

XI. STATEMENT OF NEEDS: The contractor shall furnish all labor, materials, and equipment as necessary to provide “as needed” emergency library disaster recovery services, including, but not limited to:

- on-site assessment of damage resulting from one or more natural or man-made catastrophic events;
- stabilization of building environments to minimize damage to collections resulting from mold growth;
- careful handling and secure removal of damaged library materials, papers, and research materials from disaster sites;
- environmentally controlled, round-trip transportation to appropriate storage venues for subsequent freezing, air drying, vacuum freeze drying, or shipping to firms for single-item conservation treatment, as appropriate;
- cleaning or smoke removal;
- building refurbishment;
- relocation of treated collections within their appropriate facilities;
- other related services as may be required to responsibly recover material owned by George Mason University Libraries.

This contract is primarily intended for use on mostly paper-based library or archival materials including, but not limited to; books and papers, manuscripts, administrative or other records and photographs. May also include microforms, films, videos, CDs or floppy discs, but not intended for recovery of electronic files or equipment, such as PCs or servers.

This contract is not intended for other conservation services, such as paper repairs, de-acidification or rebinding, services such as roof repair, plumbing or electrical work, mold abatement of buildings or services deemed to be hazardous in nature, such as asbestos abatement.

In addition to the stabilization, recovery, and cleaning of collection material, the cleaning of storage furniture (e.g. shelving, map cases, gasketed cabinets, etc.) and furniture (e.g. reading room tables, book carts, etc.) is within the scope of this contract.

In this contract, the University refers to stabilization as those activities that remove damaged materials from the disaster site and stabilize them for subsequent recovery efforts. Stabilization activities may include removal from emergency area, drying of collections in place, transportation to an off-site stabilization facility, or freezing of wet collection material. Recovery is defined as those activities that enable the material to be returned to its former condition or at a minimum be made fully accessible again on sanitized furniture in appropriate housing.

A. SERVICE RESPONSE REQUIREMENTS:

1. As part of the emergency response, describe how the Contractor shall:
 - a. Be reachable 24 hours/7 days a week/365 day a year to respond to a call for services.
 - b. Respond to disaster scene as soon as possible but no later than within 12 hours of being contacted by the Contract Administrator or their designated representative to assess the condition of the collections and work.
 - c. Be responsible for assigning sufficient personnel to the performance of this contract to ensure timely completion of all requirements.
 - d. Have scalable capability and resources (e.g., facilities, man power, management, equipment, supplies, transport, freezers, and logistics) to manage all types of emergencies that may affect the University collections regardless of size.
 - e. Have the experience, qualifications, and expertise to provide professional and standard methods of handling, stabilizing, packing, transporting, treating and rehousing, labeling and tracking (including the use of bar coding) the full range of library and archival materials in disaster situations.
 - f. Have the experience, qualifications, and expertise to provide professional and standard methods for mold remediation and other decontamination of collections and storage furniture.
 - g. Have all staff with the necessary qualifications and skills or shall have a network of vendors in place for additional resources. However, while some parts of the stabilization operations may be sub-contracted (for instance, to provide for increased freezer storage space), the coordination and majority of stabilization operations are expected to be conducted by the Contractor. All subcontractors for treatment or stabilization or housing must be agreed upon by Mason - see also Section XVI – Special Terms and Conditions.
 - h. Have adequate numbers of trained staff with the skills and experience to assess and sanitize (i.e., clean, disinfect, kill mold, and remove rust and other stains) designated storage furniture including shelving, map cases, and gasketed cabinets.
 - i. Use climate controlled, secure facilities. The Contractor is responsible for all aspects of security for Mason's materials in storage.
 - j. When specified by Mason, pack, ship, and store materials in protective totes and pallets (or other containers subsequently specified by Mason) that are clearly marked according to a numbering and tracking scheme approved by Mason.
 - k. Manage the total work effort associated with the required services to meet all objectives. Such management includes but is not limited to planning, scheduling, cost projecting and accounting, establishing and maintaining documentation and records, report preparation, and quality control.
 - l. Implement all necessary work control procedures to ensure timely accomplishment of work, as well as to permit tracking and reporting work in progress.

- m. Establish and maintain an internal comprehensive Quality Control program. The QC program will apply to all services rendered.
- n. Maintain consistent, professional, and responsive communication throughout the project.

2. As part of the stabilizing collection material, describe how the Contractor shall:

- a. Provide professional advice to the Contract Administrator or his/her designated representative on the most practical and efficient options for the stabilization and recovery of the collections and storage systems within 36 hours of being contacted (or within 24 hours after the site visit).
- b. Provide expert consultation on site to assess the condition of the collections and work with Mason's preservation experts to determine the type and amount of stabilization effort required as soon as the affected site is accessible.
- c. Provide all trained labor, experienced supervision, approved material and supplies, and agreed upon equipment needed for cleanup in response to emergency calls at any of the Mason libraries.
- d. Collaborate with Mason staff to create a stabilization plan documenting stabilization priority based on a variety of factors including type and extent of damage, type of material, rarity and/or importance of material, and outlining the methods to be used for retrieving, stabilizing, packing, and transporting designated damaged materials. To the extent possible, identify and inventory all affected materials and keep materials organized.
- e. Be able to provide a stabilization plan on very short notice, striking a balance between the need for urgently removing affected collection material and doing so in a coordinated and well-thought out manner.
- f. Collaborate with Mason preservation and curatorial staff, provide stabilization activities that result in proper packing and transportation of all materials being moved to temporary Contractor facilitated off-site storage location for stabilization or treatment.
- g. Remove and stabilize materials in a timely manner to eliminate the risk of further damage to the collections. To the extent possible, the stabilization of materials should begin within 24 hours of the emergency and should be completed per the schedule outlined in the stabilization plan.
- h. Provide all labor, material, and equipment for the safe and secure stabilization and transportation including dry cargo transport trucks or freezer trucks as needed and packing supplies, pallets, and materials needed to secure palletized containers.
- i. Stabilize the affected collections items for transportation including providing all boxing, bagging, and other supports and containers necessary.
- j. Establish an inventory of all affected items removed from the affected space as they are removed from a collection area for stabilization and treatment.
- k. Provide consistent tracking of all collection material as they are repacked, transported, stabilized, treated and returned to Mason, ensuring the ability to locate an item at any point in time of stabilization and recovery activities.
- l. Provide environmentally controlled transportation to appropriate storage venues for the stabilization and/or subsequent recovery of the affected collections items.
- m. Provide secure freezer storage for the damaged materials in the event all available appropriate drying equipment is in use, or if the amount of material exceeds the Contractor's drying capacity.

3. As part of the recovering collection material, describe how the Contractor shall:

- a. Collaborate with the Contract Administrator or his/her designated representative to create a recovery plan before the recovery operations begin. This document should contain a description of the estimated quantity, value category, and type of affected collections items, the comprehensive condition assessment of damaged collections, proposal for the safe and secure recovery of the collections, treatment proposals and documentation, rehousing and labeling plans, proposed recovery schedule, tracking system, proposed return schedule, and a detailed associated cost estimate. The plan must also include details of proposed procedures, equipment/tools, goods/materials to be used and the name(s) of the supervisor and staff that will complete the work along with the estimated cost for labor hours, equipment/tools, and goods/materials. If fewer than 1,000 volumes are affected, the final recovery plan should be submitted within 14 days; if more than 1,000 volumes, within 30 days.
- b. Be able to systematically document all stages of the stabilization and recovery activities with a particular focus on treatment activities using both paper-based and/or, upon request, film based and dynamic media.
- c. Be equipped to provide specialized cleaning services as required to manage mold remediation, smoke and soot removal, and deodorization.
- d. Be equipped to dry, in a controlled and closely monitored manner, varying quantities of material exposed to varying amounts of moisture through the use of drying methods such as desiccant, air-drying or vacuum freeze-drying, to determine when materials have reached normal equilibrium, and to ensure that all items are completely dry without exposure to the risk of over-drying.
- e. Allow Mason to request recovery services separately from emergency response and stabilization services if Mason staff is able to perform the response and stabilization internally.
- f. Transfer wet, frozen or dry collection materials to a new, dry box if this is approved by Mason. If there is significant damage to the original container, the Contractor must provide Mason with a proposed procedure to transfer materials to new containers maintaining original order. The Contractor may be required to provide folders, boxes and containers approved by Mason or Mason may choose to provide containers. The Contractor must retain all original documentation and accompanying materials and any label or information written directly on the container.
- g. If distorted, books may be gently re-shaped while wrapping and packing. If packing in boxes, pack volumes spine down or flat into boxes. Avoid packing very small volumes next to large volumes. If deemed necessary, volumes that have been shrink-wrapped may have shrink-wrap plastic removed to expedite drying. Volumes to be transported that are too large for boxing in standard 1.2 cubic foot containers may be stacked flat on pallets, supported by thick cardboard sheets inserted between layers.
- h. Provide documentation including a signed manifest documenting all materials leaving any Mason facility. The Contractor must provide prompt notification upon receipt of shipment and inventory tracking while in the Contractor's facility.
- i. Physically secure collection materials to the truck interior to ensure that the containers and pallets do not shift during transit. All collection materials must be kept within original boxes or enclosures, unless the Preservation librarian or designee approves transfer to new boxes or enclosures. Materials must be retained in the same order as received and must not be commingled with any other materials at any time.
- j. Be equipped to recover a range of materials including but not limited to:
 - Bound volumes (including rare volumes on parchment, pith, vellum)
 - Books and other publications incorporating plastics and modern materials
 - Digital recordings (including CDs, DVDs, Optical Discs)

- Flat photographic prints, negatives, and direct positives on paper, film, glass, and/or other supports (including metal, leather, ceramics, etc.)
 - Microfilm rolls and fiche
 - Motion picture film
 - Magnetic media (including audio, data and sound recordings)
 - Oversized records (including architectural drawings and plans, cartographic records including maps, and posters)
 - Papers (including manuscripts, musical notations, unbound pages, etc.)
 - Video recordings (including DVDs, digital recordings, and magnetic media)
 - Artifacts (including ceramics, musical instruments, paintings, sculpture, and textile memorabilia, etc)
 - Audio recordings (including CDs, phonograph discs, digital sound, magnetic media, and wax cylinders)
- k. Mason collection material may be frozen in transit or at the Contractor's facility. When materials are to be frozen, the Contractor must provide assurance to the Mason representative that the materials in the interior of the pallet have been frozen within the specified timeframe. Documentation of temperature in the interior is sufficient. The temperature of the freezing facility must be monitored and documented. Cycling of the temperature within the freezing facility is unacceptable.
- l. Use freeze-drying equipment using a 24-hour computer-monitored vacuum freeze-drying process to return the moisture content of water-damaged materials/holdings to single digits (5-8% preferred). During vacuum freeze-drying, materials will be frozen to a temperature of at least -25°F. The Contractor must provide data to Mason documenting the conditions to which materials have been exposed, and the duration of these conditions.
- m. Outline methods and materials and/or storage systems for sanitization if biological growth and/or residues exist that are potentially harmful to users of collection materials or collection storage systems.
- n. Describe methods for dealing with the following types of materials:
- Oversize materials such as maps and cartographic materials
 - Flat photographic materials (printed on paper, film and/or other supports e.g. metal, glass, etc.)
 - Microfilm rolls
 - Motion picture film
 - Tangible digital media (videotape, audio tape, etc.) and digital recordings (CD, DVD, Optical Disc, etc.)
- o. Describe methods for consulting with Mason's Director of Special Collections Research Center (SCRC) or her designee if possible before recovering the SCRC materials (unique, rare or otherwise valuable collection material). The SCRC Director or designee shall authorize by written approval the Contractor's procedures for freezing or air-drying of these materials. The SCRC materials must remain at the same level of wetness as found until appropriate procedures have been determined and authorized.
4. As part of return of collection material, describe how the Contractor shall:
- a. Be able to, when treatment is completed, carefully pack dried materials separated by format and library location, in appropriate secure, non-damaging containers and ship/deliver them back to Mason. SCRC materials must be packed separately.
- b. Use bar coding to manage the inventory, tracking, shipping, and shelving process to facilitate tracking and reporting.

- c. Submit a close-out report, summarizing all actions taken by the Contractor as part of a Task Order. This report may summarize the emergency event and all associated activities, based on documentation produced through the previous documents, or may summarize recovery activities conducted under a separate Task Order.

- 5. Cost Estimate: If the Contract Administrator determines that the estimated cost is not fair and reasonable, Mason has the right to ask the Contractor to re-evaluate the estimate. An eVA Purchase Order will be issued to the Contractor as the authority to proceed with the work, which will incorporate the Contractor's estimate and the terms and conditions of the contract.

XII. COST OF SERVICES: Include hourly rates for all labor categories required to perform services (travel and expenses must be included in the hourly rates); price list for goods/materials normally required to perform services; and Contractor-owned equipment/tool costs required to perform the services. Note: All rental equipment and other goods/materials required to perform services shall be invoiced at cost.

XIII. PROPOSAL PREPARATION AND SUBMISSION REQUIREMENTS:

A. GENERAL REQUIREMENTS:

- 1. RFP Response: In order to be considered, Offerors must submit a complete response to Mason's Purchasing Office prior to the due date and time stated in this RFP. Offerors are required to submit one (1) signed copy of the entire proposal including all attachments and proprietary information. If the proposal contains proprietary information, then submit two (2) proposals must be submitted; one (1) with proprietary information included and one (1) with proprietary information removed (see also Item 2d below for further details). The Offeror shall make no other distribution of the proposals.

At the conclusion of the RFP process proposals with proprietary information removed (redacted versions) shall be provided to requestors in accordance with Virginia's Freedom of Information Act. Offerors will not be notified of the release of this information.

ELECTRONIC PROPOSAL SUBMISSION: ATTENTION: PROPOSALS WILL NOT BE ACCEPTED VIA EMAIL, MAIL, THROUGH eVA, OR IN PERSON. Mason will only be accepting electronic proposal submissions via Bonfire for this Request For Proposals.

The following shall apply:

- a. You must register with Bonfire and submit your proposal, and it must be received prior to the submission deadline, by submitting through the online Bonfire portal at <https://gmu.bonfirehub.com>.
- b. The Offeror must ensure the proposals are uploaded and submitted through Bonfire sufficiently in advance of the proposal deadline. **Plan Ahead: It is the Offeror's responsibility to ensure that electronic proposal submissions have sufficient time to make its way through Bonfire's submission portal. Mason recommends you submit your proposal the day prior to the due date.**
- c. Submissions by other methods will not be accepted. Minimum system requirements: Microsoft Edge, Google Chrome, Safari, or Mozilla Firefox. JavaScript and browser cookies must be enabled.
- d. Respondents should contact Bonfire at support@gobonfire.com for technical questions related to submission or visit Bonfire's help forum at <https://vendorsupport.gobonfire.com/hc/en-us>
- e. Submission materials should be prepared in the file formats listed under Requested Information for this opportunity in the Bonfire Portal. The maximum upload file size is 1000 MB. Documents should not be embedded within uploaded files, as the embedded files will not be accessible or evaluated.
- f. All solicitation schedules are subject to change.

- g. Go to Bonfire and Mason's Purchasing website for all updates and schedule changes. <https://fiscal.gmu.edu/purchasing/do-business-with-mason/view-current-solicitation-opportunities/>

2. Proposal Presentation:

- a. Proposals shall be signed by an authorized representative of the Offeror. All information requested must be submitted. Failure to submit all information requested may result in your proposal being scored low.
- b. Proposals should be prepared simply and economically, providing a straightforward, concise description of capabilities to satisfy the requirement of the RFP. Emphasis should be on completeness and clarity of content.
- c. Proposals should be organized in the order in which the requirements are presented in the RFP. All pages of the proposal should be numbered. Each paragraph in the proposal should reference the paragraph number corresponding section of the RFP. It is also helpful to cite the paragraph number, sub letter and repeat the text of the requirement as it appears in the RFP. The proposal should contain a table of contents which cross references the RFP requirements. Information which the Offeror desires to present that does not fall within any of the requirement of the RFP should be inserted at the appropriate place or be attached at the end of the proposal and designated as additional material.

A WORD version of this RFP will be provided upon request.

- d. Except as provided, once an award is announced, all proposals submitted in response to this RFP will be open to inspection by any citizen, or interested person, firm or corporation, in accordance with the Virginia Freedom of Information Act. Trade secrets or proprietary information submitted by a firm prior to or as part of its proposal will not be subject to public disclosure under the Virginia Freedom of Information Act only under the following circumstances: (1) the appropriate information is clearly identified by some distinct method such as highlighting or underlining; (2) only the specific words, figures, or paragraphs that constitute trade secrets or proprietary information are identified; and (3) a summary page is supplied immediately following the proposal title page that includes (a) the information to be protected, (b) the section(s)/page number(s) where this information is found in the proposal, and (c) a statement why protection is necessary for each section listed. The firm must also provide a separate attachment of the proposal with the trade secrets and/or proprietary information redacted. *If all of these requirements are not met, then the firm's entire proposal will be available for public inspection.*

IMPORTANT: A firm may not request that its entire proposal be treated as a trade secret or proprietary information, nor may a firm request that its pricing/fees be treated as a trade secret or proprietary information, or otherwise be deemed confidential. If after given a reasonable time, the Offeror refuses to withdraw the aforementioned designation, the proposal will be rejected.

- 3. Oral Presentation: Offerors who submit a proposal in response to this RFP **may be** required to give an oral presentation/demonstration of their proposal/product to Mason. This will provide an opportunity for the Offeror to clarify or elaborate on their proposal. Performance during oral presentations may affect the final award decision. If required, oral presentations will be scheduled at the appropriate time.

Mason will expect that the person or persons who will be working on the project to make the presentation so experience of the Offeror's staff can be evaluated prior to making selection. Oral presentations are an option of Mason and may or may not be conducted; therefore, it is imperative all proposals should be complete.

- B. SPECIFIC REQUIREMENTS: Proposals should be as thorough and detailed as possible to allow Mason to properly evaluate the Offeror's capabilities and approach toward providing the required services. Offerors should submit the following items as a complete proposal.

1. Procedural information:

- a. Return signed cover page and all addenda, if any, signed and completed as required.

- b. Return Attachment A - Small Business Subcontracting Plan.
 - c. State your payment preference as required in Bonfire. (See section XVI.)
2. Executive Summary: Offerors must submit an executive summary at the beginning of the proposal response not to exceed 2 pages.
 3. Qualifications and Experience: Describe your experience, qualifications and success in providing the services described in the Statement of Needs to include the following:
 - a. Background and brief history of your company.
 - b. Names, qualifications and experience of personnel to be assigned to work with Mason.
 - c. No fewer than three (3) references that demonstrate the Offeror’s qualifications, preferably from other comparable higher education institutions your company is/has provided services with and that are similar in size and scope to that which has been described herein. Include a contact name, contact title, phone number, and email for each reference and indicate the length of service.
 4. Specific Plan (Methodology): Explain your specific plans for providing the proposed services outlined in the Statement of Needs including:
 - a. Your approach to providing the services described herein.
 - b. What, when and how services will be performed.
 5. Proposed Pricing: Provide costs/pricing as outlined/required in Section XII COST OF SERVICES..
 6. In your proposal response please address the following:
 - a. Are you and/or your subcontractor currently involved in litigation with any party?
 - b. Please list any investigation or action from any state, local, federal or other regulatory body (OSHA, IRS, DOL, etc.) related to your firm or any subcontractor in the last three years.
 - c. Please list all lawsuits that involved your firm or any subcontractor in the last three years.
 - d. In the past ten (10) years has your firm’s name changed? If so please provide a reason for the change.

XIV. INITIAL EVALUATION CRITERIA AND SUBSEQUENT AWARD:

A. INITIAL EVALUATION CRITERIA: Proposals shall be initially evaluated and ranked using the following criteria:

<u>Description of Criteria</u>	<u>Maximum Point Value</u>
1. Quality of products/services offered and suitability for the intended purpose	25
2. Qualifications and experiences of offeror in providing the goods/services, including references	20
3. Specific plans or methodology to be used to provide the services	25
4. Price Offered	20
5. Offeror is certified as a small, minority, or women-owned business (SWaM) with Virginia SBSB at the proposal due date & time.	10
Total Points Available:	100

B. AWARD: **Following the initial scoring by the evaluation committee**, at least two or more top ranked offerors may be contacted for oral presentations/demonstrations or advanced directly to the negotiations stage. ***If oral presentations are conducted Mason will then determine, in its sole discretion, which offerors will advance to the negotiations phase.*** Negotiations shall then be conducted with each of the offerors so selected. Price shall be considered, but need

not be the sole determining factor. After negotiations have been conducted with each offeror so selected, Mason shall select the offeror which, in its sole discretion has made the best proposal, and shall award the contract to that offeror. When the terms and conditions of multiple awards are so provided in the Request for Proposal, awards may be made to more than one offeror. Should Mason determine in writing and in its sole discretion that only one offeror has made the best proposal, a contract may be negotiated and awarded to that offeror. Mason is not required to furnish a statement of the reasons why a particular proposal was not deemed to be the most advantageous (*Governing Rules §49.D.*).

XV. CONTRACT ADMINISTRATION: Upon award of the contract, Mason shall designate, in writing, the name of the Contract Administrator who shall work with the contractor in formulating mutually acceptable plans and standards for the operations of this service. The Contract Administrator shall use all powers under the contract to enforce its faithful performance. The Contract Administrator shall determine the amount, quality and acceptability of work and shall decide all other questions in connection with the work. All direction and order from Mason shall be transmitted through the Contract Administrator, or their designee(s) however, the Contract Administrator shall have no authority to approve changes which shall alter the concept or scope of the work or change the basis for compensation to the contractor.

XVI. PAYMENT TERMS / METHOD OF PAYMENT:

PLEASE NOTE: THE VENDOR MUST REFERENCE THE PURCHASE ORDER NUMBER ON ALL INVOICES SUBMITTED FOR PAYMENT.

Option #1- Payment to be mailed in 10 days-Mason will make payment to the vendor under 2%/10 Net 30 payment terms. Invoices should be submitted via email to the designated Accounts Payable email address which is acctpay@gmu.edu.

The 10-day payment period begins the first business day after receipt of proper invoice or receipt of goods, whichever occurs last. A paper check will be mailed on or before the 10th day.

Option #2- To be paid in 20 days. The vendor may opt to be paid through our Virtual Payables credit card program. The vendor shall submit an invoice and will be paid via credit card on the 20th day from receipt of a valid invoice. The vendor will incur standard credit card interchange fees through their processor. All invoices should be sent to:

George Mason University
Accounts Payable Department
4400 University Drive, Mailstop 3C1
Fairfax, VA 22030
Voice: 703.993.2580 | Fax: 703.993.2589
e-mail: AcctPay@gmu.edu

Option#3- Net 30 Payment Terms. Vendor will enroll in Paymode-X where all payments will be made electronically to the vendor's bank account. For additional information or to sign up for electronic payments, go to <http://www.paymode.com/gmu>. There is no charge to the vendor for enrolling in this service.

Please state your payment preference in your proposal response.

XVII. SOLICITATION TERMS AND CONDITIONS:

- A. ANNOUNCEMENT OF AWARD: Upon the award or the announcement of the decision to award a contract over \$200,000, as a result of this solicitation, Mason will publicly post such notice on the DGS/DPS eVA web site (<https://eva.virginia.gov/>) for a minimum of 10 days.
- B. BEST AND FINAL OFFER (BAFO): At the conclusion of negotiations, the offeror(s) may be asked to submit in writing, a best and final offer (BAFO). After the BAFO is submitted, no further negotiations shall be conducted with the offeror(s).
- C. CONFLICT OF INTEREST: By submitting a proposal the contractor warrants that they have fully complied with the Virginia Conflict of Interest Act; furthermore certifying that they are not currently an employee of the Commonwealth of Virginia.
- D. DEBARMENT STATUS: By submitting a proposal, offerors certify that they are not currently debarred by the

Commonwealth of Virginia from submitting bids or proposals on contracts for the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

- E. **ETHICS IN PUBLIC CONTRACTING:** By submitting a proposal, offerors certify that their proposal is made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other offeror, supplier, manufacturer or subcontractor in connection with their proposal, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.
- F. **LATE PROPOSALS:** To be considered for selection, proposals must be received in Mason's Bonfire Portal by the designated date and hour. The official time used in the receipt of proposals is the proposal due date and hour in Mason's Bonfire Portal. Proposals submitted after the due date and time has expired will not be accepted nor considered. Mason is not responsible for any delays related to Bonfire's website or vendor registration process. It is the responsibility of the offeror to ensure that their proposal is submitted by the designated date and hour.
- G. **MANDATORY USE OF MASON FORM AND TERMS AND CONDITIONS:** Failure to submit a proposal on the official Mason form provided for that purpose may be a cause for rejection of the proposal. Modification of or additions to the General Terms and Conditions of this solicitation may be cause for rejection of the proposal; however, Mason reserves the right to decide, on a case-by-case basis, in its sole discretion, whether to reject such a proposal.
- H. **OBLIGATION OF OFFEROR:** It is the responsibility of each offeror to inquire about and clarify any requirements of this solicitation that are not understood. Mason will not be bound by oral explanations as to the meaning of specifications or language contained in this solicitation. Therefore, all inquiries must be in writing and submitted as instructed on page 1 of this solicitation. By submitting a proposal, the offeror covenants and agrees that they have satisfied themselves, from their own investigation of the conditions to be met, that they fully understand their obligation and that they will not make any claim for, or have right to cancellation or relief from the resulting contract because of any misunderstanding or lack of information.
- I. **QUALIFICATIONS OF OFFERORS:** Mason may make such reasonable investigations as deemed proper and necessary to determine the ability of the offeror to perform the services/furnish the goods and the offeror shall furnish to Mason all such information and data for this purpose as may be requested. Mason reserves the right to inspect the offeror's physical facilities prior to award to satisfy questions regarding the offeror's capabilities. Mason further reserves the right to reject any proposal if the evidence submitted by, or investigations of, such offeror fails to satisfy Mason that such offeror is properly qualified to carry out the obligations of the resulting contract and to provide the services and/or furnish the goods contemplated therein.
- J. **RFP DEBRIEFING:** In accordance with §49 of the *Governing Rules* Mason is not required to furnish a statement of the reasons why a particular proposal was not deemed to be the most advantageous. However, upon request we will provide a scoring/ranking summary and the award justification memo from the evaluation committee. Formal debriefings are generally not offered.
- K. **TESTING AND INSPECTION:** Mason reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

XVIII. RFP SCHEDULE (Subject to Change):

- Issue in eVA: 10/4/23
- Vendors submit questions by: 10/18/23 by 4:00 PM ET
- Post Question Responses: 10/20/23 by 5:00 PM ET
- Proposals Due: 11/8/23 @ 2:00 PM ET
- Proposals to Committee: 11/9/23
- Review and Score Proposals: 11/9/23 – 11/21/23
- Scores to Purchasing: 11/21/23
- Oral presentations (if necessary): 11/27/23-12/1/23
- Negotiations/BAFO: Start week of 12/4/23
- Award: 12/11/23
- Contract Start Date: TBD

ATTACHMENT A
SMALL BUSINESS SUBCONTRACTING PLAN
TO BE COMPLETED BY OFFEROR

Offerors must advise any portion of this contract that will be subcontracted. All potential offerors are required to include this document with their proposal in order to be considered responsive.

Small Business: "Small business (including micro)" means a business which holds a certification as such by the Virginia Department of Small Business and Supplier Diversity (DSBSD) on the due date and time for proposals. This shall also include DSBSD certified women- owned and minority-owned businesses and businesses with DSBSD service disabled veteran owned status when they also hold a DSBSD certification as a small business on the proposal due date. Currently, DSBSD offers small business certification and micro business designation to firms that qualify.

Certification applications are available through DSBSD online at www.SBSD.virginia.gov (Customer Service).

Offeror Name: _____

Preparer Name: _____ **Date:** _____

Who will be doing the work: I plan to use subcontractors I plan to complete all work

Instructions

- A. If you are certified by the DSBSD as a micro/small business, complete Section A of this form.
- B. If the "I plan to use subcontractors" box is checked, complete Section B of this form. For the proposal to be considered and the offeror to be declared responsive, the offeror shall identify the portions of the contract that will be subcontracted to any subcontractor, to include DSBSD certified small business for the initial contract period in relation to the offeror's total price for the initial contract period in Section B.

Section A

If your firm is certified by the DSBSD provide your certification number and the date of certification.

Certification Number: _____ Certification Date: _____

Section B

If the "I plan to use subcontractors" box is checked, populate the requested information below, per subcontractor to show your firm's plans for utilization of any subcontractor, to include DSBSD-certified small businesses, in the performance of this contract for the initial contract period in relation to the offeror's total price for the initial contract period. Certified small businesses include but are not limited to DSBSD-certified women-owned and minority-owned businesses and businesses with DSBSD service disabled veteran-owned status that have also received the DSBSD small business certification. Include plans to utilize small businesses as part of joint ventures, partnerships, subcontractors, suppliers, etc. It is important to note that these proposed participation will be incorporated into the subsequent contract and will be a requirement of the contract. Failure to obtain the proposed participation dollar value or percentages may result in breach of the contract.

Plans for Utilization of Any subcontractor, to include DSBSD-Certified Small Businesses, for this Procurement

Subcontract #1

Company Name: _____ SBSBD Cert #: _____
 Contact Name: _____ SBSBD Certification: _____
 Contact Phone: _____ Contact Email: _____
 Value % or \$ (Initial Term): _____ Contact Address: _____
 Description of Work: _____

Subcontract #2

Company Name: _____ SBSBD Cert #: _____
 Contact Name: _____ SBSBD Certification: _____
 Contact Phone: _____ Contact Email: _____
 Value % or \$ (Initial Term): _____ Contact Address: _____
 Description of Work: _____

Subcontract #3

Company Name: _____ SBSB Cert #: _____
Contact Name: _____ SBSB Certification: _____
Contact Phone: _____ Contact Email: _____
Value % or \$ (Initial Term): _____ Contact Address: _____
Description of Work: _____

Subcontract #4

Company Name: _____ SBSB Cert #: _____
Contact Name: _____ SBSB Certification: _____
Contact Phone: _____ Contact Email: _____
Value % or \$ (Initial Term): _____ Contact Address: _____
Description of Work: _____

Subcontract #5

Company Name: _____ SBSB Cert #: _____
Contact Name: _____ SBSB Certification: _____
Contact Phone: _____ Contact Email: _____
Value % or \$ (Initial Term): _____ Contact Address: _____
Description of Work: _____



Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, VA 22030
Voice: 703.993.2580 | Fax: 703.993.2589
<http://fiscal.gmu.edu/purchasing/>

**ATTACHMENT B – SAMPLE CONTRACT
GMU-xxxx-2x**

Note: Other documents may be incorporated into this document, either by way of attachment or by reference, but in all cases this contract document shall take precedence over all other documents and will govern the terms and conditions of the contract.

This Contract entered on this ____ day of _____, 2023 (Effective Date) by _____ hereinafter called “Contractor” (located at _____) and George Mason University hereinafter called “Mason,” “University”.

- I. **WITNESSETH** that the Contractor and Mason, in consideration of the mutual covenants, promises and agreement herein contained, agree as follows:
- II. **SCOPE OF CONTRACT:** The Contractor shall provide _____ for the _____ of George Mason University as set forth in the Contract documents.
- III. **PERIOD OF CONTRACT:** One year from the Effective Date with four (4) successive one-year renewal options. (or as negotiated)
- IV. **PRICE SCHEDULE:** As negotiated. The pricing specified in this section represents the complete list of charges from the Contractor. Mason shall not be liable for any additional charges.
- V. **CONTRACT ADMINISTRATION:** _____ shall serve as Contract Administrator for this Contract and shall use all powers under the Contract to enforce its faithful performance. The Contract Administrator shall determine the amount, quality and acceptability of work and shall decide all other questions in connection with the work. All direction and order from Mason shall be transmitted through the Contract Administrator, however, the Contract Administrator shall have no authority to approve changes which shall alter the concept or scope or change the basis for compensation.
- VI. **METHOD OF PAYMENT:** As negotiated
- VII. **THE CONTRACT DOCUMENTS SHALL CONSIST OF (In order of precedence):**
 - A. This signed form;
 - B. Negotiation Responses dated XXXXX (attached herein);
 - C. RFP No. GMU-XXXX-XX, in its entirety (attached herein);
 - D. Contractor’s proposal dated XXXXXX (attached herein).
- VIII. **GOVERNING RULES:** This Contract is governed by the provisions of the Restructured Higher Education Financial and Administrative Operations Act, Chapter 10 (§ [23.1-1000](#) et seq.) of Title 23.1 of the Code of Virginia, and the “*Governing Rules*” and the *Purchasing Manual for Institutions of Higher Education and their Vendors*. Documents may be viewed at: <https://vascupp.org>.
- IX. **CONTRACT PARTICIPATION:** *As negotiated.* It is the intent of this Contract to allow for cooperative procurement. Accordingly, any public body, public or private health or educational institutions, or affiliated corporations may access this Contract if authorized by the Contractor.

Participation in this Contract is strictly voluntary. If authorized by the Contractor, the contract will be extended to the entities indicated above to purchase goods and services in accordance with contract terms. As a separate contractual relationship, the participating entity will place its own orders directly with the Contractor and shall fully and independently administer its use of the contract to include contractual disputes, invoicing and payments without direct administration from the University. No modification of this Contract or execution of a separate agreement is required to participate; however, the participating entity and the Contractor may modify the terms and conditions of the contract to accommodate specific governing laws, regulations,

policies, and business goals required by the participating entity. Any such modification will apply solely between the participating entity and the Contractor.

The University may request the Contractor provide semi-annual usage reports for all entities accessing the Contract. The University shall not be held liable for any costs or damages incurred by any other participating entity as a result of any authorization by the Contractor to extend the Contract. It is understood and agreed that the University is not responsible for the acts or omissions of any entity and will not be considered in default of the contract no matter the circumstances.

Use of this Contract does not preclude any participating entity from using other contracts or competitive processes as needed.

X. STANDARD TERMS AND CONDITIONS:

- A. APPLICABLE LAW AND CHOICE OF FORUM: This Contract shall be construed, governed, and interpreted pursuant to the laws of the Commonwealth of Virginia. All disputes arising under this Contract shall be brought before an appropriate court in the Commonwealth of Virginia.
- B. ANTI-DISCRIMINATION: By entering into this Contract, Contractor certifies to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and §§ 9&10 of the *Governing Rules*. If Contractor is a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the Contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided; however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (*Governing Rules*, § 36).

In every contract over \$10,000 the provisions in 1. and 2. below apply:

1. During the performance of this Contract, the Contractor agrees as follows:
 - a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.
 2. The Contractor will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or Contractor.
- C. ANTITRUST: By entering into this Contract, the Contractor conveys, sells, assigns, and transfers to the Commonwealth of Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the Commonwealth of Virginia under this Contract.
- D. ASSIGNMENT: Neither party will assign or otherwise transfer its rights or obligations under this Contract without both parties' prior written consent. Any attempted assignment, transfer, or delegation without such consent is void.
- E. AUDIT: The Contractor shall retain all books, records, and other documents relative to this Contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. Mason, its authorized agents, and/or state auditors shall have full access to and the right to examine any of said materials during said period.

- F. AVAILABILITY OF FUNDS: It is understood and agreed between the parties herein that Mason shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this Contract.
- G. AUTHORIZED SIGNATURES: The signatory for each Party certifies that he or she is an authorized agent to sign on behalf such Party.
- H. BACKGROUND CHECKS: Contractor's employees (including subcontractors) performing services on any Mason campus must have successfully completed a criminal background check prior to the start of their work assignment/service. As stated in [University Policy Number 2221 – Background Investigations](#), the criminal background investigation will normally include a review of the individual's records to include Social Security Number Search, Credit Report (if related to potential job duties), Criminal Records Search (any misdemeanor convictions and/or felony convictions are reported) in all states in which the employee has lived or worked over the past seven years, and the National Sex Offender Registry. In addition, the Global Watch list (maintained by the Office of Foreign Assets Control of The US Department of Treasury) should be reviewed. Signature on this Contract confirms your compliance with this requirement.
- I. CANCELLATION OF CONTRACT: Mason reserves the right to cancel this Contract, in part or in whole, without penalty, for any reason, upon 60 days written notice to the Contractor. Upon written notice of cancellation from Mason, Mason shall be fully released from any further obligation under the Contract and Contractor agrees to directly refund all payments, for services not already performed, to Mason, including any pre-paid deposits, within 14 days. Any contract cancellation notice shall not relieve the Contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.
- J. CHANGES TO THE CONTRACT: Changes can be made to this Contract in any of the following ways:
1. The parties may agree in writing to modify the scope of this Contract.
 2. Mason may order changes within the general scope of Contract at any time by written notice to Contractor. Changes within the scope of this Contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. Contractor shall comply with the notice upon receipt. Contractor shall be compensated for any additional costs incurred as the result of such order and shall give Mason a credit for any savings. Said compensation shall be determined by one of the following methods:
 - a. By mutual agreement between the parties in writing; or
 - b. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the contractor accounts for the number of units of work performed, subject to the Mason's right to audit Contractor's records and/or to determine the correct number of units independently; or
 - c. By ordering Contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the Contract. The same markup shall be used for determining a decrease in price as the result of savings realized. Contractor shall present Mason with all vouchers and records of expenses incurred and savings realized. Mason shall have the right to audit the records of Contractor as it deems necessary to determine costs or savings. Any claim for an adjustment in price under this provision must be asserted by written notice to Mason within thirty (30) days from the date of receipt of the written order from Mason. If the Parties fail to agree on an amount of adjustment, the question of an increase or decrease in the contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes provided by the Disputes Clause of this Contract or, if there is none, in accordance with the disputes provisions of the Commonwealth of Virginia Purchasing Manual for Institutions of Higher Education and Their Contractors. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this Contract shall excuse the Contractor from promptly complying with the changes ordered by Mason or with the performance of the contract generally.
- K. CLAIMS: Contractual claims, whether for money or other relief, shall be submitted in writing no later than 60 days after final payment. However, written notice of the Contractor's intention to file a claim shall be given at the time of

the occurrence or beginning of the work upon which the claim is based. Nothing herein shall preclude a contract from requiring submission of an invoice for final payment within a certain time after completion and acceptance of the work or acceptance of the goods. Pendency of claims shall not delay payment of amounts agreed due in the final payment.

1. The firm must submit written claim to:
Chief Procurement Officer
George Mason University
4400 University Drive, MSN 3C5
Fairfax, VA 22030
 2. The firm must submit any unresolved claim in writing no later than 60 days after final payment to the Chief Procurement Officer.
 3. Upon receiving the written claim, the Chief Procurement Officer will review the written materials relating to the claim and will mail his or her decision to the firm within 60 days after receipt of the claim.
 4. The firm may appeal the Chief Procurement Officer's decision in accordance with § 55 of the *Governing Rules*.
- L. COLLECTION AND ATTORNEY'S FEES: The Contractor shall pay to Mason any reasonable attorney's fees or collection fees, at the maximum allowable rate permitted under Virginia law, incurred in enforcing this Contract or pursuing and collecting past-due amounts under this Contract.
- M. COMPLIANCE: All goods and services provided to Mason shall be done so in accordance with any and all applicable local, state, federal, and international laws, regulations and/or requirements and any industry standards, including but not limited to: the Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health Act (HITECH), Government Data Collection and Dissemination Practices Act, Gramm-Leach-Bliley Financial Modernization Act (GLB), Payment Card Industry Data Security Standards (PCI-DSS), Americans with Disabilities Act (ADA), and Federal Export Administration Regulations. Any Contractor personnel visiting Mason facilities will comply with all applicable Mason policies regarding access to, use of, and conduct within such facilities. Mason's policies can be found at <https://universitypolicy.gmu.edu/all-policies/> and any facility specific policies can be obtained from the facility manager.
- N. CONFIDENTIALITY OF PERSONALLY IDENTIFIABLE INFORMATION: The Contractor shall ensure that personally identifiable information ("PII") which is defined as any information that by itself or when combined with other information can be connected to a specific person and may include but is not limited to personal identifiers such as name, address, phone, date of birth, Social Security number, student or personal identification numbers, driver's license numbers, state or federal identification numbers, biometric information, religious or political affiliation, non-directory information, and any other information protected by state or federal privacy laws, will be collected and held confidential and in accordance with this Contract, during and following the term of this Contract, and will not be divulged without the individual's and Mason's written consent and only in accordance with federal law or the Code of Virginia.
- O. CONFLICT OF INTEREST: Contractor represents to Mason that its entering into this Contract with Mason and its performance through its agents, officers and employees does not and will not involve, contribute to nor create a conflict of interest prohibited by Virginia State and Local Government Conflict of Interests Act (Va. Code 2.2-3100 *et seq*), the Virginia Ethics in Public Contracting Act (§57 of the *Governing Rules*), the Virginia Governmental Frauds Act (Va. Code 18.2 – 498.1 *et seq*) or any other applicable law or regulation.
- P. CONTINUITY OF SERVICES:
1. The Contractor recognizes that the services under this Contract are vital to Mason and must be continued without interruption and that, upon Contract expiration, a successor, either Mason or another contractor, may continue them. The Contractor agrees:
 - a. To exercise its best efforts and cooperation to affect an orderly and efficient transition to a successor;
 - b. To make all Mason owned facilities, equipment, and data available to any successor at an appropriate time prior to the expiration of the Contract to facilitate transition to successor; and

- c. That the University Procurement Officer shall have final authority to resolve disputes related to the transition of the Contract from the Contractor to its successor.
 2. The Contractor shall, upon written notice from the Procurement Officer, furnish phase-in/phase-out services for up to ninety (90) days after this Contract expires and shall negotiate in good faith a plan with the successor to execute the phase-in/phase-out services. This plan shall be subject to the Procurement Officer's approval.
 3. The Contractor shall be reimbursed for all reasonable, pre-approved phase-in/phase-out costs (i.e., costs incurred within the agreed period after Contract expiration that result from phase-in, phase-out operations). All phase-in/phase-out work fees must be approved by the Procurement Officer in writing prior to commencement of said work.
- Q. **DEBARMENT STATUS:** As of the Effective Date, the Contractor certifies that it is not currently debarred by the Commonwealth of Virginia from submitting bids or proposals on contracts for the type of services covered by this Contract, nor is the Contractor an agent of any person or entity that is currently so debarred.
- R. **DEFAULT:** In the case of failure to deliver goods or services in accordance with this Contract, Mason, after due oral or written notice, may procure them from other sources and hold Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which Mason may have.
- S. **DRUG-FREE WORKPLACE:** Contractor has, and shall have in place during the performance of this Contract, a drug-free workplace policy (DFWP), which it provides in writing to all its employees, vendors, and subcontractors, and which specifically prohibits the following on company premises, during work-related activities, or while conducting company business: the sale, purchase, manufacture, dispensation, distribution possession, or use of any illegal drug under federal law (including marijuana). For purposes of this section, "drug-free workplace" covers all sites at which work is done by Contractor in connection with this Contract.
- T. **ENTIRE CONTRACT:** This Contract constitutes the entire understanding of the Parties with respect to the subject matter herein and supersedes all prior oral or written contracts with respect to the subject matter herein. This Contract can be modified or amended only by a writing signed by all of the Parties.
- U. **EXPORT CONTROL:**
 1. **Munitions Items:** If the Contractor is providing any items, data or services under this order that are controlled by the Department of State, Directorate of Defense Trade Controls, International Traffic in Arms Regulations ("ITAR"), or any items, technology or software controlled under the "600 series" classifications of the Bureau of Industry and Security's Commerce Control List ("CCL") (collectively, "Munitions Items"), prior to delivery, Contractor must:
 - a. notify Mason (by sending an email to export@gmu.edu), and
 - b. receive written authorization for shipment from Mason's Director of Export Controls.

The notification provided by the Contractor must include the name of the Mason point of contact, identify and describe each ITAR or CCL-controlled commodity, provide the associated U.S. Munitions List (USML) category number(s) or Export Control Classification Number, and indicate whether or not the determination was reached as a result of a commodity jurisdiction determination, or self-classification process. The Contractor promises that if it fails to obtain the required written pre-authorization approval for shipment to Mason of any Munitions Item, it will reimburse Mason for any fines, legal costs and other fees imposed for any violation of export controls regarding the Munition Item that are reasonably related to the Contractor's failure to provide notice or obtain Mason's written pre-authorization.
 2. **Dual-Use Items:** If the Contractor is providing any dual-use items, technology or software under this order that are listed on the CCL in a series other than a "600 series", Contractor must (i) include the Export Control Classification Number (ECCN) on the packing or other transmittal documentation traveling with the item(s) and, (ii) send a description of the item, its ECCN, and the name of the Mason point of contact to: export@gmu.edu.
- V. **FORCE MAJEURE:** Mason shall be excused from any and all liability for failure or delay in performance of any

obligation under this Contract resulting from any cause not within the reasonable control of Mason, which includes but is not limited to acts of God, fire, flood, explosion, earthquake, or other natural forces, war, civil unrest, accident, any strike or labor disturbance, travel restrictions, acts of government, disease, pandemic, or contagion, whether such cause is similar or dissimilar to any of the foregoing. Upon written notification from Mason that such cause has occurred, Contractor agrees to directly refund all payments to Mason, for services not yet performed, including any pre-paid deposits within 14 days.

- W. FUTURE GOODS AND SERVICES: Mason reserves the right to have Contractor provide additional goods and/or services that may be required by Mason during the term of this Contract. Any such goods and/or services will be provided by the Contractor under the same pricing, terms and conditions of this Contract. Such additional goods and/or services may include other products, components, accessories, subsystems or related services that are newly introduced during the term of the Contract. Such newly introduced additional goods and/or services will be provided to Mason at Favored Customer pricing, terms and conditions.
- X. IMMIGRATION REFORM AND CONTROL ACT OF 1986: By entering into this Contract Contractor certifies that they do not and will not during the performance of this Contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.
- Y. INDEMNIFICATION: Contractor agrees to indemnify, defend and hold harmless Mason, the Commonwealth of Virginia, its officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the Contractor/any services of any kind or nature furnished by the Contractor, provided that such liability is not attributable to the sole negligence of Mason or to the failure of Mason to use the materials, goods, or equipment in the manner already and permanently described by the Contractor on the materials, goods or equipment delivered.
- Z. INDEPENDENT CONTRACTOR: The Contractor is not an employee of Mason, but is engaged as an independent contractor. The Contractor shall indemnify and hold harmless the Commonwealth of Virginia, Mason, and its employees and agents, with respect to all withholding, Social Security, unemployment compensation and all other taxes or amounts of any kind relating to the Contractor's performance of this Contract. Nothing in this Contract shall be construed as authority for the Contractor to make commitments which will bind Mason or to otherwise act on behalf of Mason, except as Mason may expressly authorize in writing.
- AA. INFORMATION TECHNOLOGY ACCESS ACT: Computer and network security is of paramount concern at Mason. Mason wants to ensure that computer/network hardware and software does not compromise the security of its IT environment. Contractor agrees to use commercially reasonable measures in connection with any offering your company makes to avoid any known threat to the security of the IT environment at Mason.

All e-learning and information technology developed, purchased, upgraded or renewed by or for the use of Mason shall comply with all applicable University policies, Federal and State laws and regulations including but not limited to Section 508 of the Rehabilitation Act (29 U.S.C. 794d), the Information Technology Access Act, §§2.2-3500 through 2.2-3504 of the Code of Virginia, as amended, and all other regulations promulgated under Title II of The Americans with Disabilities Act which are applicable to all benefits, services, programs, and activities provided by or on behalf of the University. The Contractor shall also comply with the Web Content Accessibility Guidelines (WCAG) 2.0. For more information, please visit <http://ati.gmu.edu>, under Policies and Procedures.

- BB. INSURANCE: The Contractor shall maintain all insurance necessary with respect to the services provided to Mason. The Contractor further certifies that they will maintain the insurance coverage during the entire term of the Contract and that all insurance is to be placed with insurers with a current reasonable A.M. Best's rating authorized to sell insurance in the Commonwealth of Virginia by the Virginia State Corporation Commission. The Commonwealth of Virginia and Mason shall be named as an additional insured. By requiring such minimum insurance, Mason shall not be deemed or construed to have assessed the risk that may be applicable to the Contractor. The Contractor shall assess its own risks and, if it deems appropriate and/or prudent, maintain higher limits and/or broader coverage. The Contractor is not relieved of any liability or other obligations assumed or pursuant to this Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types.
1. Commercial General Liability Insurance in an amount not less than \$1,000,000 per occurrence for bodily injury or property damage, personal injury and advertising injury, products and completed operations coverage;

2. Workers Compensation Insurance in an amount not less than that prescribed by statutory limits; and, as applicable;
 3. Commercial Automobile Liability Insurance applicable to bodily injury and property damage, covering owned, non-owned, leased, and hired vehicles in an amount not less than \$1,000,000 per occurrence; and
 4. An umbrella/excess policy in an amount not less than five million dollars (\$5,000,000) to apply over and above Commercial General Liability, Employer's Liability, and Commercial Automobile Liability Insurance.
- CC. INTELLECTUAL PROPERTY: Contractor warrants and represents that it will not violate or infringe any intellectual property right or any other personal or proprietary right and shall indemnify and hold harmless Mason against any claim of infringement of intellectual property rights which may arise under this Contract.
1. Unless expressly agreed to the contrary in writing, all goods, products, materials, documents, reports, writings, video images, photographs or papers of any nature including software or computer images prepared or provided by Contractor (or its subcontractors) for Mason will not be disclosed to any other person or entity without the written permission of Mason.
 2. Work Made for Hire. Contractor warrants to Mason that Mason will own all rights, title and interest in any and all intellectual property rights created in the performance or otherwise arising from the Contract and will have full ownership and beneficial use thereof, free and clear of claims of any nature by any third party including, without limitation, copyright or patent infringement claims. Contractor agrees to assign and hereby assigns all rights, title, and interest in any and all intellectual property created in the performance or otherwise arising from the Contract, and will execute any future assignments or other documents needed for Mason to document, register, or otherwise perfect such rights. Notwithstanding the foregoing, for research collaboration pursuant to subcontracts under sponsored research contracts administered by the University's Office of Sponsored Programs, intellectual property rights will be governed by the terms of the grant or contract to Mason to the extent such grant or contract requires intellectual property terms to apply to subcontractors.
- DD. NON-DISCRIMINATION: All parties to this Contract agree to not discriminate on the basis of race, color, religion, national origin, sex, pregnancy, childbirth or related medical conditions, age (except where sex or age is a bona fide occupational qualification, marital status or disability).
- EE. PAYMENT TO SUBCONTRACTORS: The Contractor shall take the following actions upon receiving payment from Mason: (1) pay the subcontractor within seven days for the proportionate share of the total payment received from Mason attributable to the work performed by the subcontractor under that Contract; or (2) notify Mason and subcontractor within seven days, in writing, of its intention to withhold all or a part of the subcontractor's payment with the reason for nonpayment. b. If an individual contractor, provide social security number in order to receive payment. c. If a proprietorship, partnership or corporation provide Federal employer identification number. d. Pay interest to subcontractors on all amounts owed by the Contractor that remain unpaid after seven days following receipt by the Contractor of payment from the Institution for work performed by the subcontractor under that Contract, except for amounts withheld as allowed by prior notification. e. Accrue interest at no more than the rate of one percent per month. f. Include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.
- FF. PUBLICITY: The Contractor shall not use, in its external advertising, marketing programs or promotional efforts, any data, pictures, trademarks or other representation of Mason except on the specific written authorization in advance by Mason's designated representative.
- GG. REMEDIES: If the Contractor breaches this Contract, in addition to any other rights or remedies, Mason may terminate this Contract without prior notice.
- HH. RENEWAL OF CONTRACT: This Contract may be renewed by for four (4) successive one-year renewal options under the terms and conditions of this Contract except as stated in 1. and 2. below. Price increases may be negotiated only at the time of renewal. Written notice of the University's intention to renew shall be given approximately 90 days prior to the expiration date of each contract period.

1. If the University elects to exercise the option to renew the Contract for an additional one-year period, the Contract price(s) for the additional one year shall not exceed the Contract price(s) of the original Contract increased/decreased by more than the percentage increase/decrease of the “other goods and services” category of the CPI-U section of the Consumer Price Index of the United States Bureau of Labor Statistics for the latest twelve months for which statistics are available or 2%, whichever is lower.
 2. If during any subsequent renewal periods, the University elects to exercise the option to renew the Contract, the Contract price(s) for the subsequent renewal period shall not exceed the Contract price(s) of the previous renewal period increased/decreased by more than the percentage increase/decrease of the “other goods and services” category of the CPI-U section of the Consumer Price Index of the United States bureau of Labor Statistics for the latest twelve months for which statistics are available, or 2%, whichever is lower.
- II. REPORTING OF CRIMES, ACCIDENTS, FIRES AND OTHER EMERGENCIES: Any Mason Employee, including contracted service providers, who is not a staff member in Counseling and Psychological Services (CAPS) or a pastoral counselor, functioning within the scope of that recognition, is considered a “Campus Security Authority (CSA).” CSAs must promptly report all crimes and other emergencies occurring on or near property owned or controlled by Mason to the Department of Police & Public Safety or local police and fire authorities by dialing 9-1-1. At the request of a victim or survivor, identifying information may be excluded from a report (e.g., names, initials, contact information, etc.). Please visit the following website for more information and training: <http://police.gmu.edu/clery-act-reporting/campus-security-authority-csa/>.”
- JJ. RESPONSE TO LEGAL ORDERS, DEMANDS, OR REQUESTS FOR DATA: Except as otherwise expressly prohibited by law, Contractor will: i) immediately notify Mason of any subpoenas, warrants, or other legal orders, demands or requests received by Contractor seeking University Data; ii) consult with Mason regarding its response; iii) cooperate with Mason’s reasonable requests in connection with efforts by Mason to intervene and quash or modify the legal order, demand or request; and iv) upon Mason’s request, provide Mason with a copy of its response.
- If Mason receives a subpoena, warrant, or other legal order, demand (including request pursuant to the Virginia Freedom of Information Act) or request seeking University Data maintained by Contractor, Mason will promptly provide a copy to Contractor. Contractor will promptly supply Mason with copies of data required for Mason to respond, and will cooperate with Mason’s reasonable requests in connection with its response.
- KK. SEVERABILITY: Should any portion of this Contract be declared invalid or unenforceable for any reason, such portion is deemed severable from the Contract and the remainder of this Contract shall remain fully valid and enforceable.
- LL. SOVEREIGN IMMUNITY: Nothing in this Contract shall be deemed a waiver of the sovereign immunity of the Commonwealth of Virginia and of Mason.
- MM. SUBCONTRACTS: No portion of the work shall be subcontracted without prior written consent from Mason. In the event that the Contractor desires to subcontract some part of the work specified herein, the Contractor shall furnish Mason the names, qualifications and experience of their proposed subcontractors. The Contractor shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of this Contract. This paragraph applies to, but is not limited to, subcontractor(s) who process University Data.
- NN. SWaM CERTIFICATION: Contractor agrees to fully support the Commonwealth of Virginia and Mason’s efforts related to SWaM goals. Upon contract execution, Contractor (as determined by Mason and the Virginia Department of Small Business and Supplier Diversity) shall submit all required documents necessary to achieve SWaM certification to the Department of Small Business and Supplier Diversity within 90 days. If Contractor is currently SWaM certified, Contractor agrees to maintain their certification for the duration of the Contract and shall submit all required renewal documentation at least 30 days prior to existing SWaM expiration at <https://www.sbsd.virginia.gov/>.
- OO. UNIVERSITY DATA: University Data includes all Mason owned, controlled, or collected PII and any other information that is not intentionally made available by Mason on public websites, including but not limited to business, administrative and financial data, intellectual property, and patient, student and personnel data. Contractor agrees to the following regarding University Data it may collect or process as part of this Contract:
1. Contractor will use University Data only for the purpose of fulfilling its duties under the Contract and will

not share such data with or disclose it to any third party without the prior written consent of Mason, except as required by the Contract or as otherwise required by law. University Data will only be processed by Contractor to the extent necessary to fulfill its responsibilities under the Contract or as otherwise directed by Mason.

2. University Data, including any back-ups, will not be accessed, stored, or transferred outside the United States without prior written consent from Mason. Contractor will provide access to University Data only to its employees and subcontractors who need to access the data to fulfill Contractor's obligations under the Contract. Contractor will ensure that employees who perform work under the Contract have read, understood, and received appropriate instruction as to how to comply with the data protection provisions of the Contract and to maintain the confidentiality of the University Data.
3. The parties agree that as between them, all rights including all intellectual property rights in and to University Data shall remain the exclusive property of Mason, and Contractor has a limited, nonexclusive license to use the University Data as provided in the Contract solely for the purpose of performing its obligations under the Contract. The Contract does not give a party any rights, implied or otherwise, to the other party's data, content, or intellectual property, except as expressly stated in the Contract.
4. Contractor will take reasonable measures, including audit trails, to protect University Data against deterioration or degradation of data quality and authenticity. Contractor shall be responsible for ensuring that University Data, per the Virginia Public Records Act, is preserved, maintained, and accessible throughout their lifecycle, including converting and migrating electronic data as often as necessary so that information is not lost due to hardware, software, or media obsolescence or deterioration.
5. Contractor shall notify Mason within three business days if it receives a request from an individual under any applicable law regarding PII about the individual, including but not limited to a request to view, access, delete, correct, or amend the information. Contractor shall not take any action regarding such a request except as directed by Mason.
6. If Contractor will have access to University Data that includes "education records" as defined under the Family Educational Rights and Privacy Act (FERPA), the Contractor acknowledges that for the purposes of the Contract it will be designated as a "school official" with "legitimate educational interests" in the University education records, as those terms have been defined under FERPA and its implementing regulations, and the Contractor agrees to abide by the limitations and requirements imposed on school officials. Contractor will use the education records only for the purpose of fulfilling its duties under the Contract for Mason's and its end user's benefit, and will not share such data with or disclose it to any third party except as provided for in the Contract, required by law, or authorized in writing by the University.
7. Mason may require that Mason and Contractor complete a Data Processing Addendum ("DPA"). If a DPA is completed, Contractor agrees that the information in the DPA is accurate. Contractor will only collect or process University Data that is identified in the DPA and will only handle that data (e.g., type of processing activities, storage, security, disclosure) as described in the DPA. If Contractor intends to do anything regarding University Data that is not reflected in the DPA, Contractor must request an amendment to the DPA and may not take the intended action until the amendment is approved and documented by Mason.

PP. UNIVERSITY DATA SECURITY: Data security is of paramount concern to Mason. Contractor will utilize, store and process University Data in a secure environment in accordance with commercial best practices, including appropriate administrative, physical, and technical safeguards, to secure such data from unauthorized access, disclosure, alteration, and use. Such measures will be no less protective than those used to secure Contractor's own data of a similar type, and in no event less than reasonable in view of the type and nature of the data involved. At a minimum, Contractor shall use industry-standard and up-to-date security tools and technologies such as anti-virus protections and intrusion detection methods to protect University Data.

1. Immediately upon becoming aware of circumstances that could have resulted in unauthorized access to or disclosure or use of University Data, Contractor will notify Mason, fully investigate the incident, and cooperate fully with Mason's investigation of and response to and remediation of the incident. Except as otherwise required by law, Contractor will not provide notice of the incident directly to individuals who's PII was involved, regulatory agencies, or other entities, without prior written permission from Mason.

- 2. Mason reserves the right in its sole discretion to perform audits of Contactor, at Mason’s expense, to ensure compliance with all obligations regarding University Data. Contractor shall reasonably cooperate in the performance of such audits. Contractor will make available to Mason all information necessary to demonstrate compliance with its data processing obligations. Failure to adequately protect University Data or comply with the terms of this Contract with regard to University Data may be grounds to terminate this Contract.

QQ. UNIVERSITY DATA UPON TERMINATION OR EXPIRATION: Upon termination or expiration of the Contract, Contractor will ensure that all University Data are securely returned or destroyed as directed by Mason in its sole discretion within 180 days of the request being made. Transfer to Mason or a third party designated by Mason shall occur within a reasonable period of time, and without significant interruption in service. Contractor shall ensure that such transfer/migration uses facilities and methods that are compatible with the relevant systems of Mason or its transferee, and to the extent technologically feasible, that Mason will have reasonable access to University Data during the transition. In the event that Mason requests destruction of its data, Contractor agrees to destroy all data in its possession and in the possession of any subcontractors or agents to which the Contractor might have transferred University Data. Contractor agrees to provide documentation of data destruction to the University.

Contractor will notify the University of any impending cessation of its business and any contingency plans. This includes immediate transfer of any previously escrowed assets and University Data and providing Mason access to Contractor’s facilities to remove and destroy Mason-owned assets and University Data. Contractor shall implement its exit plan and take all necessary actions to ensure a smooth transition of service with minimal disruption to Mason. Contractor will also provide a full inventory and configuration of servers, routers, other hardware, and software involved in service delivery along with supporting documentation, indicating which if any of these are owned by or dedicated to Mason. Contractor will work closely with its successor to ensure a successful transition to the new equipment, with minimal downtime and effect on Mason, all such work to be coordinated and performed in advance of the formal, final transition date.

RR. UNIVERSITY REVIEW/APPROVAL: All goods, services, products, design, etc. produced by the Contractor for or on behalf of Mason are subject to Mason’s review and approval.

SS. WAIVER: The failure of a party to enforce any provision in this Contract shall not be deemed to be a waiver of such right.

Contractor Name

George Mason University

Signature

Signature

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____



Purchasing Department
4400 University Drive, Mailstop 3C5
Fairfax, VA 22030
Voice: 703.993.2580 | Fax: 703.993.2589
<http://fiscal.gmu.edu/purchasing/>



**REQUEST FOR PROPOSALS
GMU-CM0905-23**

ISSUE DATE: October 4, 2023
TITLE: Emergency Response Services for Collections Stabilization and Recovery
PRIMARY PROCUREMENT OFFICER: Christopher Mullins, Senior Buyer
SECONDARY PROCUREMENT OFFICER: James F. Russell, Director

QUESTIONS/INQUIRIES: Submit all inquiries through [Mason's Bonfire Portal](#), no later than 4:00 PM Eastern Time (ET) on October 18, 2023. **All questions must be submitted through Mason's Bonfire portal.** For assistance with technical questions related to Bonfire, contact Support@GoBonfire.com or visit Bonfire's help forum at <https://vendorsupport.gobonfire.com/hc/en-us>. Responses to questions will be posted to Mason's Bonfire portal and by 5:00 PM ET on October 20, 2023.

PROPOSAL DUE DATE AND TIME: November 8, 2023 @ 2:00 PM ET. ATTENTION: PROPOSALS WILL NOT BE ACCEPTED VIA EMAIL, MAIL, THROUGH eVA OR IN PERSON. SEE SECTION XIII.A.1 FOR DETAILS ON ELECTRONIC PROPOSAL SUBMISSION.

In Compliance With This Request For Proposal And To All The Conditions Imposed Therein And Hereby Incorporated By Reference, The Undersigned Offers And Agrees To Furnish The Goods/Services In Accordance With The Attached Signed Proposal Or As Mutually Agreed Upon By Subsequent Negotiations.

Name and Address of Firm:

Legal Name: BMS CAT of Maryland LLC

Date: 10-30-23

DBA: _____

Address: 8280 Stayton Drive, C-2 Jessup, MD 20794

By: *Hal Hocking*
Signature

FEI/FIN No. 842870903

Name: Hal W. Hocking

Fax No. _____

Title: Regional Account Manager

Email: hhocking@bmscat.com

Telephone No. 2404604813

SWaM Certified: Yes: _____ No: No (See Section VII. SWaM CERTIFICATION for complete details).

SWaM Certification Number: _____

This public body does not discriminate against faith-based organizations in accordance with the *Governing Rules, § 36* or against a Bidder/Offeror because of race, religion, color, sex, national origin, age, disability, or any other prohibited by state law relating to discrimination in employment.



EXECUTIVE SUMMARY

Blackmon Mooring & BMS CAT specializes in the restoration of commercial properties on a global basis. From hurricanes, fires and earthquakes to floods and mechanical breakdowns, we stabilize the loss site, determine the scope of damage and restore the property to pre-loss condition. Our focus on products and services, flexibility, urgency, experience, training and staffing makes Blackmon Mooring & BMS CAT a prime partner to meet the Interstate's needs.

Blackmon Mooring & BMS CAT specializes in superior operational expertise in disaster recovery, enabling the Interstate. operations to return to daily operations quickly and maintain function. Our goal in every loss situation is to provide efficient, cost-effective restoration services tailored to the property owner's needs. The corporate office provides accounting, scientific, marketing and administrative support for all projects throughout the world. However, the quality, expertise and dedication of our field staff are our main differentiators.

PRODUCTS & SERVICES

We can provide all of the restoration, mitigation and remediation services that are needed for any size loss, including:

- Fire & smoke damage restoration
- Water damage restoration
- Moisture control & dehumidification
- Mold & microbial remediation
- Biohazard & crime scene clean up
- HVAC decontamination
- Document & Media recovery
- Hurricane recovery
- Restoration project management
- Reconstruction

Through pre-defined instructions and parameters, our technicians can be on the job immediately to mitigate damage. The joint development of a scope allows BMS CAT the facility representative and any insurance personnel (if any) to agree to the work that is needed to restore the property.

FLEXIBILITY

The loss will dictate the restoration requirements based on the scope developed and the circumstances of the loss. Through regional management and coordinators, we understand the importance of the business unit being brought back to operating condition and will keep these factors in mind:

- We are prepared to provide a scope of work and a budget to the property owner and adjuster to agree on the scope.
- We know that the restoration process is dynamic in nature and that we, as a partner with the business owner, must be willing to adjust our work activities to provide the best required service.

- Our experienced staff can point out more efficient ways of completing a task that will benefit the process.
- We will work within predefined guidelines based on the size and complexity of the loss, as agreed upon by the parties involved.

RESPONSIVENESS

Immediate response is imperative to limiting damage and controlling expenses. Blackmon Mooring & BMS CAT's customer response support includes:

- 24/7 Central Call Center operated by BMS CAT in our home office in Fort Worth, Texas.
- Localized, full-staff operations ready to respond.
- Regional response centers throughout the U.S. housing regional directors, supervisors and equipment to allow rapid deployment to a loss scene.
- Home office management that actively oversees and provides support and supervision to the regional group on site.
- CAT Command Centers established in area-wide disasters, so there are both operational and management personnel to monitor and respond to all losses.

STAFFING

On-site assistance is provided, rapidly, thanks to permanent staff located throughout the U.S. Local help is then called upon to maximize capability and provide timely results.

With this network of personnel, we can be involved in numerous jobs at one time in various locations. This provides greater peace of mind, knowing we have the capacity to deliver services to handle any size loss, regardless of whether it is a single loss at your location or a community-wide disaster.

SUMMARY

Blackmon Mooring & BMS CAT provide customers with a complete, mitigation, restoration, reconstruction and emergency response program in just one phone call. We have the resources and skills necessary to handle multiple projects simultaneously, area-wide and throughout the world.



George Mason University

RFP: GMU-CM0905-23



Mr. Christopher Mullins
George Mason University
4400 University Drive F
Fairfax, VA 22030

RE:GMUM0905-23

Dear Mr. Mullins,

Thank you for the opportunity to bid on the George Mason University RFP GMU-0905-23. As requested, we have prepared a response, which outlines BMS CAT's qualifications, workflow, and pricing for this contract.

In our response, please note the careful attention to details regarding our processes, paperwork, operational equipment, and facilities in place to properly manage/stabilize/restore your assets. As you well know, media restoration is a very specialized field, and trusting your valuable assets should not be left to restoration companies that outsource these functions, or do a small percentage of the jobs BMS CAT does each year. George Mason University, especially, has very historically significant media that deserves the care and trust of an organization like BMS CAT that has been in business since 1948. Experience and proven workflows are something that BMS CAT can offer that other organizations cannot match.

BMS CAT has a dedicated document/media restoration team and the largest freeze-dry capacity in the United States. We are a national company that has resources to ramp-up quickly in the event of an area-wide disaster, which could consume all the resources of other companies. With BMS CAT you not only get the dedicated resources of specialists in delicate media recovery, you get the strength of a large, national company that can deploy resources quickly.

We are confident that BMS CAT has the knowledge, resources and experience that George Mason University needs.. With BMS CAT, you get quality and responsive service, combined with the unmatched skill of the leading company in document restoration services. Our secure facilities, proven workflow, highly trained and screened professional staff, ensure your documents are well protected.

We look forward to working with you. If our response meets your satisfaction, we would like the opportunity to meet with you and personally present our overview and proposal.

In the meantime, please do not hesitate to contact me if I can be of further assistance. I can be reached at 313-320-1877 or mjaroma@bmscat.com.

Sincerely,

Matt Jaroma

Vice President, Documents Sales

COMPANY PROFILE & REFERENCES

COMPANY PROFILE

For over 70 years, Blackmon Mooring & BMS CAT have been the number one resource for cleaning and restoring homes and businesses. We have built our reputation as experts who get the job done right. We do not only focus on the job, we also focus on the customer.

Started in 1948 as a furniture and dye shop, Blackmon Mooring has grown to become a leader in each service area it practices – from carpet cleaning and air duct cleaning to fire and water restoration. The earliest founders of Blackmon Mooring built their business on reliability, quality and superior customer service. In 1981, we expanded our reach globally with the addition of the BMS CAT division and since then, we have responded to some of the world’s most devastating disasters.

BMS CAT has been helping organizations recover and restore documents since the early 1980’s when our first freeze-drying chamber was installed. Since that time, we have become the leading company for document recovery and restoration services. We have assisted customers all over the world by restoring paper and electronic media affected from fires, floods, improper storage or other natural disasters. Our seventh generation freeze-dry chambers are the most advanced in the industry.

BMS CAT understands the importance in recovering essential materials such as business documents, records and books. We have a secure process to maintain the ‘chain-of-custody’ when working with your sensitive materials. Our professional records recovery services make it possible to recover documents that, just a few years ago, would have been written off as a total loss.

Today, we follow the same principles that we were founded upon, and always remember that the customer is the cornerstone of our business. We go to great lengths to make sure you are not just satisfied, but happy with our services. After all, our reputation depends on it.

BMS CAT LOCATIONS



REFERENCES

Pentagon Library – Washington, D.C.

The Pentagon Library is located within the center ring of the Pentagon, the world's largest office building. On September 11, 2001, terrorists attacked this facility by crashing a commercial jetliner into the building. The nose gear of the plane actually penetrated the first four rings of the Pentagon, and hit the back wall of the library. Smoke and water damage affected the entire library, which housed more than 250,000 bound volumes, 2,000,000 pieces of micro-graphics, classified and confidential records, historical military documents, more than 100 computer workstations and a dedicated server room.

Raytheon – Space & Airborne Systems

Contact: Steven Van Nguyen

Telephone: 972.205.4546

A helicopter burst into flames after it crashed into the Raytheon plant located in El Segundo, CA in March of 2011. The building housed hundreds of Raytheon engineers and staff. The helicopter landed in a patio area, setting the first two floors of the building on fire.

Raytheon, being a military contractor, had many sensitive documents that needed to be recovered. There were thousands of files that had been placed into large 55 gallon bags – some marked for recovery, some for disposal, but many were wet and intermixed with employee's personal effects.

BMS CAT was brought in the day after to start recovering documents and employee's personal items. We set up a large onsite cleaning facility to triage all the bags. The lightly affected items that were not wet or moldy were cleaned onsite. Everything else was shipped to BMS CAT's corporate headquarters in Fort Worth, where the items were freeze-dried, cleaned and subjected to Gamma Radiation. The entire process took a few months.

Internal Revenue Service

Contact: Edward Roberts

Telephone: 512.640.8008

On February 18, 2010, a suicide pilot crashed his plane into the regional IRS center in Austin, Texas. Fire raged throughout the center, causing widespread devastation. The crash caused smoke to billow into the sky, leaving a huge gaping hole and two fatalities.

BMS CAT was contacted to sort through and preserve thousands of sensitive IRS documents and personal items. We worked very closely with the Department of Homeland Security from start to finish to ensure the confidentiality of the project.

The IRS took the position that the building was unsafe for their employees to retrieve personal items. Instead, BMS CAT collected personal items from the desks and cubicles of over 200 employees, which were inventoried and removed to our off-site cleaning facility. To ensure the chain-of-custody was not broken, we added barcodes to every box in order to properly track and scan into our internal systems. Sensitive items were carefully and securely transported under the protection of federal guards, and our

additional security teams. Due to the high importance of the items and overall project, we worked in front of cameras and behind well-guarded fences in an isolated area.

Our expert crews began manually peeling charred papers apart one by one, carefully trimming severely damaged edges and scanning others into readable pdf documents. Special document sponges were applied to clean debris from papers. Wet documents were put through our specialized freeze-drying process to remove moisture and prevent mold growth. Antimicrobial solution was applied to clean and disinfect all the damaged items.

To assist IRS employees with locating their personal effects, we uploaded images of the items to our secure site giving them exclusive access. This not only helped us effectively communicate with those affected, but also showcased our accountability. We were entrusted with the most sensitive documents and items after an unthinkable disaster. Our security staff, in addition to federal security guards, gave our client comfort and ease of mind knowing our teams were properly monitored and demonstrated professionalism during a difficult time.

Fried Frank Harris Shriver & Jacobson LLP

Contact: Susan Scattergood

Telephone: 212.859.8359

Fried Frank Harris Shriver & Jacobson LLP is an International Law firm located in the financial district of New York. When Hurricane Sandy pounded the upper East Coast, extensive flooding occurred in the New York City area.

Fried Frank stored all of their legal documents in the basement, which became totally submerged in water as a result of the flooding. BMS CAT inventoried and removed 26 truckloads of documents to freeze dry, clean and Gamma Radiate.

In addition, we have also provided services to the following:

- **FBI**
- **Library of Congress**
- **Smithsonian**
- **FAA**
- **United States Marshall Service**
- **VA Hospitals**

VENDOR QUALIFICATIONS

VENDOR QUALIFICATIONS

Blackmon Mooring & BMS CAT boast **the world's largest capacity for freeze-drying**. Our state-of-the-art document recovery facility, coupled with advanced equipment, qualified personnel and security, allow us to safely restore your documents in a timely manner.

Blackmon Mooring & BMS CAT have decades of experience in handling jobs of all sizes – both small incidents and area-wide disasters. Our national footprint gives us the ability to quickly respond to any incident that may occur at your property or record center. We mobilize staff, equipment and other resources efficiently and effectively, and have successfully helped companies recover from Hurricanes (Sandy, Matthew, Ike, Katrina, Wilma, etc.) and other disasters. BMS CAT has also worked with Iron Mountain on many occasions to restore documents that have been damaged by water, fire and mold.

Blackmon Mooring & BMS CAT can respond quickly after your call to mobilize staff, packing materials and freezer trucks on site. We have systemic processes to barcode and track all of the materials that will be moved from its original shelf location. Our barcoding methodology keeps the chain of custody intact while moving materials from location to location. In addition, our barcoding methodology allows for up-to-the-minute tracking, so the location of material is always known and retrievable. We have the ability to keep materials organized, so that they are returned to your shelves in the proper order. The inventory system keeps everything in order so put-away is logical and orderly.

We have the ability to assess and monitor the level of moisture within each set of materials we service. Our staff is trained to use document-specific moisture meters/paddles to ascertain the MC (Moisture Content). Throughout the recovery process, we monitor the moisture to ensure we are treating the materials properly. We monitor the MC levels to confirm documents have reached the normal equilibrium. BMS CAT also possesses extensive years of experience in working to clean and remove mold from books and other types of documents. By utilizing specialized document cleaning sponges and vacs, we are able to perform these cleaning services efficiently and effectively. In cases where documents need to be sterilized, we can apply biocide chemicals or use gamma-radiation if your facility prefers this method for sanitizing in the United States.

BMS CAT is accustomed to working with customers who require high levels of security. Federal regulations concerning privacy in medical and personal information make security and chain of custody issues extremely important. Records and information recovery services are performed in our state-of-the-art recovery facility which meets or exceed the requirements of a commercial records management center. As needed our security can be augmented to meet the requirements of classified and confidential government information through facility lock-down.

Confidentiality and security of customer contents is paramount to the continued success of BMS CAT and therefore is a top priority. In fact, Wells Fargo Banking did an onsite security audit through an outside consultant during which BMS CAT scored a 5 out of possible 5.

Security protocols start at the customer's facility. BMS CAT's customer site security protocol is as follows:

- BMS CAT will take control and custody of the documents and protect them from unauthorized people at the client's location.
- If so directed BMS CAT can hire a security firm for additional security.

- BMS CAT will segregate the document area from other restoration efforts underway to minimize traffic in the document recovery area.
- BMS CAT will inventory documents, audit the inventory and then securely transport the documents to the truck or trailer that will be transporting the documents.
- The documents will be placed in the truck or trailer and then securely lock the trailer door. The door does not have to be locked if a designated dedicated security person is visually monitoring the trailer door.
- BMS CAT will not leave documents alone in hallways while moving the documents to the truck or trailer
- BMS CAT will not leave documents in the truck or trailer with the door open or unlocked.
- BMS CAT employees will have visible picture ID badges.
- BMS CAT technicians will be uniformed with the company logo visible.

PRESCREENING EMPLOYEES

At time of hiring all BMS CAT employees are subject to a background check and drug/alcohol screening. Employees are also subjected to random annual drug screening. Pre-employment drug screens are mandatory along with random checks. All newly hired employees are also e-verified. Criminal record checks include a local, state, and federal check for the past seven years. BMS CAT verifies previous employment references for the past 3 years and conducts Social Security Number verifications (trace and reverse trace). Video surveillance and 24 hour security monitoring ensure safety of our facilities.

ACCESS & CONTROL

Entrance to the building is controlled by an electronic card key access. For special projects employees are issued "project badges" that differentiate these employees from regular BMS CAT employees. Non project employees must be escorted into areas where special projects are being processed.

Upon arrival, boxes are logged in and tagged for identification. Food and/or beverages are not allowed in the document preparation area. Document prep staff is not allowed to wear headsets and internet access, phones, cameras, and other electronic devices are not permitted in work site areas. Employees wear company uniforms and are issued photo I.D. badges and required to wear them at all times

TRANSPORTATION PLAN

The following is the recommended procedure.

- Secure the trailer door with a US Customs High Security Seal. Record the serial number. The person on the receiving end should confirm the match and that the seal is unbroken. Side doors of the trailer should also be sealed.
- A straight through shipment should be specified if a contract carrier is being used.
- Specify team drivers so there is no overnight stay
- Specify a security vetted company with GPS tracking on the trucks if desired.
- Specify only US Citizens if required.
- Specify that the drivers must have passed a criminal background check and drug screen.

FACILITY & DESCRIPTION

BMS CAT has fenced in secure modern buildings. Document processing areas are segregated from other areas of the building. The building is locked at all times via key card and fence. Access is granted by key card issued only to screened employees. The document processing center is monitored by 34 cameras in and out of the facility. Work is performed under tight supervision and no electronic devices are permitted. All freeze drying equipment can be monitored on-site or remotely. If any equipment anomalies occur, two document processing center managers are immediately notified.

Should an emergency occur in the document processing center, our center manager, Amerin Ingram is responsible for notifying the appropriate parties if necessary.

Should our power be interrupted for an extended time BMS CAT could bring in generators to power the building and freeze dry chambers to prevent an interruption of our contract.

HIPAA – If you're a medical professional and your practice suffered damage requiring the assistance of document repair specialists, patient confidentiality is a key concern. Only HIPAA-compliant professionals can have access to those records, and you cannot rely on every disaster recovery company to implement those standards. BMS CAT maintain HIPAA compliance throughout the entire process to ensure your patients' privacy is protected.

FACTA – Identity and credit card theft are major issues. It seems like every week there is a new retail store losing control of millions of customers' credit card numbers. If you are a business that stores client credit card or banking information, then you are aware of how stringent FACTA standards can be. BMS CAT can perform document recovery that meets FACTA compliance standards and ensures your customers' credit card and financial information remains private.

GLBA – Lenders, banks and other financial institutions are required under GLBA to disclose to their customers exactly how they share their information. Under certain circumstances, a document recovery company taking possession of these records in order to restore them could be construed as information sharing, at least if that company is less than forthright in their practices. BMS CAT take financial confidentiality very seriously, and have developed standards to ensure GLBA compliance.

Sarbanes-Oxley – Publicly traded companies and brokerages are required to adhere to strict guidelines regarding disclosures to potential investors regarding their securities. Maintaining records is an essential part of this, as well as maintaining internal confidentiality. If you have concerns about maintaining compliance with Sarbanes-Oxley should document recovery prove necessary, BMS CAT can help.

With so much at stake, it is hard to understate the importance of accountability in the document recovery process. At BMS CAT, we truly understand there is no room for mistakes when it comes to [protecting private, proprietary and client information](#). We hold our responsibility to you in this regard among our most sacrosanct duties.

GENERAL CLEANING PROTOCOL

GENERAL CLEANING PROTOCOL

BMS CAT has extensive experience in recovering documents and special media following a disaster. The cleaning portion can be performed on documents damaged by debris, char or soot.

Water Damage: If the Moisture Content of the paper is less than 7%, documents can be cleaned without drying first. If Moisture Content is greater than 7%, documents will continue to sustain further damage as the water equalizes or wicks into the paper. Freeze-drying is generally accepted to be the least damaging of all methods of drying wet paper. You can check out the National Archives comparison of drying methods here. <http://www.archives.gov/preservation/disaster-response/drying-techniques.html>

Fire & Smoke Damage: Documents damaged by smoke and soot are cleaned using “chemical sponges” made of pure latex rubber. Soot particles are removed from the edges of volumes and documents. Technicians use gentle sweeping motions, moving from the center out to the edges of the document. If necessary, HEPA vacuums will be used to trap additional debris. If odors exist, ozone may be used to neutralize the odor. Ozone should not be used, however, on archival or intrinsically valuable records.

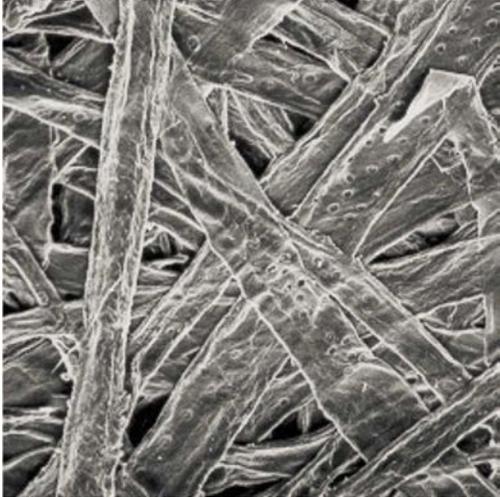
FREEZE DRYING VIA SUBLIMATION

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and transported via any refrigerated means.

Documents exposed to water will continue to experience further damage as the water equalizes or wicks into the paper. The Library of Congress and the National Archives & Records Administration both recommend vacuum freeze-drying by sublimation as the preferred method for removing water from paper.

Water exists in three phases: liquid, solid and gas. It is the liquid phase of water that is most damaging to paper and any media printed on it. The cross-scission and cross-fusion of paper is gradually destroyed by water, and the tiny fibers of the paper separate, and in turn, these fibers no longer serve as an adhesive. Most writing pen inks are water soluble and begin to run or dissolve. Finally, mold now has an optimal environment for growth. Because of this, simply air-drying water soaked paper is not practical.

By allowing paper and books to start drying instead of freezing, additional damage is occurring to the documents. The escaping water molecules separate and break the paper fibers, while rendering the lignin useless. Paper generally swells about 25% greater in volume and 30% or greater in reduced strength, causing it to tear easily.



MICROSCOPIC VIEW OF PAPER

Drying frozen, water-soaked paper via sublimation (or freeze-drying) is slower than evaporation directly from the liquid phase. However, sublimation causes the least amount of damage to the paper and content. The drying rate using sublimation can be controlled by manipulating process parameters, minimally impacting the time difference.

WHAT IS FREEZE DRYING VIA SUBLIMATION?

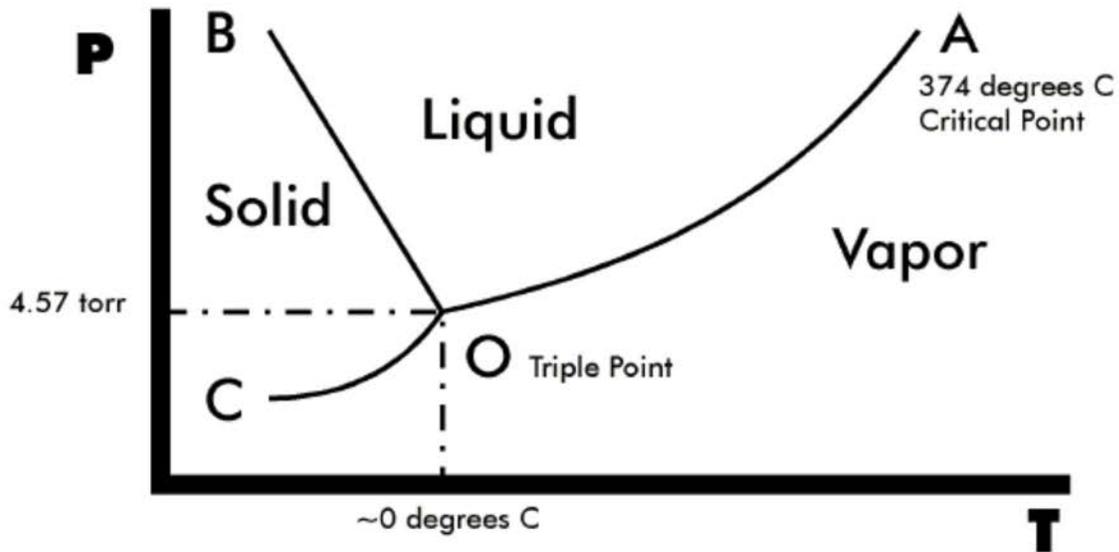
The technical aspects of drying via sublimation (or freeze-drying) can be complex, but the basic principles of the process have been widely understood and accepted for generations.

Sublimation is a phase change, which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and, by the process known as evaporative cooling; the temperature of the ice tends to get colder. Therefore, it is necessary to have heat from outside the system (in our case, electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will too, thus increasing the rate of sublimation. It is important to know that, historic archival documents the heated shelves are optional; the process will simply take slightly longer. Depending on the type and age of the material, some archivists recommend removal of heated shelves for preservation purposes. In order to closely monitor the temperature of the paper, BMS CAT places temperature sensors in multiple boxes throughout each chamber.

Low pressure and a surplus of heat (energy) are essential during the freeze-drying process. However, when the pressure reaches 0.100 Torr (prox) the process becomes adiabatic (without loss or gain of heat). At this point, the process is truly optimized, because all of the electric heat added works to raise the temperature of the ice versus supporting sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid, giving up its latent heat as sensible (apparent) heat, thus the need for refrigeration. As the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr (point O), water can exist in only two states - solid and vapor (depending on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states: solid, liquid and vapor. Remember, all the damage to paper is done during the liquid phase of water. By keeping the pressure below 4.57, we prevent further damage while allowing the ice to sublime (go directly to vapor).

The process of freeze-drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr and adding heat to warm the documents, causing sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber. Periodically, the cold trap is isolated from the chamber and the refrigeration cycle is reversed to heat the coils. Next, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are several cold traps operating "push pull" - while one trap is in defrost; the other is still connected and removing water.

Each item is first HEPA-vacuumed to remove gross accumulations of mold and debris. The technician then uses a dry cloth and/or “chemical sponges” made of pure latex rubber to further remove accumulations from the surface.

Binders are not a good candidate for cleaning or retaining following damage. Instead, information from each binder is retained with the materials that were housed in that binder. Additionally, we photocopy or photograph the original information to prevent confusion when re-filing.

If requested, BMS CAT will also replace file folders made of permanent-durable materials. The old file labels are retained and placed in a plastic bag and hermetically sealed and new file labels are applied to replace them.

Documents that have been wet or contain mold should be cleaned and sanitized. An EPA-registered biocide will be applied to the documents, specifically where visible mold growth has occurred. If documents are exposed to Class 3 Water (“Black Water”), they should be sterilized via Gamma Radiation. Black Water can include sewage, river water, water from area wide flooding and any water that has been present for extended periods of time.

If documents will be returned to a healthcare setting, Gamma Radiation is recommended for the safety of patients who may have compromised immune systems.

CONSIDERATIONS

If your documents are important enough to recover, security must be of concern. Security occurs at several points as demonstrated below:

Customer Site Security	Transportation Security	Restoration Security
<ul style="list-style-type: none">•Additional security should be hired if necessary•Segregate media from other restoration activities•An inventory of the media and documents should be performed and audited•When items are placed in a truck/trailer a security lock should be applied•A dedicated security person should visually monitor the trailer door•Items should not be left alone during transport or when in the trailer•Restoration employees should have visible ID badges with pictures and wear uniforms	<ul style="list-style-type: none">•Trailer doors should be secured with a U.S. Customs High Security Seal•Straight through shipment should be used if common carrier is shipping•Team drivers should be used so no overnight stays are required•Transportation should be performed by a security vetted company with GPS Tracking•Driver background checks should be performed	<ul style="list-style-type: none">•The facility where restoration occurs should be secure•There should be no open doors for visitors to walk in•Employees should be background checked and drug screened•Only employees with a need to access the documents should be allowed to enter the facility•The facility should be alarmed•The processing areas should be segregated from other areas of the building•Ensure that training for employees applicable to your industry has occurred (HIPAA, Sarbanes Oxley, etc.)

PROJECT SCOPE & PROCESS



Sample Scope of Work

George Mason University

400 University Drive Fairfax, VA 20230

LOCATION OF PROJECT

**PROPOSED SCOPE OF WORK
DOCUMENT RECOVERY SERVICES**

Prepared by

**NAME
TITLE**

BACKGROUND

State the nature of the incident. Facts not opinions. Who, what, when, where, why & how type of narrative. How were we brought into the incident? State what the insured has told us of information about the event. State who is involved in the incident. Name the people involved, adjusters, consultants, insured's representatives, attorney's etc.

Insert a few small photos.

INSPECTION BY BMS-CAT

State what was observed measured and inspected. What measurement tools were utilized? Name rooms and square footage affected. Explain the degree of severity of the loss. Try to use quantifiable terms instead of adjectives. 80% of documents appear to be saturated or submersed in water versus "a lot were wet" or "wet documents everywhere".

Were observations and statements were made by others during the inspection. If it is appropriate to quote what was said then include it. This could be direct instructions from the adjuster or insured. Caution should be exercised when others express opinions. If they made statements and you took notes, they should not object. Use discretion.

Our goal is to estimate the order of magnitude to perform Document Recovery Services.

Moisture Content of Paper:

BMS did measure the moisture content of documents. We used a Delmhorst P-200 Archivists moisture meter with paddles. The equipment was new and calibrated.



- MC is within the “**acceptable range**” = < 7% MC (Moisture Content). Many offices may have documents that are 5% MC. These documents will not have to be freeze dried.
- MC is “**higher than desired**” = >7% MC but < 11% MC.
 - Document moisture content is considered “**Humid - Damp**”.
 - Recommended action is to reduce moisture content to the < 7% level within 48 to 72 hours on the premises. This is generally for very small batches of files. Larger quantities should be sent for freeze drying.
- MC is “**Unacceptable**”= >11% MC.
 - Documents are considered “**Wet**” and should be freeze dried via sublimation process immediately.

Our inspection with this meter will save money by eliminating unnecessary freeze drying. Also, we will ensure that documents that require freeze drying will not be overlooked.

SCOPE OF WORK

The **CLIENT NAME** has an immediate and urgent need for clean up and recovery services of sensitive documents. BMS CAT shall attempt to recover, document and salvage as many documents as possible, and shall document and securely dispose/destroy documents which are beyond recovery.

The following will outline BMS CAT protocol.

DOCUMENTS:

- Inventory system and labeling: (see attachments)
 - An inventory system will be utilized that will give each box a unique number that will actually become its own identifier.
 - The number will tell us the building, the floor, the office (or cubicle), and how many boxes from each cubicle.
 - We will also have a section on our spreadsheets and box labels for comments about what the documents are.
 - Such as “Audits 2009, March A through E or Jackson through Lovelace”.
 - Or papers found on floor under Mary Smith’s desk.
 -

BMS CAT INVENTORY AND LABEL SYSTEM	
0.00000	There are 5 decimal places to the right. There one decimal place on the left.
1.00000	The first tow digits will be the floor number. This illustrates floor #1.
1.01000	This is the first office on the first floor. We have used over 90 on one floor.
1.01001	This is the box from the first office on the first floor. We could have up to 999 boxes per individual office.
3.07098	This is box #98, from office #7, on the third floor.

- Recovery:
 - **Insert some photos here if you like. (small)**
 - Cleaning and sanitizing: *Please see attached specifications for cleaning protocol.*
 - Freeze Drying: *Please see attached specification.* We have the world’s largest capacity and the most technologically advanced freeze drying chambers. That

means we get things done fast and there is virtually no further damage to the documents. This is the least costly way to dry paper. This is the process the Library of Congress recommends and the National Archives. The moisture in the documents leaves as a gas in the freeze dry chamber. The documents will be virtually in the same condition as when they were frozen.



- Trimming char: Pages that have the edges burned and still have readable text will have the char cut from the outer edges. This is to protect employees from a safety and health standpoint. The char will break off when handling causing particles of soot to become respirable. The char will be collected and disposed of in a secure fashion.
- Deodorization: Deodorization is a challenging time consuming process. We have found the effectiveness of this process is in the 98% to 99% category. Usually several different processes are employed.
 - Ozone, air exchanges, air filtration and ionization are the methods that must be employed repeatedly to continue to reduce the levels of odor. These processes are aerosolized and must come in contact with the papers to cause a chemical reaction with the carbon based odor. This will reduce the odor with each process and time duration.
 - Files that were on shelves or in file cabinets will deodorize faster and more completely than files that have fallen on the floor. When files have fallen on the floor and are reassembled into another file it is difficult to get the deodorizing processes to the surfaces of the paper as compared to the outer edges of files that were intact on shelves.
- Secure Document Destruction:
 - The normal process is to shred the documents to a size that the text cannot be recognized. When the documents are wet or contaminated they are masticated to render it unrecognizable. The documents are then mixed with other paper media and bound into a bale. The bale is securely

- transported to a chemical pulping unit render the paper to a liquid pulp and processed into recycled paper.
- We then issue a letter of “Certified Secure Destruction”.
 - **OPTION: INCINERATION**
- Sterilization Option: (see attached specification)
- Sterilization should be used on any paper documents that meet the following criteria:
 - Black water-particularly sewage.
 - Area wide flooding with dirty water.
 - Documents that have been submerged in water for a long period of time (weeks).
 - Documents going back into a healthcare setting. In particular to hospitals or patient offices with open wound care.
 - Extreme employee concerns over safe of handling the documents.
 - Employee(s) have file complaints with EPA, OSHA or have filed lawsuits regarding the safety of the documents.
 - Irradiation will *eliminate* microbial hazards. The process will bring the documents to *near sterility*. Destroys E. coli O157:H7, salmonella, Listeria, etc. Used for 40 years to sterilize medical, dental and household products.
 - Safer than pasteurizing milk.
 - Very affordable.
- Chain of Custody and Security:
- BMS will protect the client’s documents from the moment we take custody on the client’s property.
 - Only employees that have a need to access documents will be allowed access to the documents. This applies at the client’s site and at BMS facilities.
 - Truck doors will be closed and locked while loading documents. Or a security person will be present to ensure the documents are not tampered with.
- Transportation:
- Transportation needs have been communicated with the client. BMS CAT recommends a dedicated shipment point to point. **Client can select from the following options, depending on sensitivity of the documents:**
 - **Dedicated shipment directly to BMS facility. Nothing else is on the truck. The trailer that leaves the site is the same trailer that will arrive at BMS CAT.**
 - **Specify no overnight stay. Some clients are concerned that a trailer parked overnight at a truck stop (or elsewhere) is at risk of theft. This specification will trigger team drivers to allow driving straight through.**
 - **Specify NO TRUCK BROKERS only VETTED companies. There is a slight surcharge for this. But this would provide for a trucking**

company that owns its own trucks, has vetted employees and uses a GPS to track the truck.

ADDITIONAL RECOMMENDATIONS

ITEMS NOT INCLUDED IN THIS SCOPE OF WORK

Debris removal from site?

Dumpsters to be provided by client?

Reconstruction?

State work that the client has said they will perform.

State work that the client has stated they do not wish BMS to perform.

SAFETY PROTOCOL

BMS CAT believes that safety must be considered as the number one priority on every project and that work related accidents are avoidable. BMS CAT has developed its own Specific Health and Safety Plan that normally complies with facility health and safety programs consistent with the services normally provided under similar circumstances. This plan will be implemented and enforced in accordance with the policies and procedures of BMS CAT. This plan will address the hazards associated with all aspects of work to be performed during this project. Items covered will include, but are not limited to: personal protective equipment (PPE) requirements, elevated work and OSHA's fall protection standard, equipment maintenance, emergency procedures and electrical hazards.

INSPECTION AND ACCEPTANCE

Client will need to appoint a representative to inspect and accept our work.

TIME FRAME & COST

- Documents will take about 30 days per truck load, depending on how much freeze drying is needed, how much char on the fire singed, how much soot on the non fire singed and deodorizing.
- The actual project cost may be less if the quantities and difficulties of work are less than anticipated.

- The actual project cost may be more if the quantities and difficulties of work are more than anticipated.
- The actual project cost may be more if more work is added to the Scope of Work.

ADDITIONAL NOTES

- ✚ BMS CAT will need an area where supply distribution can be set up in the work area.
- ✚ BMS may have a supply truck on site.
- ✚ BMS may have a refrigerated trailer on site to receive the documents out of the building and stabilize the documents until they can be freeze dried.
- ✚ BMS may place one office trailer on site for administrative staff.
- ✚ BMS may need dumpster for categories waste disposal.
- ✚ BMS may need a generator of adequate size to provide lighting, support air scrubbers and power tools on the site. Electrical distribution panels will be placed on each floor. Power cords will emanate from these panels for string lights, area work lights, etc.
- ✚ Outdoor Portable Toilets may be provided to support an anticipated work crew of ??, plus **CLIENT NAME** support people and security.

WORK EXPERIENCE:

- BMS has responded to many US Government and State Agencies for MAJOR building damage or EXTENSIVE document restoration. Some of these are:
 - Homeland Security-ICE Division.
 - NTSB
 - FBI
 - US Federal Courts.
 - US Probation Department.
 - National Archives and Records Administration (NARA).
 - Library of Congress.
 - US Park Service.
 - Sherriff's Offices, County Records Offices, State Museums, Police Departments, etc.
- BMS CAT is the preferred vendor to most of America's financial institutions for emergency services including document recovery services.
 - J P Morgan Chase.
 - Wells Fargo.
 - US Bank.
 - Fidelity Investments.
 - Moody's Financial Services.
 - Zurich.

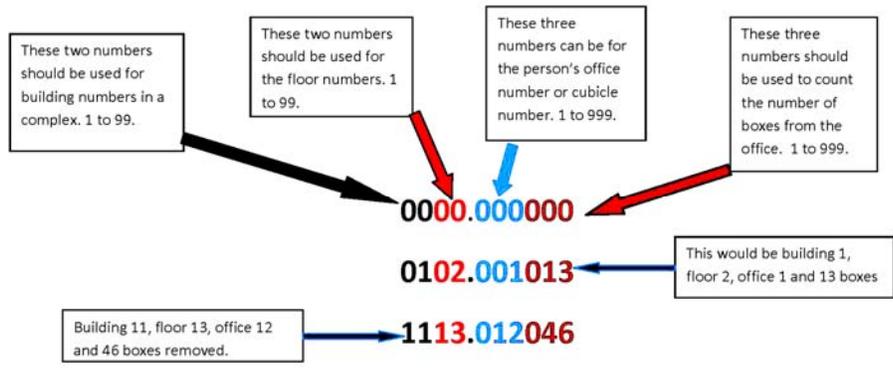
DISCLAIMER

Information in this SOW has been provided by various people associated with this project. We trust our information is accurate. Our recommendations are based on current industry best practices and our many years of experience.

BOX LABEL

BMS Inventory Control # 4.01003	BMS Job # MR4715
Client: Internal Revenue Service Job Location: Austin, TX	Client Reference # B-104
Location of Boxes: Horizontal file cabinet by window.	
Comments: Audit files 2008.	
	Priority 1
	Packed By: JP

INVENTORY NUMBERING SYSTEM



SIMPLE PROJECT BELOW



BMS CAT NUMERIC INVENTORY NUMBERING SYSTEM
9-23-2010

Document Cleaning Protocol (paper)

1-8-2011

1. BMS-CAT shall use the least aggressive methods that will still be effective for the remediation process. These methods would be progressive in detail, on an as needed basis.
2. BMS CAT shall clean all files, file folders, papers, manuscripts, books, etc., that displays visible mold growth in the following manner: each item will first be HEPA vacuumed to remove gross accumulations of mold growth. The technician will then use a dry cloth and/or a latex rubber dry restoration sponge to further remove accumulations from the surface.
3. In the case of books, the spine may be accessed and cleaned with a “bottle brush” or dry cloth as necessary. The fore edge may also require the use a brush.
4. Binders may not be cleaned or retained. Instead, information from each binder will be transferred to a piece of paper which will be stored with the materials that were housed in the binder. In addition, BMS-CAT will photocopy or photograph the original information to prevent confusion about the original label.
5. File folders will be replaced with new ones (**when specified**) made of permanent-durable materials. New file labels will be applied. *(The old files & labels will be retained, placed in a plastic bag and hermetically sealed).*
6. BMS-CAT shall perform all work in a clean room located at our Document Remediation Center, Fort Worth, TX or Chicago, IL.
7. When documents are stuck together, not all of the pages will be separated unless specified by the client. Generally papers that have been modestly wet for short durations will separate easily. Severe sticking may require special treatment such as rewetting with water based solutions. Then technicians will separate the pages with scalpels; “float” the pages onto screens and then individually dry the pages. The final process would be a process to remove the major curves and wrinkles from the pages (*reduces bulk*). This process is available at extra cost and is not included in our base work or pricing.
8. Documents that have been wet should be cleaned and sanitized. The treatment will be an application of an EPA registered biocide in the areas that visible mold is suspected or staining has occurred. This is a recommended treatment should be specified in the Scope of Work and pricing matrix. BM

9. BMS does NOT recommend just freeze drying of wet documents. Cleaning and sanitizing is always recommended. Class one water losses the cleaning and sanitizing can be minimal but it should be done!
10. The documents should be stored in a building with the relative humidity less than 50% to minimize the likeliness of mold amplification.
11. When documents are returned and staff personnel start to handle the papers the quantity of airborne particulate of paper fiber is high due to staff trying to pry papers apart, extensive handling of papers and the fact that the papers may be somewhat more fragile. The staff should have increased air flow and filtration when handling extensive amounts of documents; consider wearing gloves and possibly a dust mask or N-95 respirator.
12. Documents exposed to class 3 "black water" should be sterilized via Gamma Radiation. This includes sewage water, river water, water from area wide flooding and documents that have been wet for extended periods of time.
13. Documents that that have had extensive contamination and are going back into a health care setting where there is open wound care should also be sterilized via Gamma Radiation.

STERILIZATION of DOCUMENTS

There are three options for sterilization: heat, chemical and radiation.

HEAT:

(d) Typically one bakes materials in the an oven at

- (i) 171°C (340F) for at least one hour
- (ii) 160°C (320F) for at least two hours
- (iii) 121°C (250F) for at least 16 hours

CHEMICAL:

Sterilants are specialized chemicals, such as glutaraldehyde or formaldehyde, which are capable of eliminating all forms of microbial life, including spores. The term sterilant conveys an absolute meaning; a substance can not be partially sterile.

Some species of pathogenic bacteria are capable of adapting to hostile conditions by forming a thick outer and chemically impervious shell. They transform from their normal or vegetative state to form spores and are difficult to eliminate since they can resist the effects that sanitizer or disinfectant exposures have on bacteria. Elimination of spores is carried out by specialized chemical agents or physical means, and requires several hours for total microbial destruction.

Some of the factors requiring consideration are whether they are the easy to kill bacteria in their vegetative state or whether they are present on the surface as highly resistant spores. A major consideration that also needs to be addressed is whether other materials such as blood, feces or organic matter are present within the bacterial environment. These contaminants reflecting an unclean surface can rapidly inactivate some germicides, such as hypochlorites, rendering them ineffective for their intended use.

RESISTANT BACTERIA AND SUB-LETHAL SANITIZER DOSAGE

In any given population, bacteria exist within a wide range of sensitivities towards a specific sanitizer dose. Under normal conditions of exposure, sanitizers are capable of destroying 99.999% of the bacteria present. In essence, a surface which initially harbor 1,000,000 bacteria per square centimeter prior to sanitation may be expected to contain only 10 microorganisms per square centimeter afterwards. In such a scenario, the objective of the sanitation process has been achieved in the sense that the total bacterial population has been reduced to safe levels.

What may not be as evident is that the remaining 10 surviving microorganisms capable of withstanding the sanitization procedure have the potential to act as a source of future contamination. If on subsequent clean up and sanitization, proper dosing or procedures were not adhered to, or the surface has not been adequately rinsed, the 10 surviving bacteria will survive a second cycle of sanitization, as will other bacteria. Over a period of time and involving several cleaning and sanitization cycles, the resistant survivors have the capacity to proliferate, especially during periods in which they are exposed to food product. When this occurs the food processing plant is now dealing with a bacterial population which no longer responds to sanitizing doses of germicide, resulting in a failure of the sanitizer to achieve its objectives. In essence by applying the sanitizer at less than lethal doses or for shorter intervals, the end result is the same as if selective culturing of a resistant strain had been carried out with the possibility of the surface becoming enriched with pathogens and hard-to-kill microorganisms.

A surface which is allowed to deteriorate to such a level of poor hygiene needs to be "shocked", by switching to high doses of an alternate product such as hypochlorite and dosing at disinfectant levels. It is not uncommon to require the use 400+ ppm of available chlorine over a period of a week before the surface can be returned to the desirable and bacterial free state.

BIOFILM FORMATION

Biofilm formation is another mechanism, in which bacterial resistance towards a sanitizer can occur. As previously indicated, proper cleaning is essential before effective sanitization can occur. Certain bacteria secrete a polysaccharide which is a constituent of their membrane. These secretions are very sticky and attach themselves firmly to metal surface. The resulting film so formed containing trapped bacteria is referred to as a biofilm. Bacteria which are responsible for biofilm formation may in themselves not be harmful or pathogenic. However, the gelatinous matrix which they excrete is capable of attracting to itself and embedding pathogenic bacteria, such as *Listeria monocytogenes*. Although the pathogens themselves do not contribute towards the integrity of the film, they nevertheless are capable of contaminating products which come into contact with the surface.

Biofilms are often very difficult to remove, since their matrix is very resistant to chemical attack by detergents. They often require higher than normal concentrations of alkaline detergents and strong oxidizing levels of sodium hypochlorite in order to remove them. Several applications may be required before the biofilm can be totally removed.

RADIATION: (all information is provided from Sterigenics)

For over forty years, Gamma Radiation has been highly regarded as a safe, cost-competitive methodology for the sterilization of healthcare, products, components and packaging. Today, spurred in large measure by its compatibility with single-use,

disposable medical devices, Gamma Radiation is being used by an ever increasing percentage of the healthcare industry. As a result, Gamma Radiation, which once accounted for only 5% of the sterilization market, has grown to nearly 50%.

Simplicity and reliability, along with budget sparing cost-effectiveness, are the driving factors behind the industry's conversion to Gamma Radiation.

The Nature of Gamma Radiation

A form of pure energy that is generally characterized by its deep penetration and low dose rates, Gamma Radiation effectively kills microorganisms through out the product and its packaging with very little temperature effect.

Penetrating Sterilization, Even with High-Density Products Gamma Radiation is a penetrating sterilant. No area of the product, its components, or packaging is left with uncertain sterility after treatment. Even high-density products, such as books and paper files can be successfully processed.

The source of the radiation is Cobalt 60. There is no residue after the process and there are no visible changes to the documents.

When to use this process?

- Black water-particularly sewage.
- Area wide flooding with dirty water.
- Documents that have been submerged in water for a long period of time.
- Documents going back into a healthcare setting. In particular to hospitals or patient offices with open wound care.
- Situations where there are extreme employee concerns over safety of handling the documents.
- Irradiation will *eliminate* microbial hazards.
- The process will bring the documents to *near sterility*.



BMS CAT

1.800.433.2940
www.bmscat.com

- Destroys E. coli O157:H7, salmonella, Listeria, etc.
- Safer than pasteurizing milk.
- Entire boxes of documents are evenly sterilized.
- The source of radiation is gamma Cobalt 60.

FREEZE DRYING OF PAPER DOCUMENTS (WHY AND HOW)

BACKGROUND:

The vapor pressure of water at 100°C is 760torr (1 atmosphere).

The vapor pressure of water at 0.0099°C is 4.579torr (triple point).

The vapor pressure of ice at 0.0099°C is 4.579torr (triple point).

The vapor pressure of ice at - 20°C is 0.776torr

The vapor pressure of ice at -25°F (-31.7°C) is 0.286torr [refrigerated warehouse]

BODY:

In consideration of all of the above, dehydration is accomplished faster at 100°C and in an open vessel. Baking wet documents in an open oven will certainly dry them at the fastest rate. Unfortunately, it is the liquid phase of water that is most damaging to paper and the graphical and printed media upon it. The cross-scission and cross-fusion of paper is rapidly destroyed by water. Also, most writing pen inks are water soluble. Drying water soaked paper at atmospheric pressure is not practical. This conclusion is determined without further consideration of the mold and fungus growth potential.

Freezing water soaked paper stops the mechanical disintegration of the paper, the dissolving of inks, and the potential for mold and fungus growth. Once frozen, paper can remain in this state indefinitely and can be transported via any refrigerated means.

The dehydration of frozen, water soaked paper via sublimation is slower than rapid evaporation from the liquid phase, but causes the least damage to the paper structure and content. The rate of dehydration via sublimation can be controlled by manipulating process parameters.

When ice is left in the open, evaporation takes place so long as the gas space around it can receive the water molecules or vapor. Therefore, if the gas space is continually maintained at a low pressure, it can continually accept more water vapor, hence the vacuum chamber and requirement for low pressure.

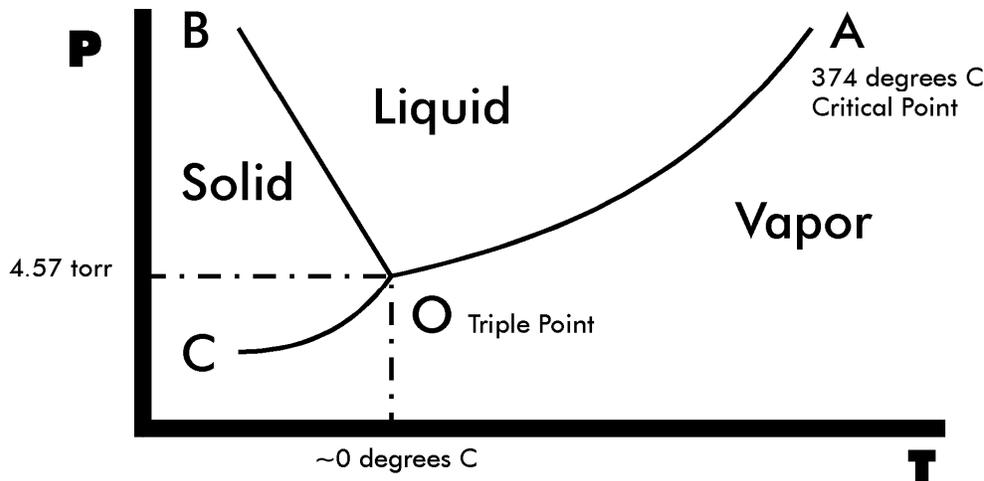
Sublimation is a phase change which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and by the process known as evaporative cooling, the temperature of the ice tends to get colder, thus the need for heat from outside the system (electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will rise, thus increasing the rate of sublimation.

Low pressure and a surplus of heat (energy) are essential for this process. However, when the pressure reaches 0.100torr (prox) the process becomes adiabatic (without loss or gain of heat). And; the process is truly optimized, since all of the electric heat added works to raise the temperature of the ice and not to support sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid and gives up its latent heat as sensible (apparent) heat, thus the need for refrigeration. And; as the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

The optimum controls are 1) pressure at or below 0.100torr and 2) an ice temperature close to the triple point temperature (-0.1°C).

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for Water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid, or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr

(point O), water can exist in only two states - solid and vapor (depends on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states, solid, liquid, and vapor. Since all the damage to paper is done by the liquid phase of water, keeping the pressure below 4.57, prevents further damage while allowing the ice to sublime (go directly to vapor). The process of freeze drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr, and adding heat to warm the documents and cause sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber. Periodically, the cold trap is isolated from the chamber, the refrigeration cycle is reversed to heat the coils, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are several cold traps operating "push pull" - while one trap is in defrost; the other is still connected and removing water. Point A, at 374 degrees C is called the critical temperature of water. Above this temperature water exists only as gas and no amount of pressure can reduce it to liquid.

The basic process consists of immediately inventorying and freezing wet paper documents to stop the damage. If not checked, the damage mechanisms due to the liquid phase of water cause swelling of the volume to the point that bindings split, paper cockles, pages block (stick), water soluble inks run, and fungi can grow rampant.

The frozen documents are placed into the computer controlled freeze dry chamber where they are dried in such a way that water never enters the liquid phase again to cause more damage. Any deviation of the process will cause an alarm to the operator, even after normal working hours. The theory of the process is described above.

One important fact to note is that freeze drying does *not reverse damage*. ***Speed is of the essence*** in freezing the damaged documents. The freeze dry process is recognized as the most efficacious method of recovering wet books with minimal damage. "Slick" surface paper (sizing) is the paper most likely to block with the pages sticking together. Freeze drying is the *only* process which can save this type of paper. Once blocking occurs, there is no effective way to unblock.

Freezing paper and freeze drying insures maximum recovery possible in the face of a disaster.



DAILY UPDATE

Customer Name
Address
City, State, Zip

TODAY'S DATE:

00/00/2019

SIGNIFICANT CHANGES OF SCOPE, SCHEDULE OR COST:

Insert text here

PROJECT NUMBER:

00000000

CLAIM NUMBER:

00000000

PROJECT DIRECTOR:

Insert Text Here

PROJECT MANAGER:

Insert Text Here

FIRST DAY OF PROJECT:

Insert Text Here

ESTIMATED PROJECT COMPLETION DATE:

For Mitigation:

For Reconstruction:

LOSS PHASE:

Insert Text Here

DAILY PROGRESS NOTES:

- Insert Text Here
- Insert Text Here
- Insert Text Here

ANY UNFORESEEN INTERRUPTIONS/DELAYS:

- Insert Text Here
- Insert Text Here
- Insert Text Here

PLANS FOR TOMORROW:

- Insert Text Here
- Insert Text Here
- Insert Text Here

EQUIPMENT & PERSONNEL COUNTS (APPROXIMATE):

- Insert Text Here
- Insert Text Here
- Insert Text Here

PROJECT SPECIFIC NOTES (client requests, site issues, etc.):

- Insert Text Here
- Insert Text Here
- Insert Text Here

Micro Film (microforms) Recovery Protocol©

FILMBASES:

Most microforms will have film bases of cellulose acetate or polyester. Cellulose acetate film, touted as safety base film and non-flammable, will still naturally degrade over time. This degradation process is accelerated when acetate film is not properly stored. Polyester is the current film base. Both stable and durable, black-and-white polyester film has a long life expectancy.

MICROFORM TYPES:

Microforms come in a number of formats. The most familiar of these are 16mm or 35mm roll microform and microfiche, the latter resembling a plastic file card. Roll microform, in either 16mm or 35mm formats, can be cut into short strips and housed in clear "jackets" to produce a microfiche. The emulsion side of this film is matte, while the non-emulsion side is glossy.



HANDLING OF FILM:

Acidic oils and fingerprints can damage film. BMS technicians will be cautious when handling microforms. Films will be handled by the edges or leaders.

EMERGENCY STABLIZATION:

Once wet, microforms must not be allowed to dry or they will stick to together and to the enclosures. BMS CAT will keep the microforms wet until each batch is ready to be processed.

RECOVERY PROCESS:

- ↗ Microform will be inspected for any evidence that they are sticking.
- ↗ When evidence shows they are sticking they will be immersed in a solution of de-ionized water to soften the emulsion. No effort to separate the Microform shall occur at this time.
- ↗ When the emulsion has adequately softened the Microform will be separated. It is important to note that some sticking of the Microform is irreversible. Meaning that the two surfaces have bonded with each other and the emulsion will not soften enough to separate the Microform without damaging the bonded section.
- ↗ Microfilm will be processed in BMS CAT's proprietary microfilm processing machines. MS CAT has worked with Kodak technicians to adapt Kodak microfilm processing equipment for emergency recovery. BMS also uses and has adapted Kodak chemicals. The following is a summary of some of the steps the microforms will go through:



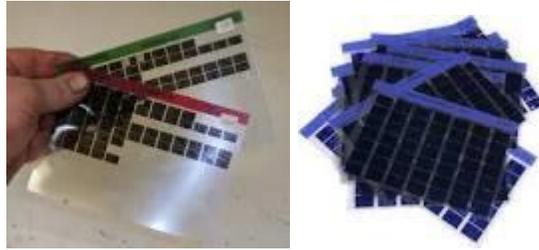
- Wetting and cleaning solution of surfactants to remove sediment and mold spores.
- Wetting solutions of de-ionized water anti-microbials to rinse and sanitize.
- Kodak Emulsion wetting stage and resetting stage. This resets the film emulsion and helps hide scratches.

- During all of the above stages the microfilm passes through a series of rollers and squeegees to ensure that all surfaces areas are uniformly processed.



- Dry air stage to dry the Microform.
- Re-wound onto the reel.

↗ Microforms (non rolls) such as jacketed fiche will be cleaned following the above protocols. They may be cleaned by hand process or mechanically assisted. However, the outcome will be the same as the above.

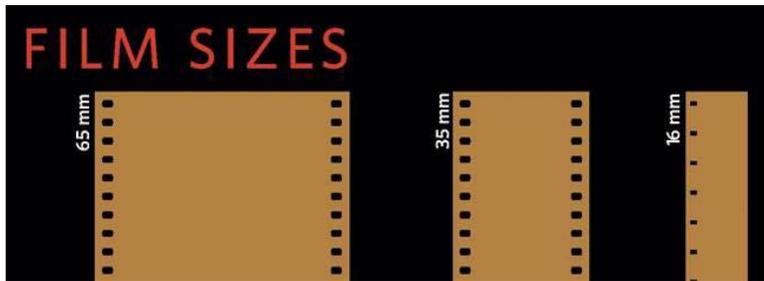


↗ Microfilm and microforms will be checked for quality control on a sampling basis.

Movie Film Emergency Protocol and Processing Procedures ©

FILMBASES:

Current movie film is made out of a polyester base substrate. This is the carrier that the film emulsions will be layered on. Film prior to 1950 could be made out of cellulose nitrate. Cellulose nitrate material is very unstable and very flammable. Cellulose acetate film (introduced in 1950, touted as safety base film and non-flammable, will still naturally degrade over time. This degradation process is accelerated when acetate film is not properly stored. Both stable and durable, polyester film has a long life expectancy.



Movie Film 65mm & 70 mm

For projection, the original 65 mm film is printed on 70 mm (2.8 in) film. The additional 5 mm are for 4 magnetic strips holding six tracks of sound. Although more recent 70 mm prints use digital sound encoding, the vast majority of existing and surviving 70 mm prints predate this technology.



Color Film

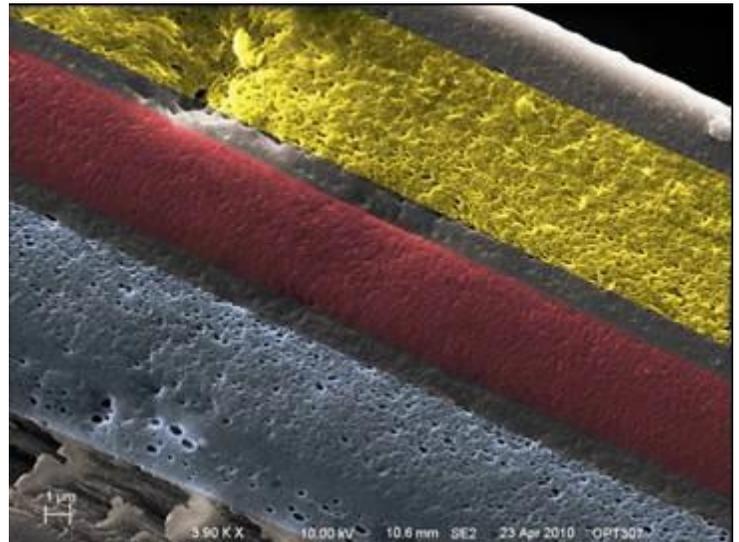
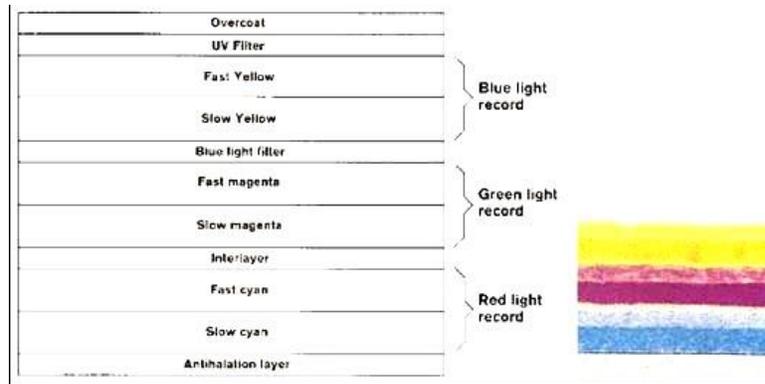
The upper green-sensitive layer contains a colorless coupler that is converted to magenta dye during development, proportional to green-light exposure. The next emulsion layer is red-sensitive and contains a colorless coupler that forms a cyan dye, proportional to red exposure.

The bottom emulsion layer is blue-sensitive, and contains a colorless coupler that forms a yellow dye, proportional to blue exposure. The conductive anti-static layer and scratch resistant T-coat with lube are process surviving and retain their properties after processing.

Developing techniques have evolved and been modified over the years for this type of color movie film. Previously it was thought that the best way to “clean” an old movie film was to simply reprocess it through the entire film development process. As if the film was undeveloped. This method would certainly clean it. However, Kodak found a change in density of the film due to the over the exposure of the film would occur, resulting in some loss of certain color pigments.

Based on previous experience BMS does NOT completely reprocess the film with all of the traditional chemicals and steps. BMS will wash the film, perform a final rinse (with the appropriate Kodak replenisher solution) and dry the film in a temperature controlled environment. This will result in a clean film with no degradation of the film quality. BMS has worked closely with former Kodak film technicians with 35+ years’ experience to fine tune this process.

Also, another older technique that was employed was lubrication of the film by waxing processes. This was generally done on the edges of the film. Should that process have previously been used, the processes we are using should not remove the wax lubricant. Waxing was recommended for films that were used extensively. For archival purposes we do not recommend utilizing the wax process. Therefore, BMS CAT will NOT add a lubricating

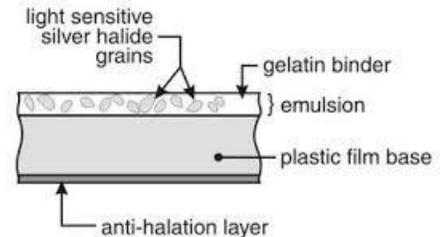


wax process in our processing of movie film.

BMS CAT has extensive experience in processing MASTER copies of movie film

Black & White Film

The emulsion of raw black-and-white motion picture film contains silver salts that are converted to metallic silver particles during processing. With black-and-white stock, the emulsion side of the film appears duller and more textured than the shiny and smoother base side. When properly processed and stored, silver images are very stable.



35mm Film

In 1889, celluloid-based transparent, flexible 35mm film was invented by the Rev. Hannibal Goodwin. His invention was promoted by George Eastman on a wide-scale for commercial use. IN 1907 the Academy of Motion Picture Arts and Sciences officially made 35mm the industry standard.

In 1948 Kodak introduced the 35mm triacetate safety base film to replace the flammable cellulose nitrate base. This process was completed in 1952.

There are many variation of this film known as 2-perf, 3-perf, 4-perf, Super 35, Panavision Super 35, Superscope and different lengths, etc.

8mm, 16mm Movie Film

The film gauge most frequently found in American archives, libraries, and museums is **16mm**. Corporations adopted 16mm as a convenient gauge for employee training films. Soon an industry developed for producing 16mm instructional and educational films for businesses, schools, churches, and clubs. With the advent of portable video equipment in the 1970s, many 16mm users began switching to video. Thus, most 16mm films in archives, libraries, and museums date from the 1920s through the early 1980s.

8mm film was for consumers and oftentimes was in a cartridge. Most other film was in reels. These films are in archival repositories as well.

HANDLING OF FILM:

Acidic oils and fingerprints can damage film. BMS technicians will be cautious when handling movie films. Films will be handled by the edges or leaders. Gloves will be worn

when appropriate. The film will be kept refrigerated until stabilization or processing is performed.

Archival film can become brittle. If there are film breaks BMS will splice the film together with the appropriate materials and methods.

EMERGENCY STABILIZATION:

Once wet, movie film **must not be allowed to dry** or they will stick to together and to the enclosures. BMS CAT will keep the microforms wet until each batch is ready to be processed.

The recommended field emergency procedure is to line sturdy boxes with double plastic bags. Place the movie film inside the plastic bags. Pour ½ quart of distilled or de-ionize water over the films. Seal the bags tight. Seal the box securely and prepare for shipping. Store refrigerated if possible before shipping.

Mold on Film:

A film stored under humid conditions can become a host for mold, mildew, and fungus. Generally the organisms start the attack from the outside edge and make their way into the film roll. These biological agents can cause significant damage to the emulsion.

The growth initially appears in the form of matte-white spots and eventually grows into a lacy, web like pattern. Once the organisms have eaten into the emulsion, however, the image loss is irreversible. BMS CAT can stop this degradation and contamination by processing the film on our Kodak film processing equipment with EPA registered biocides added to the process. It would be recommended then to store the film in a cold and dry environment.



RECOVERY and PROCESSING

- ↗ Movie film will be inspected for any evidence of sticking.
- ↗ When evidence shows they are sticking the will be immersed in a solution of de-ionized water to soften the emulsion. No effort to separate the movie film shall occur at this time. There are other techniques that can be used to release movie film that has slight sticking. These techniques are proprietary but they are in accordance with industry standards.

↗ When the emulsion has adequately softened the movie film will be separated. It is important to note that in some cases sticking of the movie film is irreversible. Meaning that the two surfaces have bonded with each other causing a chemical reaction and the emulsion will not soften to separate the movie film without damaging the bonded section. I may be able to be pulled apart but there will be a damaged section of film. It will be playable with a loss of visual and audio media at that section.

↗ Movie film will be processed in BMS CAT's proprietary Kodak movie film processing machines. MS CAT has worked with Kodak technicians to adapt Kodak film processing equipment for emergency recovery and processing. BMS also uses and has adapted Kodak chemicals. The following is a summary of some of the steps the movie film will go through:

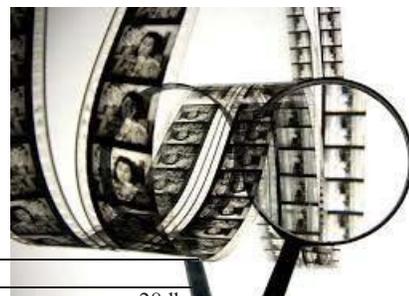
- Wetting and cleaning solution of surfactants to remove sediment and mold spores.
- Wetting solutions of de-ionized water anti-microbials to rinse and sanitize.
- EPA registered biocides are added when appropriate.
- Kodak Emulsion wetting stage and film emulsion resetting stage. This resets the film emulsion and helps hide scratches.
- During all of the above stages the film passes through a series of rollers and squeegees to ensure that all surfaces areas are uniformly processed.
- Dry air stage to dry the movie film.
- Re-wound onto the reel.



↗ Movie film will be checked for quality control on a sampling basis.

Film Width, Type, Lengths and Weights

70 mm Print Films	Color	2500 ft	2	
65 mm Camera Films	Color	1000 ft	2	
65 mm Intermediate Films	Color	2500 ft	1	28 lb
35 mm Camera Films	Color/B&W	200 ft	20	27 lb
		400 ft	10	26 lb
		1000 ft	5	30 lb
		2000 ft	3	34 lb
35 mm Intermediate Films	Color/B&W	400 ft	10	24 lb
		1000 ft	5	29 lb



References:

-  **Kodak**
-  **National Archives and Records (NARA)**
-  **Library of Congress**
-  **Association of Movie Image Artists (AMIA)**
-  **The Society of Motion Picture Television Engineers**
-  **Internet Encyclopedia of Cinematographers**
-  **The National Film Preservation Foundation**

BMS CAT

Project Scope and Process

PERIOD OF PERFORMANCE: One (1) year from Effective Date of contract with four (4) successive one-year renewal options (or as negotiated).

X. BACKGROUND: George Mason University has an estimated enrollment of 36,000 students. The Mason Libraries consist of many libraries under one administration. The main library, Fenwick, and Gateway Library in the Johnson Center, as well as the University Records Center in the Facilities Warehouse are located on the original campus in Fairfax City. The Arlington Campus Library is located at 3401 N. Fairfax Dr., Arlington and the Mercer Library at 10900 University Blvd., Manassas. The library physical holdings consist of approximately 1,245,000 volumes, including approximately 156,000 bound journal volumes, and 310,000 government documents. In addition, there are 215,000 cartographic materials, 16,000 musical scores, 2,100,000 microforms, 24,000 audio and 32,000 film and video materials. The University collections' estimated value is in excess of \$100 million dollars and include irreplaceable historic, cultural, and research property. The annual budget for materials is over \$9,800,000, of which over 75% goes toward electronic resources.

There have been incidents of water intrusion in all campus buildings housing library collections (Fenwick, Mercer, Arlington, and University Records Center) in the past that have impacted the libraries' materials as well as donated materials requiring remediation before entering the building so as not to cross contaminate.

XI. STATEMENT OF NEEDS: The contractor shall furnish all labor, materials, and equipment as necessary to provide "as needed" emergency library disaster recovery services, including, but not limited to:

- on-site assessment of damage resulting from one or more natural or man-made catastrophic events.
- stabilization of building environments to minimize damage to collections resulting from mold growth.
- careful handling and secure removal of damaged library materials, papers, and research materials from disaster sites.
- environmentally controlled, round-trip transportation to appropriate storage venues for subsequent freezing, air drying, vacuum freeze drying, or shipping to firms for single-item conservation treatment, as appropriate.
- cleaning or smoke removal.
- building refurbishment.
- relocation of treated collections within their appropriate facilities.
- other related services as may be required to responsibly recover material owned by George Mason University Libraries.

This contract is primarily intended for use on mostly paper-based library or archival materials including, but not limited to, books and papers, manuscripts, administrative or other records and photographs. May also include microforms, films, videos, CDs or floppy discs, but not intended for recovery of electronic files or equipment, such as PCs or servers.

This contract is not intended for other conservation services, such as paper repairs, de-acidification or rebinding, services such as roof repair, plumbing or electrical work, mold abatement of buildings or services deemed to be hazardous in nature, such as asbestos abatement.

In addition to the stabilization, recovery, and cleaning of collection material, the cleaning of storage furniture (e.g., shelving, map cases, gasketed cabinets, etc.) and furniture (e.g. reading room tables, book carts, etc.) is within the scope of this contract.

In this contract, the University refers to stabilization as those activities that remove damaged materials from the disaster site and stabilize them for subsequent recovery efforts. Stabilization activities may include removal from emergency area, drying of collections in place, transportation to an off-site stabilization facility, or freezing of wet collection material. Recovery is defined as those activities that enable the material to be returned to its former condition or at a minimum be made fully accessible again on sanitized furniture in appropriate housing.

A. SERVICE RESPONSE REQUIREMENTS:

1. As part of the emergency response, describe how the Contractor shall:
 - a. Be reachable 24 hours/7 days a week/365 days a year to respond to a call for services.

BMS CAT Responses are in bold letters.

BMS CAT is a 24/7/365 company. GMU would have a dedicated national account manager, local account manager, along with a call center to support calls at any time. This is the core of our business.

b. Respond to disaster scene as soon as possible but no later than within 12 hours of being contacted by the Contract Administrator or their designated representative to assess the condition of the collections and work.

BMS CAT would be able to conduct a site assessment within 12 hours of the event. With our local office located in the WDC region, this will ensure a rapid response.

c. Be responsible for assigning sufficient personnel to the performance of this contract to ensure timely completion of all requirements. **BMS CAT will have operationally experienced staff available for a quick plan of action that will be provided within the 24 hours. Many times, our staff is able to provide guidance immediately.**

d. Have scalable capability and resources (e.g., facilities, manpower, management, equipment, supplies, transport, freezers, and logistics) to manage all types of emergencies that may affect the University collections regardless of size.

BMS CAT has a large staff of qualified document cleaning professionals. This staff is dedicated to this function and does not work on other jobs – they are document cleaning professionals. The project manager assigned to the job will be responsible for ensuring the timely completion of the job. BMS CAT will plan for labor and materials at appropriate levels to meet work requirements in the specified time limits. BMS CAT's core principles include quality work, and our processes are developed to do just that.

e. Have the experience, qualifications, and expertise to provide professional and standard methods of handling, stabilizing, packing, transporting, treating and rehousing, labeling and tracking (including the use of bar coding) the full range of library and archival materials in disaster situations. *** See narrative below**

f. Have the experience, qualifications, and expertise to provide professional and standard methods for mold remediation and other decontamination of collections and storage furniture. **BMS CAT is a leader in water & fire restoration as well as mold remediation and can provide those services to GMU as needed.**

g. Have all staff with the necessary qualifications and skills or shall have a network of vendors in place for additional resources. However, while some parts of the stabilization operations may be sub-contracted (for instance, to provide for increased freezer storage space), the coordination and majority of stabilization operations are expected to be conducted by the Contractor. All subcontractors for treatment or stabilization or housing must be agreed upon by Mason - see also Section XVI – Special Terms and Conditions. **BMS CAT complies.**

h. Have adequate numbers of trained staff with the skills and experience to assess and sanitize (i.e., clean, disinfect, kill mold, and remove rust and other stains) designated storage furniture including shelving, map cases, and gasketed cabinets.

BMS CAT staff is trained to professionally and carefully handle damaged library collections. Our long list of references above attests to the fact that we have worked on many delicate document jobs over the years. We have a protocol for stabilizing damaged media quickly.

i. Use climate-controlled, secure facilities. The Contractor is responsible for all aspects of security for Mason's materials in storage.

j. When specified by Mason, pack, ship, and store materials in protective totes and pallets (or other containers subsequently specified by Mason) that are clearly marked according to a numbering and tracking scheme approved by Mason.

k. Manage the total work effort associated with the required services to meet all objectives. Such management includes but is not limited to planning, scheduling, cost projecting and accounting, establishing and maintaining documentation and records, report preparation, and quality control.

l. Implement all necessary work control procedures to ensure timely accomplishment of work, as well as to permit tracking and reporting work in progress.

m. Establish and maintain an internal comprehensive Quality Control program. The QC program will apply to all services rendered.

n. Maintain consistent, professional, and responsive communication throughout the project.

2. As part of the stabilizing collection material, describe how the Contractor shall:

- a. Provide professional advice to the Contract Administrator or his/her designated representative on the most practical and efficient options for the stabilization and recovery of the collections and storage systems within 36 hours of being contacted (or within 24 hours after the site visit). **BMS CAT complies to all of the above requirements.**
- b. Provide expert consultation on site to assess the condition of the collections and work with Mason's preservation experts to determine the type and amount of stabilization effort required as soon as the affected site is accessible.

BMS CAT has the ability to provide expert consultation on-site to assess the condition of the collections and work with the library experts to determine the type and amount of stabilization effort required as soon as the affected side is accessible. BMS CAT does hundreds to thousands of document jobs per year and can provide expert consulting and results. This is not a side business or outsourced service like some other restoration companies.

- c. Provide all trained labor, experienced supervision, approved material and supplies, and agreed upon equipment needed for cleanup in response to emergency calls at any of the Mason libraries.
- d. Collaborate with Mason staff to create a stabilization plan documenting stabilization priority based on a variety of factors including type and extent of damage, type of material, rarity and/or importance of material, and outlining the methods to be used for retrieving, stabilizing, packing, and transporting designated damaged materials. To the extent possible, identify and inventory all affected materials and keep materials organized.

BMS CAT has professional staff and equipment for quick clean up. Our core business is responding to emergency calls. BMS CAT staff is trained to handle damaged library collections professionally and carefully. Our long list of references above attests to the fact that we have worked on many delicate document jobs over the years. We have a protocol for stabilizing damaged media quickly.

BMS CAT has the ability to provide all necessary secure space, transportation, labor, equipment and supplies to respond immediately to a variety of needs, including water extraction, library, archival, and/or museum collections stabilization.

BMS CAT will not commence work or use any treatment methods that are not first approved by GMU. BMS CAT will obtain approval from GMU before using any methods or treatments, repair, etc.

- e. Be able to provide a stabilization plan on very short notice, striking a balance between the need for urgently removing affected collection material and doing so in a coordinated and well-thought-out manner.
- f. Collaborate with Mason preservation and curatorial staff, provide stabilization activities that result in proper packing and transportation of all materials being moved to temporary Contractor facilitated off-site storage location for stabilization or treatment.
- g. Remove and stabilize materials in a timely manner to eliminate the risk of further damage to the collections. To the extent possible, the stabilization of materials should begin within 24 hours of the emergency and should be completed per the schedule outlined in the stabilization plan.
- h. Provide all labor, material, and equipment for the safe and secure stabilization and transportation including dry cargo transport trucks or freezer trucks as needed and packing supplies, pallets, and materials needed to secure palletized containers.
- i. Stabilize the affected collections items for transportation including providing all boxing, bagging, and other supports and containers necessary.
- j. Establish an inventory of all affected items removed from the affected space as they are removed from a collection area for stabilization and treatment.

BMS CAT will treat each job as a custom situation. Each job will have different types of media, quantity, and degree of damage to remediate. BMS CAT will put together a comprehensive plan with appropriate priorities to stabilize the materials that have been affected. We will work with GMU to determine priorities and incorporate those in our SOW. We will securely transport and track items so there is never a period of time where items cannot be located or retrieved on an emergency basis. At the time of plan, we will outline all details of proposed procedures, equipment, tools and cleaning materials.

BMS CAT has a bar code system to track all collection material as it is repacked, transported and stabilized. Our teams are trained in “Chain of Custody” processing to be sure that all materials are tracked and checked at each point of the project. The project does not continue until all materials are properly checked in at each point. BMS CAT will typically perform a duplicate inventory to ensure both systems match and account for each item.

BMS CAT utilizes an inventory system that gives each box a unique number that will become its own identifier. The inventory number will tell us the building, floor, office (or cubicle) and how many boxes were removed from each space. On both the box label and corresponding spreadsheet, there is a section for comments describing the documents.

k. Provide consistent tracking of all collection material as they are repacked, transported, stabilized, treated and returned to Mason, ensuring the ability to locate an item at any point in time of stabilization and recovery activities.

BMS CAT is very experienced in packing out customer media. BMS CAT will provide professional labor to box-up, bag, wrap, inventory, and track items for transportation. This is core to our service and something we perform on a weekly basis for our customers. This is not a side business or once a year service provided like some of our competitors may do.

BMS CAT is able to provide a detailed inventory along with a clear statement of all item treatments. As part of the inventory process described above, we are able to supply customers with a detailed description of the items placed in the restoration process.

l. Provide environmentally controlled transportation to appropriate storage venues for the stabilization and/or subsequent recovery of the affected collections items.

m. Provide secure freezer storage for the damaged materials in the event all available appropriate drying equipment is in use, or if the amount of material exceeds the Contractor’s drying capacity.

BMS CAT provides environmentally controlled trailers (refer trailers) for properly storing items for the stabilization and/or subsequent recovery.

3. As part of the recovering collection material, describe how the Contractor shall:

a. Collaborate with the Contract Administrator or his/her designated representative to create a recovery plan before the recovery operations begin. This document should contain a description of the estimated quantity, value category, and type of affected collections items, the comprehensive condition assessment of damaged collections, proposal for the safe and secure recovery of the collections, treatment proposals and documentation, rehousing and labeling plans, proposed recovery schedule, tracking system, proposed return schedule, and a detailed associated cost estimate. The plan must also include details of proposed procedures, equipment/tools, goods/materials to be used and the name(s) of the supervisor and staff that will complete the work along with the estimated cost for labor hours, equipment/tools, and goods/materials. If fewer than 1,000 volumes are affected, the final recovery plan should be submitted within 14 days; if more than 1,000 volumes, within 30 days.

BMS CAT will manage the entire work effort associated with required services. You will have an account manager and project manager assigned that will provide a statement of work prior to work commencing and periodic updates as the project is in motion. BMS CAT will maintain documentation, reports, and QC procedures.

The project manager assigned to the job will be responsible for ensuring the timely completion of the job. BMS CAT will plan for labor and materials at appropriate levels to meet work requirements in the specified time limits. BMS CAT’s core principles include quality work, and our processes are developed to do just that.

BMS CAT has a large staff of qualified document cleaning professionals. This staff is dedicated to this function and does not work on other jobs – they are document cleaning professionals. The project manager assigned to the job will be responsible for ensuring the timely completion of the job. BMS CAT will plan for labor and materials at appropriate levels to meet work requirements in the specified time limits. BMS CAT’s core principles include quality work, and our processes are developed to do just that. BMS CAT is dedicated to providing quality service to all our customers. As a service provider, our ultimate quality assurance is a satisfied customer. Our goals are set forth at the onset of the project in the Scope of Work and are set in conjunction

with the customer. Upon completion, the Scope of Work is reviewed for mutual acceptance. During the project, regular meetings are held with the customer and/or customer representatives. These meetings allow for our team to report on progress and share plans to continue toward project completion.

This system allows for us to follow the Shewhart Cycle, developed by Dr. W. Edwards Deming.

Plan: Establish objectives and processes required to deliver the desired results.

Do: Implement the process developed.

Check: Monitor and evaluate the implemented process by testing the results against the predetermined objectives

Act: Perform actions necessary for improvement if the results require changes.

PDCA is an effective method for monitoring quality assurance because it analyzes existing conditions and methods used to provide customers. The goal is to ensure that excellence is inherent in every component of the process. This also helps determine whether the steps being used to reach the project goals are appropriate for the time and conditions. In addition, if the PDCA cycle is repeated during each project, it helps improve internal company efficiency.

b. Be able to systematically document all stages of the stabilization and recovery activities with a particular focus on treatment activities using both paper-based and/or, upon request, film based and dynamic media.

3.3.2.5. Provide all labor, material, and equipment for the safe and secure stabilization and

c. Be equipped to provide specialized cleaning services as required to manage mold remediation, smoke and soot removal, and deodorization.

BMS CAT can do all that are listed above. We are a licensed mold remediation company but can also remediate smoke, soot, and do deodorization. We have an ozone room that will help with removal of odor along with cleaning. Further, if the odor is extreme, with GMU's permission, we can re-fit a chamber with specialized spray to remove odor.

3.3.3.3. Be equipped to, in a controlled and closely monitored manner, dry varying quantities of material exposed.

d. Be equipped to dry, in a controlled and closely monitored manner, varying quantities of material exposed to varying amounts of moisture through the use of drying methods such as desiccant, air-drying or vacuum freeze-drying, to determine when materials have reached normal equilibrium, and to ensure that all items are completely dry without exposure to the risk of over-drying.

e. Allow Mason to request recovery services separately from emergency response and stabilization services if Mason staff is able to perform the response and stabilization internally.

f. Transfer wet, frozen or dry collection materials to a new, dry box if this is approved by Mason. If there is significant damage to the original container, the Contractor must provide Mason with a proposed procedure to transfer materials to new containers maintaining original order. The Contractor may be required to provide folders, boxes and containers approved by Mason or Mason may choose to provide containers. The Contractor must retain all original documentation and accompanying materials and any label or information written directly on the container. **BMS CAT complies with all of the above requirements.**

g. If distorted, books may be gently re-shaped while wrapping and packing. When packing in boxes, pack volumes spine down or flat into boxes. Avoid packing very small volumes next to large volumes. If deemed necessary, volumes that have been shrink-wrapped may have shrink-wrap plastic removed to expedite drying. Volumes to be transported that are too large for boxing in standard 1.2 cubic foot containers may be stacked flat on pallets, supported by thick cardboard sheets inserted between layers. **BMS CAT complies with these requirements.**

h. Provide documentation including a signed manifest documenting all materials leaving any Mason facility. The Contractor must provide prompt notification upon receipt of shipment and inventory tracking while in the Contractor's facility. **BMS CAT complies with these requirements.**

i. Physically secure collection materials to the truck interior to ensure that the containers and pallets do not shift during transit. All collection materials must be kept within original boxes or enclosures unless the Preservation librarian or designee approves transfer to new boxes or enclosures. Materials must be retained in the same order as received and must not be commingled with any other materials at any time.

j. Be equipped to recover a range of materials including but not limited to:

- Bound volumes (including rare volumes on parchment, pith, vellum)
- Books and other publications incorporating plastics and modern materials
- Digital recordings (including CDs, DVDs, Optical Discs)
- Flat photographic prints, negatives, and direct positives on paper, film, glass, and/or other supports (including metal, leather, ceramics, etc.)
- Microfilm rolls and fiche
- Motion picture film
- Magnetic media (including audio, data and sound recordings)
- Oversized records (including architectural drawings and plans, cartographic records including maps, and posters)
- Papers (including manuscripts, musical notations, unbound pages, etc.)
- Video recordings (including DVDs, digital recordings, and magnetic media)
- Artifacts (including ceramics, musical instruments, paintings, sculpture, and textile memorabilia, etc.)
- Audio recordings (including CDs, phonograph discs, digital sound, magnetic media, and wax cylinders)

****See Narrative below.**

k. Mason collection material may be frozen in transit or at the Contractor's facility. When materials are to be frozen, the Contractor must provide assurance to the Mason representative that the materials in the interior of the pallet have been frozen within the specified timeframe. Documentation of temperature in the interior is sufficient. The temperature of the freezing facility must be monitored and documented. Cycling the temperature within the freezing facility is unacceptable. **BMS CAT complies with these requirements.**

l. Use freeze-drying equipment using a 24-hour computer-monitored vacuum freeze-drying process to return the moisture content of water-damaged materials/holdings to single digits (5-8% preferred). During vacuum freeze-drying, materials will be frozen to a temperature of at least -25°F. The Contractor must provide data to Mason documenting the conditions to which materials have been exposed, and the duration of these conditions. **BMS CAT complies with these requirements.**

m. Outline methods and materials and/or storage systems for sanitization if biological growth and/or residues exist that are potentially harmful to users of collection materials or collection storage systems.

n. Describe methods for dealing with the following types of materials:

- Oversize materials such as maps and cartographic materials
- Flat photographic materials (printed on paper, film and/or other supports e.g., metal, glass, etc.)
- Microfilm rolls
- Motion picture film
- Tangible digital media (videotape, audio tape, etc.) and digital recordings (CD, DVD, Optical Disc, etc.)

o. Describe methods for consulting with Mason's Director of Special Collections Research Center (SCRC) or the designee if possible before recovering the SCRC materials (unique, rare or otherwise valuable collection material). The SCRC Director or designee shall authorize by written approval the Contractor's procedures for freezing or air-drying of these materials. The SCRC materials must remain at the same level of wetness as found until appropriate procedures have been determined and authorized.

BMS CAT has the capability to separate materials during the drying process to ensure they dry completely without sticking. Materials will be deemed at risk before being frozen or put in to freeze-dry chamber, so we are able to properly remediate them.

BMS CAT has capabilities to do basic repair work to materials. If damage is beyond our scope or ability to mend documents, we do have a partner called NEDCC that is able to provide assistance or guidance. NEDCC will not be contacted unless we have prior consent from GMU.

BMS CAT has capability of sanitizing and cleaning records from mold, mildew, soot or sewage. BMS CAT typically uses Microban as an agent to sanitize records. Gamma irradiation is also an option on materials that would require sterilization. Please see our document cleaning white paper that is attached for any other technical details.

4. As part of return of collection material, describe how the Contractor shall:

- a. Be able to, when treatment is completed, carefully pack dried materials separated by format and library location, in appropriate secure, non-damaging containers and ship/deliver them back to Mason. SCRC materials must be packed separately.
- b. Use bar coding to manage the inventory, tracking, shipping, and shelving process to facilitate tracking and reporting.
- c. Submit a close-out report, summarizing all actions taken by the Contractor as part of a Task Order. This report may summarize the emergency event and all associated activities, based on documentation produced through the previous documents, or may summarize recovery activities conducted under a separate Task Order. **BMS CAT complies with all of these requirements**

BMS CAT provides services for the stabilization and recovery of your library collections. We have the largest freeze-dry chamber capacity in the United States.

When papers and books are wet, freeze drying via sublimation is the best and fastest way to salvage them. Papers and books can be wet from a variety of circumstances, such as broken water pipes, a roof torn off during a tornado, area wide flooding, etc. Often many of these papers and books may become submerged under water, contaminated with a variety of debris and sustain substantial damage. The dilemma for the owner of these documents and books is what to do and who to turn to. BMS CAT looks at all aspects of its operation to find the most efficient and cost-effective way to operate. Our operations department continually seeks out the best price and process to achieve maximum efficiency. Additional labor, if needed, is acquired through national labor companies to get ensure cost-effectiveness. Through our in-house travel coordinator, Blackmon Mooring & BMS CAT negotiates airline tickets and hotels when they are required for our people. During areawide disasters we will work with local companies for food services and for lodging. In today's environment preserving documents for business and historical purposes is not only a need, it is often the law. Retention of records is required in many cases for decades. Additionally, some documents may have historical value to an organization and they want to preserve these permanently. Often, these materials are highly secure and confidential. Documents and books that have become wet, moldy or have debris such as soot, can be recovered while in a secure environment.

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and transported via any refrigerated means.

Our technology allows for:

- Book and document drying
- Document freeze-drying
- Microbial removal
- Document recovery from fires, floods, rodent or insect contamination
- We can recover a range of data that years ago would have been considered a total loss:
- Documents, Books and Vital Records
- Movie film and videotape, audio tape, x-rays, microfilm and specialty media
- Hard disc and CD recovery
- Special Collections and Museums

Documents, Books and Vital Records:

BMS CAT can handle the paramount recovery of corporate information assets following a disaster. These assets may take multiple digital and paper forms. We are trained to work with discretion for small or large projects and keep you compliant with current laws and regulations that may affect your industry. Our freeze-drying chambers allow for the quickest processing time to remove water/excess moisture from papers and collections.

Media Recovery:

BMS CAT provides recovery services for X-rays, microfilm, and microfiche. Additionally, we routinely handle damaged photographic media, multiple forms of tape media, audio, disks and optical media that have been affected by water, smoke, and other contamination. All of these media respond well to the sublimation freeze drying process when wet.

Information Security:

With laws such as HIPAA and the Sarbanes-Oxley Act, the proper security and maintenance of business information are critical and a legal priority. Throughout the information recovery process, we take extra measures to provide thorough security.

Government Records:

BMS CAT often works on high-security and classified information recovery projects and offer sound restoration solutions within these constraints. We consider and address the need for government agencies to protect their information while still meeting the expectations of their constituencies.

Special Collections, Libraries, and Museums:

We have worked with libraries as well as numerous art, historical, scientific and industrial museums on recovery projects. We've intricately handled artworks, archival materials, biological specimens and three-dimensional items. We also routinely encounter various forms of film media, electronic data and associated equipment and internet hubs. BMS CAT strives to develop protocols and options that meet the specialized needs of every client.

Secure Destruction:

BMS CAT offers secure destruction of damaged and undamaged documents for customers who determine they no longer need to retain items damaged. By providing a safe and secure way to destroy your documents, we are able to offer our customers peace of mind that the information contained in their documents was destroyed completely.



WHY CHOOSE FREEZE DRYING TO SALVAGE WET BOOKS & PAPER

A BMS CAT WHITE PAPER

WHY CHOOSE FREEZE DRYING TO SALVAGE WET BOOKS & PAPER

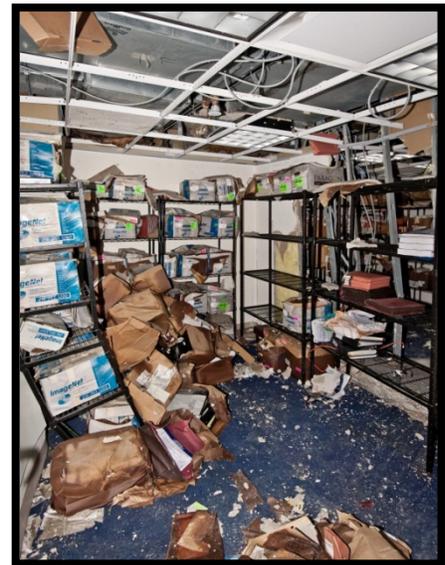


SUMMARY

When papers and books are wet, freeze drying via sublimation is the best and fastest way to salvage them. Papers and books can be wet from a variety of circumstances, such as broken water pipes, a roof torn off during a tornado, area wide flooding, etc. Often times many of these papers and books may become submerged under water, contaminated with a variety of debris and sustain substantial damage. The dilemma for the owner of these documents and books is what to do and who to turn to.

WHY DOES IT MATTER?

In today's environment preserving documents for business and historical purposes is not only a need, it is often the law. Retention of records is required in many cases for decades. Additionally, some documents may have historical value to an organization and they want to preserve these permanently. Often, these materials are highly secure and confidential. Documents and books that have become wet, moldy or have debris such as soot can be recovered while in a secure environment.



WHAT CAN YOU DO?

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and transported via any refrigerated means.

WHY SHOULD YOU CHOOSE FREEZE DRYING?

Documents exposed to water will continue to experience further damage as the water equalizes or wicks into the paper. The Library of Congress and the [National Archives & Records Administration](#) both recommend vacuum freeze drying by sublimation as the preferred method for removing water from paper.

Modern large scale freeze drying chambers actually cost less than desiccant or air drying papers/books. During the freeze drying process the quality of paper is maintained. By comparison, papers dried by air or dehumidification will swell up to 25%, wrinkle (cockle) and lose tensile strength.



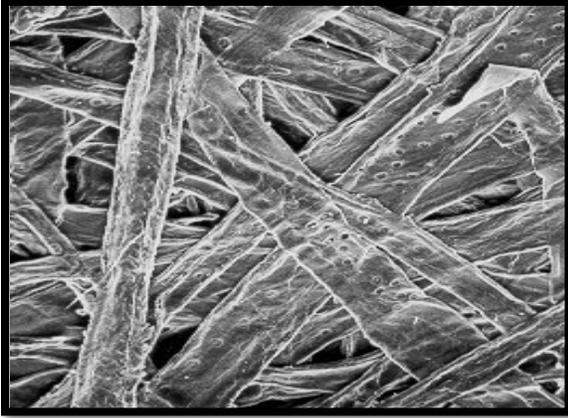
AIR OR DESICCANT DRYING



FREEZE DRYING VIA SUBLIMATION

Water exists in three phases: liquid, solid and gas. It is the liquid phase of water that is most damaging to paper and any media printed on it. The cross-scission and cross-fusion of paper is gradually destroyed by water, and the tiny fibers of the paper separate, and in turn, these fibers no longer serve as an adhesive. Most writing pen inks are water soluble and begin to run or dissolve. And finally, mold now has an optimal environment for growth. Because of this, simply air drying water soaked paper is not practical.

By allowing paper and books to start drying instead of freezing, additional damage is occurring to the documents. The escaping water molecules separate and break the paper fibers, while rendering the lignin useless. Paper generally swells about 25% greater in volume and 30% or greater in reduced strength, causing it to tear easily.

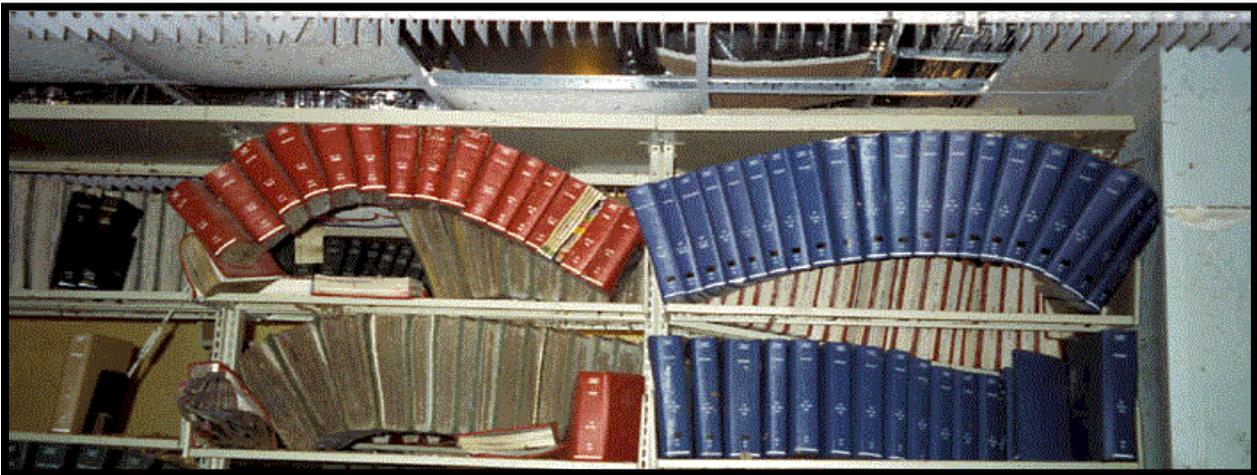


MICROSCOPIC VIEW OF PAPER



PAPER LEGAL FILES SWELLING AND DISTORTING ON METAL SHELVING

When wet books start to air dry, the same issues mentioned above occur, but to a greater degree. The spines of the books are generally stitched. This stitching will minimize the dimensional change of the spine but all the energy of moisture evaporation into the air will cause massive swelling on the foredge of the book. For this reason, it is important to remove all books prior to any attempts in dehumidifying the area. If necessary, a plastic vapor barrier can be constructed to section off the area. In order to minimize damage, freezing books in a timely manner is very important to remember.



Drying frozen, water-soaked paper via sublimation (or freeze drying) is slower than evaporation directly from the liquid phase. However, sublimation causes the least amount of damage to the paper and content. The drying rate using sublimation can be controlled by manipulating process parameters, minimally impacting the time

difference. Due to the damage produced by air drying and desiccant drying wet paper and books, it is clear that drying via sublimation is the best solution.

WHAT IS FREEZE DRYING VIA SUBLIMATION?

The technical aspects of drying via sublimation (or freeze drying) can be complex, but the basic principles of the process have been widely understood and accepted for generations.

Sublimation is a phase change which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and, by the process known as evaporative cooling, the temperature of the ice tends to get colder. Therefore, it is necessary to have heat from outside the system (in our case, electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will too, thus increasing the rate of sublimation. It is important to know that, for certain historic archival documents the heated shelves are optional; the process will simply take slightly longer. Depending on the type and age of the material, some archivists recommend removal of heated shelves for preservation purposes. In order to closely monitor the temperature of the paper, BMS CAT places temperature sensors in multiple boxes throughout each chamber.

Low pressure and a surplus of heat (energy) are essential during the freeze drying process. However, when the pressure reaches 0.100 Torr (prox) the process becomes adiabatic (without loss or gain of heat).

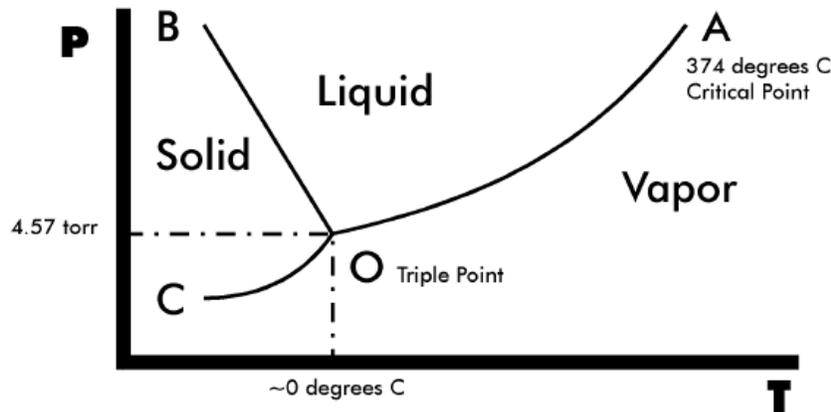
At this point the process is truly optimized, because all of the electric heat added works to raise the temperature of the ice versus supporting sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid, giving up its latent heat as



sensible (apparent) heat, thus the need for refrigeration. As the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr (point O), water can exist in only two states - solid and vapor (depending on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states: solid, liquid and vapor. Remember, all the damage to paper is done during the liquid phase of water. By keeping the pressure below 4.57, we prevent further damage while allowing the ice to sublime (go directly to vapor).

The process of freeze drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr and adding heat to warm the documents, causing sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber. Periodically, the cold trap is isolated from the chamber and the refrigeration cycle is reversed to heat the coils. Next, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are

several cold traps operating “push pull” - while one trap is in defrost; the other is still connected and removing water.

BMS CAT, Inc

www.bmscat.com

800-433-2940

 **Vacuum Pressure Comparisons 3-18-2013**

		<i>Torr (mm Mercury)</i>	<i>Micron</i>	<i>psia, (lb/in²) abs</i>	<i>Inches Mercury Absolute</i>	<i>Inches Mercury Gauge</i>	<i>kPa abs</i>
Pressure at Sea Level →	0	760	760,000	14.7	29.92	0	101.4
	1.3	750	750,000	14.5	29.5	0.42	99.9
	1.9	735.6	735,600	14.2	28.9	1.02	97.7
	7.9	700	700,000	13.5	27.6	2.32	93.5
	21	600	600,000	11.6	23.6	6.32	79.9
	34	500	500,000	9.7	19.7	10.22	66.7
	47	400	400,000	7.7	15.7	14.22	53.2
	50	380	380,000	7.3	15	14.92	50.8
	61	300	300,000	5.8	11.8	18.12	40
	74	200	200,000	3.9	7.85	22.07	26.6
	87	100	100,000	1.93	3.94	25.98	13.3
	88	90	90,000	1.74	3.54	26.38	12
	89.5	80	80,000	1.55	3.15	26.77	10.7
	Household vacuum cleaner →	90.8	70	70,000	1.35	2.76	27.16
92.1		60	60,000	1.16	2.36	27.56	8
93		51.7	51,700	1	2.03	27.89	6.9
93.5		50	50,000	0.97	1.97	27.95	6.7
94.8		40	40,000	0.77	1.57	28.35	5.3
96.1		30	30,000	0.58	1.18	28.74	4
96.6		25.4	25,400	0.49	1	28.92	3.4
97.4		20	20,000	0.39	0.785	29.14	2.7
98.7		10	10,000	0.193	0.394	29.53	1.3
99		7.6	7,600	0.147	0.299	29.62	1
Water cannot exist as a liquid below this point. Sublimation occurs from this point ↓		4.56					
	BMS Chamber for Freeze Drying →	99.9	1	1,000	0.01934	0.03937	29.88
	99.9	0.75	750	0.0145	0.0295	29.89	0.1
	99.99	0.1	100	0.00193	0.00394	29.916	0.013
Incandescent Light Bulb →	99.999	0.01	10	0.00019	0.000394	29.9196	0.0013
	100	0	0	0	0	29.92	0

$$1 \text{ psi (lb/in}^2\text{)} = 6,894.8 \text{ Pa (N/m}^2\text{)} = 6.895 \times 10^{-3} \text{ N/mm}^2 = 6.895 \times 10^{-2} \text{ bar}$$

HOW DO YOU KNOW IF DOCUMENTS ARE WET?

If paper items, such as books and manuscripts, have been exposed to excessive humidity, are near a water intrusion, under a sprinkler discharge or partially submerged in water, they should be inspected for moisture content with a moisture meter. The moisture meter will determine the amount of moisture present in the material. Simply visually inspecting the items or touching them will not tell the whole story. Moisture can be deceiving, you cannot always feel or see it. An archivist's electronic moisture measurement meter will give you the full picture.



DELMHORST P-2000 PAPER MOISTURE METER

The meter will read from 4.3% to 18% (saturation) moisture range on paper. It is important to check the owner's manual for instructions on how to calibrate the device prior to use and calibrate before each use.

Moisture Content is considered within the acceptable range when the measurement is < 7% MC (Moisture Content). Many offices may have documents that are in the 5% to 7% MC range. Moisture Content is considered higher than desired when the range is >7% MC but < 11% MC. Document moisture content is then considered "humid-damp".

It is recommended that action to reduce the moisture content to less than 7% be taken within 48-72 hours. During this time frame it is acceptable to try moisture removal on site with blocking or air movement when dealing with small batches of documents. If you are unable to remove moisture within 72 hours, schedule documents for freeze drying.

Moisture Content is considered “unacceptable” when the moisture content is greater than 11% MC. At this point, the documents are considered “wet” and should be freeze dried via sublimation immediately. Your first step is to freeze the documents to mitigate any further damage until the documents can be shipped to the freeze drying chambers.

Zone	ACCEPTABLE-DRY			HUMID-DAMP			UNACCEPTABLE-WET		
Delmhorst Reading	4.5	5	7	8.0	9	10	11	14	18
% of Saturation or moisture content of paper	25%	28%	39%	44%	50%	56%	61%	78%	100%

CONSIDERATIONS

Freezing: The most effective method way to stabilize water-damaged archival and library materials is freezing at low temperatures as quickly as possible. This is the most generally accepted method by conservators. The recommended freezing level should be around -30 °C (-20 °F). Frozen materials should remain in cold storage until freeze drying can occur.

BMS CAT is able to provide refrigerated trailers at the loss site. These trailers are capable of achieving a -20 °F temperature. This will allow teams inventorying to process items then immediately place pallets of wet books or documents into the refrigerated trailer, thus mitigating the damage. Once a trailer is full it can be shipped with the appropriate security levels in place to our secure freeze drying facility.



Compression: It is important to note that books dried without mechanical compression will distort and cockle. Several companies will attempt to solve this issue with rubber bungee cords with minimal success.



NO COMPRESSION



BUNGEE COMPRESSION

BMS CAT has developed a proprietary process of “Self Compensating Mechanical Compression” book reforming. A snapshot of the process is illustrated below.



BENEFITS OF FREEZING AND FREEZE DYRING VIA SUBLIMATION

Freezing Documents Halts Mold: Mold requires three things to thrive: moisture, food and temperature. By freezing documents, the temperature required for mold to thrive is lowered to a point where it cannot survive. While mold spores are not destroyed by freezing, they remain dormant until a more favorable environment is available. Freezing will stop the infection of mold thus harmful damage to the documents ceases.

Freezing Stabilizes Soluble Inks and Dyes: Freezing has the additional advantage of stabilizing inks, dyes, dyestuffs and colorants used for manuscripts, maps, sketches and drawings that are soluble in water. Later, when freeze-drying takes place, migration or feathering of inks or dyes can be restrained since the liquid stage is bypassed.

Freezing Prevents Adhesion of Pages: Books and periodicals are generally printed on stock that uses a coating pigment with a binder of casein and starch, both of which are highly water-soluble. If coated stock is permitted to dry, it will turn the book into a clay-like brick at which point restoration is impossible. The only practical method to salvage these items, especially when large quantities are involved, is freezing while wet then freeze drying.

Freezing Gives You Time To Assess: By freezing water-damaged documents, they are stabilized as long as they remain frozen. Disasters can be stressful and confusing. When stabilizing documents through freezing, there is time to assess the damage. Decision makers can determine which documents can be discarded, replaced or copied. It allows time to determine what repairs or restoration is required and how much time it will take to recover damaged storage areas.

Freeze Drying Uses Fewer Chemicals & Produces Fewer Odors: The process uses fewer chemicals, thus producing limited odors. The vacuum chambers cause VOC's (Volatile Organic Compounds) to "flash off", boil or vaporize because the pressure in the chamber is lower than the boiling point of the VOC's. Additionally, many chemical



contaminants escape with the gasses released during the process. As a result, the documents will smell better and have very few (if any) remaining contaminants. If any contaminants do remain, they can be removed during the cleaning process.

Following a plane crash in the Hudson River, many paper documents were submerged in water overtaken by pungent jet fuel. Our freeze drying chambers were able to remove most of the odor from the jet fuel.

Freeze Drying is Safe for Documents and Books: "In studies conducted by the Research and Testing Office of the Library of Congress, there was NO evidence found that freeze drying causes damage of cellulosic and proteinaceous materials (5)."

Source: Vacuum freeze-drying, a method used to salvage water-damaged archival and library materials. A UNESCO (United Nations Educational, Scientific, and Cultural Organization); Study 1987.

Freeze Drying Produces a Cleaner Document: The gasses released during the sublimation process deposit loose matter to the surface of the papers. This facilitates a better cleaning to the papers by removing silt, loose mold spores and other contaminants.

Freeze Drying Is a Safe and Secure Way To Dry Documents: According to the National Archives (NARA), “Records can dry in their original containers reducing risk for disruption of original order.” This allows us to have a secure process, keeping clients documents segregated from other client’s documents.



According to the National Archives (NARA), “Records must be removed from their containers, spread on shelves to dry in warm dehumidified air, and periodically rotated to expose wet paper surfaces.” As you can imagine, a great deal of space must be used to spread paper out individually. The risk of this process is that documents can be knocked off of shelves and intermixed with other client’s documents. Because paper is spread throughout a facility, there is greater risk of retrieving the wrong file or intermixing files.

WHAT CAN YOU DO?

If there is any advance notice of potential damage, all possible protective measures should be taken such as covering items with plastic, raising furniture and protecting electronics. Additionally, consider permanent storage of certain valuable items (rare books, historical newspapers or long term archival documents) in buffered, acid free storage boxes.

It is important to have a plan in place for a disaster. It is highly recommended that you pre-contract with a restoration company before a loss occurs. This gets any administrative “red tape” out of the way, expedites response times and allows you to

carefully pre-qualify the service for your exact needs. BMS CAT offers a Response Service Agreement at no cost.

SUMMARY

BMS CAT offers over 8,500 cubic feet of freeze drying space in our freeze-drying chambers. Our 7th generation equipment is completely controlled electronically and monitored 24-hours a day by our trained professional recovery staff and around the clock security. BMS CAT recently upgraded software and equipment and continues to improve in several areas including:

- More rapid drying cycles
- 24 thermocouples per chamber for more precise knowledge of temperature **inside boxes**
- Increased control of chamber pressure
- Enhanced remote monitoring
- Decreased vacuum pressures down to **1 Torr**

References, National Archives and Records Administration (NARA), The Library of Congress, The United Nations, The Northeast Document Conversation Center, UNESCO (United Nations Educational, Scientific, and Cultural Organization)



CLEANING DAMAGED DOCUMENTS

A BMS CAT WHITE PAPER

CAN PAPER BE SAVED? RECOVERING DAMAGED DOCUMENTS



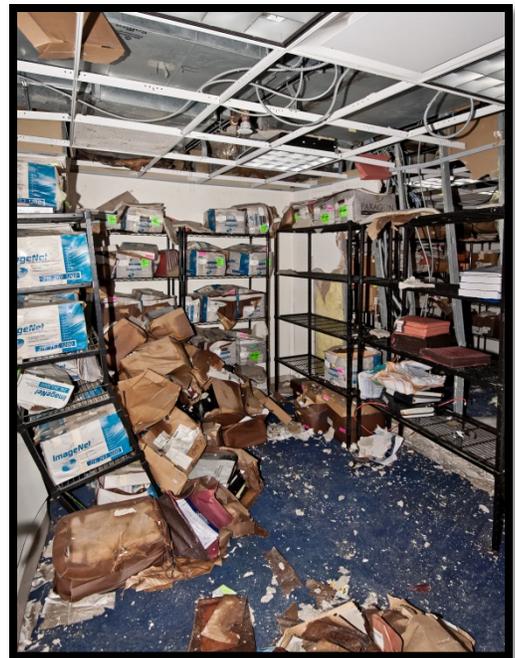
SUMMARY

When a facility suffers damage from water, fire or microbial growth, documents stored within are susceptible to irreversible damage. Can paper and media be recovered?

WHY DOES IT MATTER?

In today's environment, preserving documents for business and historical purposes is not only a need, it is often the law. In many cases, retention of records is required for several decades.

Additionally, some documents may have historical value to an organization. Documents and media that have become wet, moldy or have debris such as soot can be recovered. Often, these materials are highly secure and careful consideration must be taken to ensure that any company hired to handle records have proper security protocol in place. Such was the case when BMS CAT was hired to restore Top Secret documents damaged at a FBI facility during Hurricane Sandy.



CLEANING OFF-SITE

There are many reasons to clean documents off site. Typically, documents are not the only thing damaged, and the facility housing the documents usually needs repairs and/or restoration. While this may seem cumbersome, it allows for several benefits.

1. Restoration and repairs can be performed freely without fear of further damaging documents or books.
2. Documents are in a secure facility while cleaning, including cameras, supervisors and dedicated staff.

3. Technicians have a dedicated facility for cleaning.
4. Since local technicians are used off-site, thus eliminating the cost of housing and transportation, the cost to clean off-site is actually lower.

When packing out documents, it is generally appropriate to begin with materials that have sustained the most damage. Site conditions may prevent this. Microfilm and other photographic negatives should not be allowed to dry out. The emulsions become soft when wet and will act like an adhesive. When these items dry next to paper or other films, the emulsions will stick to whatever is next to it permanently. Trying to pull items apart will destroy the film. Film should be placed in a plastic bag with a



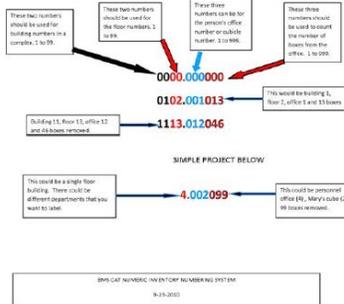
moderate amount of distilled water to keep items wet. Finally, film and other photographic materials should be stored at a cold temperature. When dealing with bound volumes, they should be packed “spine-down.” Large volumes should be placed flat in boxes.

HOW DO YOU KEEP TRACK OF IT ALL?

BMS CAT utilizes an inventory system that gives each box a unique number that will become its own identifier. The inventory number will tell us the building, floor, office (or cubicle) and how many boxes were removed from each space. On both the box label and corresponding spreadsheet, there is a section for comments describing the documents.

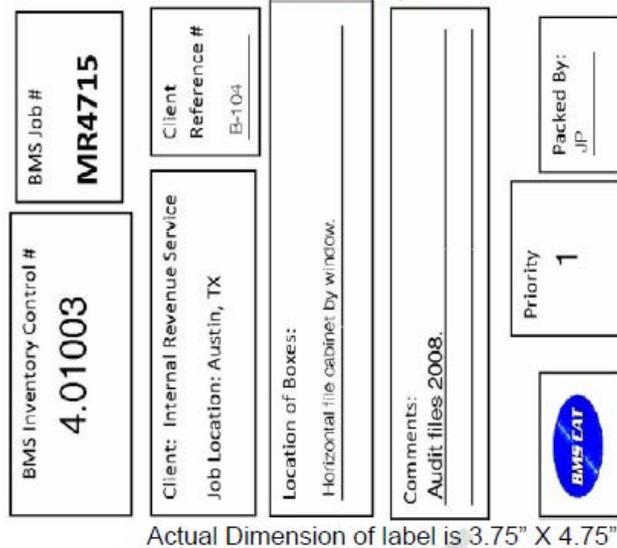
BMS CAT INVENTORY AND LABEL SYSTEM	
0.00000	There are 5 decimal places to the right. There one decimal place on the left.
1.00000	The first tow digits will be the floor number. This illustrates floor #1.
1.01000	This is the first office on the first floor. We have used over 90 on one floor. This is the box from the first office on the first floor. We could have up to 999 1.01001 boxes per individual office.
3.07098	This is box #98, from office #7, on the third floor.

Example:



Each box is labeled with two identical labels. All inventory information is consolidated into spreadsheets and provided to the customer.

Example:



WHAT CAN BE DONE?

BMS CAT has extensive experience in document and special media recovery following a disaster. The cleaning portion can be performed to documents damaged by debris, char or soot.

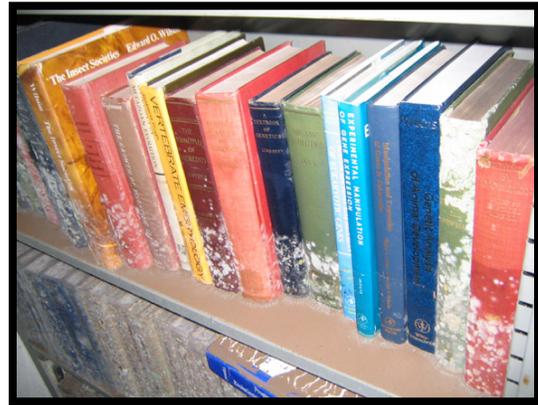
Water Damage: If the Moisture Content of the paper is less than 7%, documents can be cleaned without drying first. If Moisture Content is greater than 7%, documents will continue to sustain further damage as the water equalizes or wicks into the paper. Freeze drying is generally accepted to be the least damaging of all methods of

drying wet paper. You can check out the National Archives comparison of drying methods here. <http://www.archives.gov/preservation/disaster-response/drying-techniques.html>

Fire & Smoke Damage: Documents damaged by smoke and soot are cleaned using “chemical sponges” made of pure latex rubber. Soot particles are removed from the edges of volumes and documents. Technicians use gentle sweeping motions, moving from the center out to the edges of the document. If necessary, HEPA vacuums will be used to trap additional debris. If odors exist, ozone may be used to neutralize the odor. Ozone should not be used, however, on archival or intrinsically valuable records.

General Cleaning Protocol:

- Each item is first HEPA vacuumed to remove gross accumulations of mold and debris.
- The technician then uses a dry cloth and/or “chemical sponges” made of pure latex rubber to further remove accumulations from the surface.
- If books are damaged, the spine and foredge may be accessed and cleaned with a bottle brush or dry cloth (if necessary).
- Binders are not a good candidate for cleaning or retaining following damage. Instead, information from each binder is retained with the materials that were housed in that binder. Additionally, we photocopy or photograph the original information to prevent confusion when re-filing.
- If requested, BMS CAT will also replace file folders made of permanent-durable materials. The old file labels are retained and placed in a plastic bag and hermetically sealed and new file labels are applied to replace them.
- Documents that have been wet or contain mold should be cleaned and sanitized. An EPA registered biocide will be applied to the documents, specifically where visible mold growth has occurred.



- **If documents are exposed to Class 3 Water (“Black Water”), they should be sterilized via Gamma Radiation. Black Water can include sewage, river water, water from area wide flooding and any water that has been present for extended periods of time.**
- **If documents will be returned to a healthcare setting, Gamma Radiation is recommended for the safety of patients who may have compromised immune systems.**

CONSIDERATIONS

If your documents are important enough to recover, security must be of concern. Security occurs at several points as demonstrated below:

Customer Site Security	Transportation Security	Restoration Security
<ul style="list-style-type: none">• Additional security should be hired if necessary• Segregate documents from other restoration activities• An inventory of the documents should be performed and audited• When documents are placed in a truck/trailer, a security lock should be applied• A dedicated security person should visually monitor the trailer door• Documents should not be left alone during transport or when in the trailer• Restoration employees should have visible ID badges with pictures and wear uniforms	<ul style="list-style-type: none">• Trailer doors should be secured with a US Customs High Security Seal• Straight through shipment should be used if common carrier is shipping• Team drivers should be used so no overnight stays are required• Transportation should be performed by a security vetted company with GPS tracking• Driver background checks should be performed	<ul style="list-style-type: none">• The facility where restoration occurs should be secured• There should be no open doors for visitors to walk in• Employees should be background checked and drug screened• Only employees with a need to access the documents should be allowed to enter the facility• The facility should be alarmed• The document processing areas should be segregated from other areas of the building• Ensure that training for employees applicable to your industry has occurred (HIPAA, Sarbanes Oxley, etc.)

WHAT CAN YOU DO?

If there is any advance notice of potential damage, all possible protective measures should be taken such as covering items with plastic, raising furniture and protecting electronics. Additionally, consider permanent storage of certain valuable items (rare

books, historical newspapers or long-term archival documents) in buffered, acid free storage boxes.

It is important to have a plan in place for a disaster. It is highly recommended that you pre-contract with a restoration company before a loss occurs. This gets any administrative “red tape” out of the way, expedites response times and allows you to carefully pre-qualify the service for your exact needs. BMS CAT offers a Response Service Agreement at no cost.

Film Media Recovery

X-rays, Microfiche & Film, Photographic
Negatives, Aperture Cards

- Do Not Allow These Materials to Dry Out on Their Own, They Will Stick Together and Cause Permanent Damage
- Refrigerate Any Quantity That Is Greater Than That Which Is Possible to Process Immediately



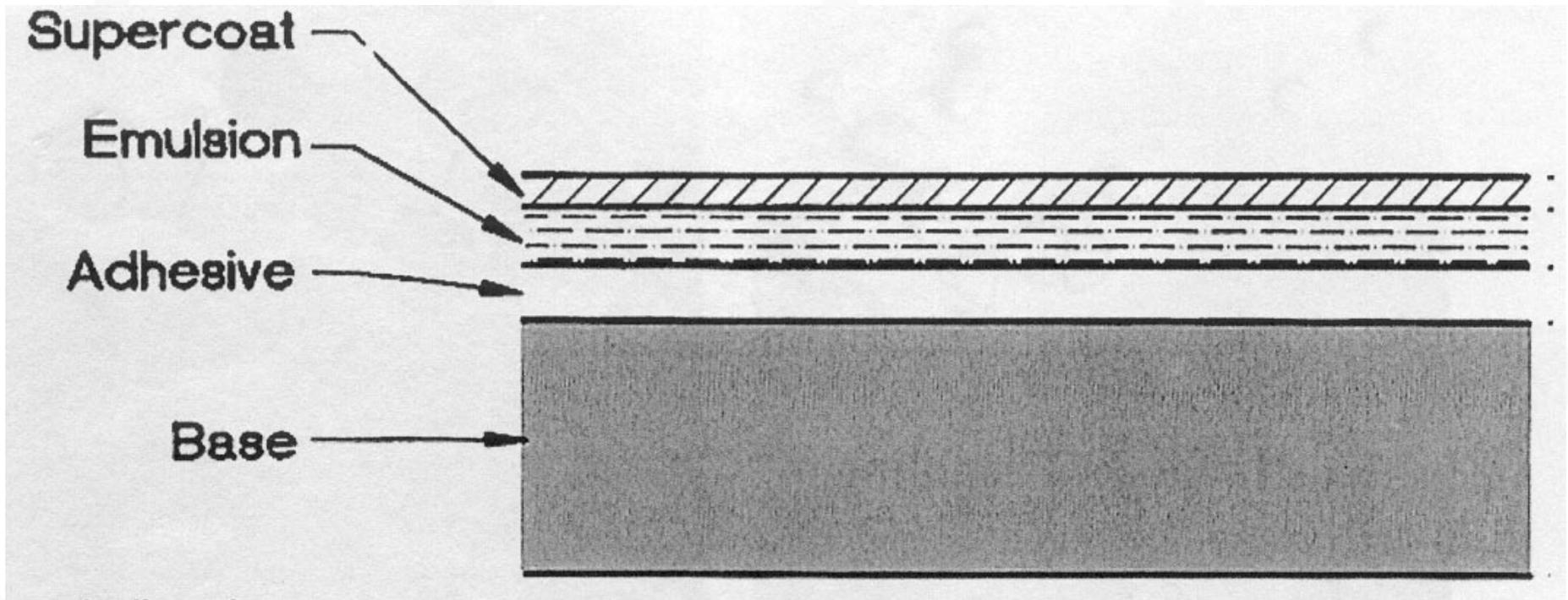
Film Media Recovery

X-rays, Microfiche & Film, Photographic Negatives, Aperture Cards

- Film is a media that makes a permanent record of the image.
- Generally there is an emulsion on one side. However, some x rays have emulsion (gelatin) on both sides.
- Polyester is the base material.
- X rays have silver halide in the emulsion.

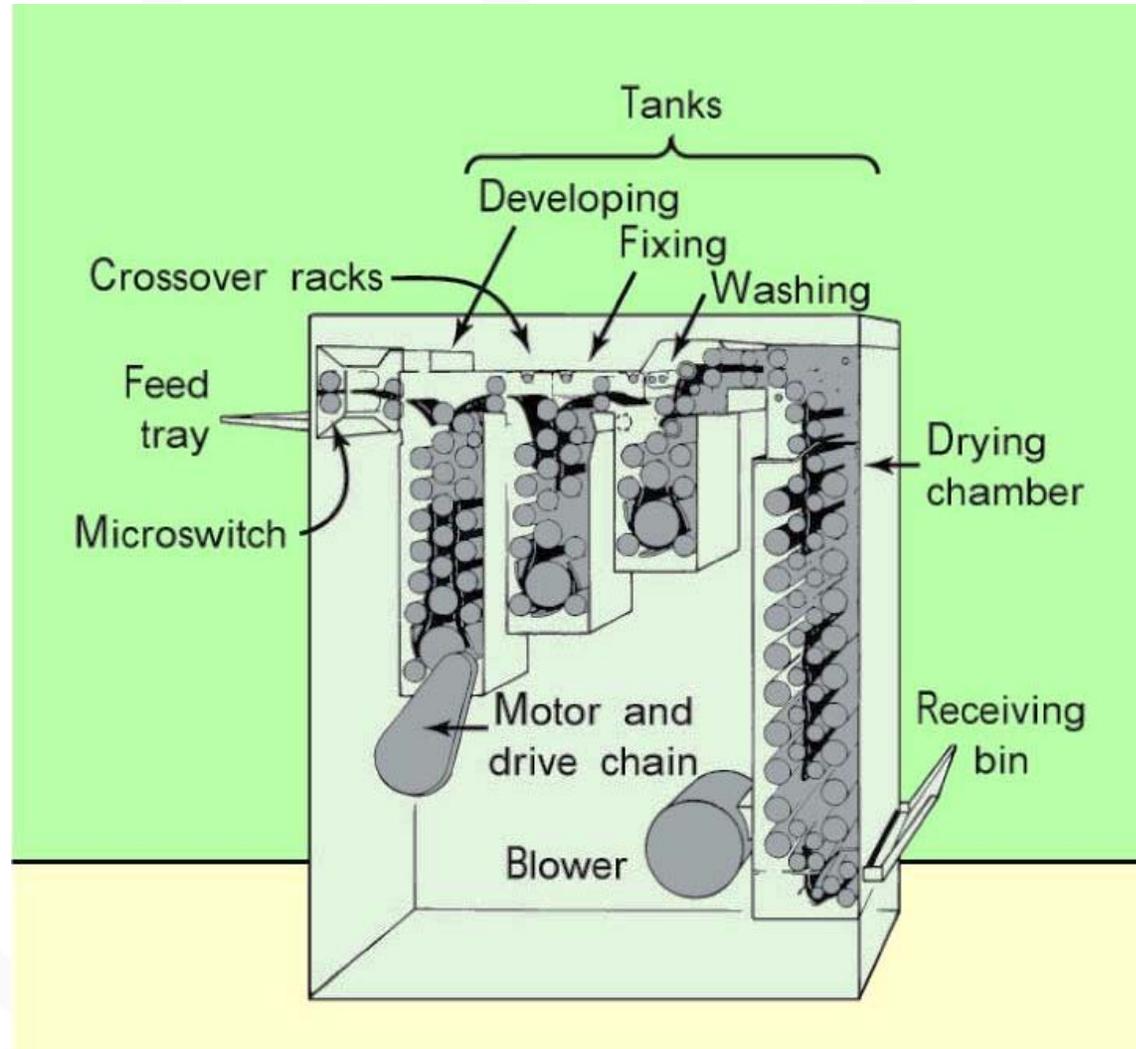
Film Media Recovery

X Ray Construction



Film Media Recovery

BMS CAT X Ray Processing Machines



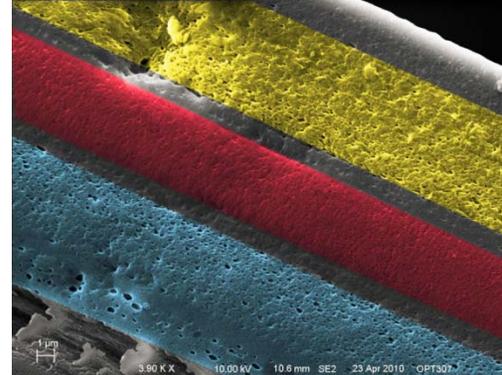
Film Media Recovery

Historic Movie Film

65 & 70 MM Film, up to 1,000 foot + in length.



Emulsion layers.



International Bank Micro Fiche Files



**Flood
Level**

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International Bank Micro Film Storage



Flood
Level



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Blackmon Mooring
BMS CAT



BMS CAT Micro Film Processing Machines



Blackmon Mooring & Best LLP



BMS CAT Micro Film Rewinding Machines



Audio Tape Recovery

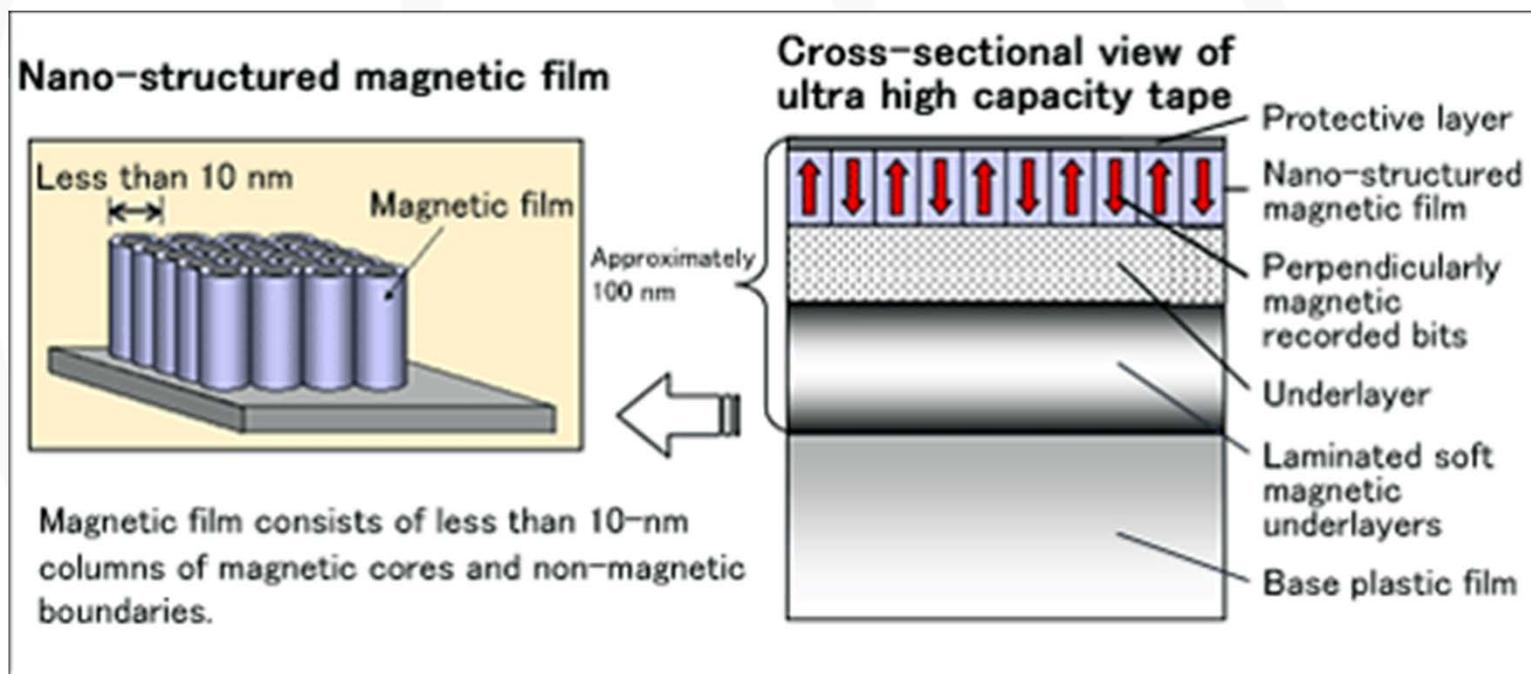


Audio Tape Recovery



LTO Tape Recovery

Linear Tape-Open (LTO) is the primary way companies back up large amounts of computer data. It is the least expensive method. This is magnetic media highly compressed.



LTO Tape Recovery



Before and After





National Disaster Response Team

- Fire, Smoke & Water Restoration Services
- Construction Services
- Moisture Control / Dehumidification Services
- Microbial Remediation
- Document & Media Restoration Services



www.blackmonmooring.com

800.433.2940

www.bmscat.com



George Mason University

RFP: GMU-CM0905-23



Mr. Christopher Mullins
George Mason University
4400 University Drive F
Fairfax, VA 22030

RE:GMUM0905-23

Dear Mr. Mullins,

Thank you for the opportunity to bid on the George Mason University RFP GMU-0905-23. As requested, we have prepared a response, which outlines BMS CAT's qualifications, workflow, and pricing for this contract.

In our response, please note the careful attention to details regarding our processes, paperwork, operational equipment, and facilities in place to properly manage/stabilize/restore your assets. As you well know, media restoration is a very specialized field, and trusting your valuable assets should not be left to restoration companies that outsource these functions, or do a small percentage of the jobs BMS CAT does each year. George Mason University, especially, has very historically significant media that deserves the care and trust of an organization like BMS CAT that has been in business since 1948. Experience and proven workflows are something that BMS CAT can offer that other organizations cannot match.

BMS CAT has a dedicated document/media restoration team and the largest freeze-dry capacity in the United States. We are a national company that has resources to ramp-up quickly in the event of an area-wide disaster, which could consume all the resources of other companies. With BMS CAT you not only get the dedicated resources of specialists in delicate media recovery, you get the strength of a large, national company that can deploy resources quickly.

We are confident that BMS CAT has the knowledge, resources and experience that George Mason University needs.. With BMS CAT, you get quality and responsive service, combined with the unmatched skill of the leading company in document restoration services. Our secure facilities, proven workflow, highly trained and screened professional staff, ensure your documents are well protected.

We look forward to working with you. If our response meets your satisfaction, we would like the opportunity to meet with you and personally present our overview and proposal.

In the meantime, please do not hesitate to contact me if I can be of further assistance. I can be reached at 313-320-1877 or mjaroma@bmscat.com.

Sincerely,

Matt Jaroma

Vice President, Documents Sales

COMPANY PROFILE & REFERENCES

COMPANY PROFILE

For over 70 years, Blackmon Mooring & BMS CAT have been the number one resource for cleaning and restoring homes and businesses. We have built our reputation as experts who get the job done right. We do not only focus on the job, we also focus on the customer.

Started in 1948 as a furniture and dye shop, Blackmon Mooring has grown to become a leader in each service area it practices – from carpet cleaning and air duct cleaning to fire and water restoration. The earliest founders of Blackmon Mooring built their business on reliability, quality and superior customer service. In 1981, we expanded our reach globally with the addition of the BMS CAT division and since then, we have responded to some of the world’s most devastating disasters.

BMS CAT has been helping organizations recover and restore documents since the early 1980’s when our first freeze-drying chamber was installed. Since that time, we have become the leading company for document recovery and restoration services. We have assisted customers all over the world by restoring paper and electronic media affected from fires, floods, improper storage or other natural disasters. Our seventh generation freeze-dry chambers are the most advanced in the industry.

BMS CAT understands the importance in recovering essential materials such as business documents, records and books. We have a secure process to maintain the ‘chain-of-custody’ when working with your sensitive materials. Our professional records recovery services make it possible to recover documents that, just a few years ago, would have been written off as a total loss.

Today, we follow the same principles that we were founded upon, and always remember that the customer is the cornerstone of our business. We go to great lengths to make sure you are not just satisfied, but happy with our services. After all, our reputation depends on it.

BMS CAT LOCATIONS



REFERENCES

Pentagon Library – Washington, D.C.

The Pentagon Library is located within the center ring of the Pentagon, the world's largest office building. On September 11, 2001, terrorists attacked this facility by crashing a commercial jetliner into the building. The nose gear of the plane actually penetrated the first four rings of the Pentagon, and hit the back wall of the library. Smoke and water damage affected the entire library, which housed more than 250,000 bound volumes, 2,000,000 pieces of micro-graphics, classified and confidential records, historical military documents, more than 100 computer workstations and a dedicated server room.

Raytheon – Space & Airborne Systems

Contact: Steven Van Nguyen

Telephone: 972.205.4546

A helicopter burst into flames after it crashed into the Raytheon plant located in El Segundo, CA in March of 2011. The building housed hundreds of Raytheon engineers and staff. The helicopter landed in a patio area, setting the first two floors of the building on fire.

Raytheon, being a military contractor, had many sensitive documents that needed to be recovered. There were thousands of files that had been placed into large 55 gallon bags – some marked for recovery, some for disposal, but many were wet and intermixed with employee's personal effects.

BMS CAT was brought in the day after to start recovering documents and employee's personal items. We set up a large onsite cleaning facility to triage all the bags. The lightly affected items that were not wet or moldy were cleaned onsite. Everything else was shipped to BMS CAT's corporate headquarters in Fort Worth, where the items were freeze-dried, cleaned and subjected to Gamma Radiation. The entire process took a few months.

Internal Revenue Service

Contact: Edward Roberts

Telephone: 512.640.8008

On February 18, 2010, a suicide pilot crashed his plane into the regional IRS center in Austin, Texas. Fire raged throughout the center, causing widespread devastation. The crash caused smoke to billow into the sky, leaving a huge gaping hole and two fatalities.

BMS CAT was contacted to sort through and preserve thousands of sensitive IRS documents and personal items. We worked very closely with the Department of Homeland Security from start to finish to ensure the confidentiality of the project.

The IRS took the position that the building was unsafe for their employees to retrieve personal items. Instead, BMS CAT collected personal items from the desks and cubicles of over 200 employees, which were inventoried and removed to our off-site cleaning facility. To ensure the chain-of-custody was not broken, we added barcodes to every box in order to properly track and scan into our internal systems. Sensitive items were carefully and securely transported under the protection of federal guards, and our

additional security teams. Due to the high importance of the items and overall project, we worked in front of cameras and behind well-guarded fences in an isolated area.

Our expert crews began manually peeling charred papers apart one by one, carefully trimming severely damaged edges and scanning others into readable pdf documents. Special document sponges were applied to clean debris from papers. Wet documents were put through our specialized freeze-drying process to remove moisture and prevent mold growth. Antimicrobial solution was applied to clean and disinfect all the damaged items.

To assist IRS employees with locating their personal effects, we uploaded images of the items to our secure site giving them exclusive access. This not only helped us effectively communicate with those affected, but also showcased our accountability. We were entrusted with the most sensitive documents and items after an unthinkable disaster. Our security staff, in addition to federal security guards, gave our client comfort and ease of mind knowing our teams were properly monitored and demonstrated professionalism during a difficult time.

Fried Frank Harris Shriver & Jacobson LLP

Contact: Susan Scattergood

Telephone: 212.859.8359

Fried Frank Harris Shriver & Jacobson LLP is an International Law firm located in the financial district of New York. When Hurricane Sandy pounded the upper East Coast, extensive flooding occurred in the New York City area.

Fried Frank stored all of their legal documents in the basement, which became totally submerged in water as a result of the flooding. BMS CAT inventoried and removed 26 truckloads of documents to freeze dry, clean and Gamma Radiate.

In addition, we have also provided services to the following:

- **FBI**
- **Library of Congress**
- **Smithsonian**
- **FAA**
- **United States Marshall Service**
- **VA Hospitals**

VENDOR QUALIFICATIONS

VENDOR QUALIFICATIONS

Blackmon Mooring & BMS CAT boast **the world's largest capacity for freeze-drying**. Our state-of-the-art document recovery facility, coupled with advanced equipment, qualified personnel and security, allow us to safely restore your documents in a timely manner.

Blackmon Mooring & BMS CAT have decades of experience in handling jobs of all sizes – both small incidents and area-wide disasters. Our national footprint gives us the ability to quickly respond to any incident that may occur at your property or record center. We mobilize staff, equipment and other resources efficiently and effectively, and have successfully helped companies recover from Hurricanes (Sandy, Matthew, Ike, Katrina, Wilma, etc.) and other disasters. BMS CAT has also worked with Iron Mountain on many occasions to restore documents that have been damaged by water, fire and mold.

Blackmon Mooring & BMS CAT can respond quickly after your call to mobilize staff, packing materials and freezer trucks on site. We have systemic processes to barcode and track all of the materials that will be moved from its original shelf location. Our barcoding methodology keeps the chain of custody intact while moving materials from location to location. In addition, our barcoding methodology allows for up-to-the-minute tracking, so the location of material is always known and retrievable. We have the ability to keep materials organized, so that they are returned to your shelves in the proper order. The inventory system keeps everything in order so put-away is logical and orderly.

We have the ability to assess and monitor the level of moisture within each set of materials we service. Our staff is trained to use document-specific moisture meters/paddles to ascertain the MC (Moisture Content). Throughout the recovery process, we monitor the moisture to ensure we are treating the materials properly. We monitor the MC levels to confirm documents have reached the normal equilibrium. BMS CAT also possesses extensive years of experience in working to clean and remove mold from books and other types of documents. By utilizing specialized document cleaning sponges and vacs, we are able to perform these cleaning services efficiently and effectively. In cases where documents need to be sterilized, we can apply biocide chemicals or use gamma-radiation if your facility prefers this method for sanitizing in the United States.

BMS CAT is accustomed to working with customers who require high levels of security. Federal regulations concerning privacy in medical and personal information make security and chain of custody issues extremely important. Records and information recovery services are performed in our state-of-the-art recovery facility which meets or exceed the requirements of a commercial records management center. As needed our security can be augmented to meet the requirements of classified and confidential government information through facility lock-down.

Confidentiality and security of customer contents is paramount to the continued success of BMS CAT and therefore is a top priority. In fact, Wells Fargo Banking did an onsite security audit through an outside consultant during which BMS CAT scored a 5 out of possible 5.

Security protocols start at the customer's facility. BMS CAT's customer site security protocol is as follows:

- BMS CAT will take control and custody of the documents and protect them from unauthorized people at the client's location.
- If so directed BMS CAT can hire a security firm for additional security.

- BMS CAT will segregate the document area from other restoration efforts underway to minimize traffic in the document recovery area.
- BMS CAT will inventory documents, audit the inventory and then securely transport the documents to the truck or trailer that will be transporting the documents.
- The documents will be placed in the truck or trailer and then securely lock the trailer door. The door does not have to be locked if a designated dedicated security person is visually monitoring the trailer door.
- BMS CAT will not leave documents alone in hallways while moving the documents to the truck or trailer
- BMS CAT will not leave documents in the truck or trailer with the door open or unlocked.
- BMS CAT employees will have visible picture ID badges.
- BMS CAT technicians will be uniformed with the company logo visible.

PRESCREENING EMPLOYEES

At time of hiring all BMS CAT employees are subject to a background check and drug/alcohol screening. Employees are also subjected to random annual drug screening. Pre-employment drug screens are mandatory along with random checks. All newly hired employees are also e-verified. Criminal record checks include a local, state, and federal check for the past seven years. BMS CAT verifies previous employment references for the past 3 years and conducts Social Security Number verifications (trace and reverse trace). Video surveillance and 24 hour security monitoring ensure safety of our facilities.

ACCESS & CONTROL

Entrance to the building is controlled by an electronic card key access. For special projects employees are issued “project badges” that differentiate these employees from regular BMS CAT employees. Non project employees must be escorted into areas where special projects are being processed.

Upon arrival, boxes are logged in and tagged for identification. Food and/or beverages are not allowed in the document preparation area. Document prep staff is not allowed to wear headsets and internet access, phones, cameras, and other electronic devices are not permitted in work site areas. Employees wear company uniforms and are issued photo I.D. badges and required to wear them at all times

TRANSPORTATION PLAN

The following is the recommended procedure.

- Secure the trailer door with a US Customs High Security Seal. Record the serial number. The person on the receiving end should confirm the match and that the seal is unbroken. Side doors of the trailer should also be sealed.
- A straight through shipment should be specified if a contract carrier is being used.
- Specify team drivers so there is no overnight stay
- Specify a security vetted company with GPS tracking on the trucks if desired.
- Specify only US Citizens if required.
- Specify that the drivers must have passed a criminal background check and drug screen.

FACILITY & DESCRIPTION

BMS CAT has fenced in secure modern buildings. Document processing areas are segregated from other areas of the building. The building is locked at all times via key card and fence. Access is granted by key card issued only to screened employees. The document processing center is monitored by 34 cameras in and out of the facility. Work is performed under tight supervision and no electronic devices are permitted. All freeze drying equipment can be monitored on-site or remotely. If any equipment anomalies occur, two document processing center managers are immediately notified.

Should an emergency occur in the document processing center, our center manager, Amerin Ingram is responsible for notifying the appropriate parties if necessary.

Should our power be interrupted for an extended time BMS CAT could bring in generators to power the building and freeze dry chambers to prevent an interruption of our contract.

HIPAA – If you're a medical professional and your practice suffered damage requiring the assistance of document repair specialists, patient confidentiality is a key concern. Only HIPAA-compliant professionals can have access to those records, and you cannot rely on every disaster recovery company to implement those standards. BMS CAT maintain HIPAA compliance throughout the entire process to ensure your patients' privacy is protected.

FACTA – Identity and credit card theft are major issues. It seems like every week there is a new retail store losing control of millions of customers' credit card numbers. If you are a business that stores client credit card or banking information, then you are aware of how stringent FACTA standards can be. BMS CAT can perform document recovery that meets FACTA compliance standards and ensures your customers' credit card and financial information remains private.

GLBA – Lenders, banks and other financial institutions are required under GLBA to disclose to their customers exactly how they share their information. Under certain circumstances, a document recovery company taking possession of these records in order to restore them could be construed as information sharing, at least if that company is less than forthright in their practices. BMS CAT take financial confidentiality very seriously, and have developed standards to ensure GLBA compliance.

Sarbanes-Oxley – Publicly traded companies and brokerages are required to adhere to strict guidelines regarding disclosures to potential investors regarding their securities. Maintaining records is an essential part of this, as well as maintaining internal confidentiality. If you have concerns about maintaining compliance with Sarbanes-Oxley should document recovery prove necessary, BMS CAT can help.

With so much at stake, it is hard to understate the importance of accountability in the document recovery process. At BMS CAT, we truly understand there is no room for mistakes when it comes to [protecting private, proprietary and client information](#). We hold our responsibility to you in this regard among our most sacrosanct duties.

GENERAL CLEANING PROTOCOL

GENERAL CLEANING PROTOCOL

BMS CAT has extensive experience in recovering documents and special media following a disaster. The cleaning portion can be performed on documents damaged by debris, char or soot.

Water Damage: If the Moisture Content of the paper is less than 7%, documents can be cleaned without drying first. If Moisture Content is greater than 7%, documents will continue to sustain further damage as the water equalizes or wicks into the paper. Freeze-drying is generally accepted to be the least damaging of all methods of drying wet paper. You can check out the National Archives comparison of drying methods here. <http://www.archives.gov/preservation/disaster-response/drying-techniques.html>

Fire & Smoke Damage: Documents damaged by smoke and soot are cleaned using “chemical sponges” made of pure latex rubber. Soot particles are removed from the edges of volumes and documents. Technicians use gentle sweeping motions, moving from the center out to the edges of the document. If necessary, HEPA vacuums will be used to trap additional debris. If odors exist, ozone may be used to neutralize the odor. Ozone should not be used, however, on archival or intrinsically valuable records.

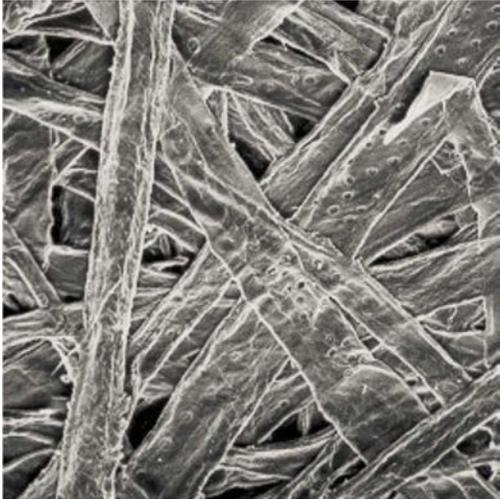
FREEZE DRYING VIA SUBLIMATION

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and transported via any refrigerated means.

Documents exposed to water will continue to experience further damage as the water equalizes or wicks into the paper. The Library of Congress and the National Archives & Records Administration both recommend vacuum freeze-drying by sublimation as the preferred method for removing water from paper.

Water exists in three phases: liquid, solid and gas. It is the liquid phase of water that is most damaging to paper and any media printed on it. The cross-scission and cross-fusion of paper is gradually destroyed by water, and the tiny fibers of the paper separate, and in turn, these fibers no longer serve as an adhesive. Most writing pen inks are water soluble and begin to run or dissolve. Finally, mold now has an optimal environment for growth. Because of this, simply air-drying water soaked paper is not practical.

By allowing paper and books to start drying instead of freezing, additional damage is occurring to the documents. The escaping water molecules separate and break the paper fibers, while rendering the lignin useless. Paper generally swells about 25% greater in volume and 30% or greater in reduced strength, causing it to tear easily.



MICROSCOPIC VIEW OF PAPER

Drying frozen, water-soaked paper via sublimation (or freeze-drying) is slower than evaporation directly from the liquid phase. However, sublimation causes the least amount of damage to the paper and content. The drying rate using sublimation can be controlled by manipulating process parameters, minimally impacting the time difference.

WHAT IS FREEZE DRYING VIA SUBLIMATION?

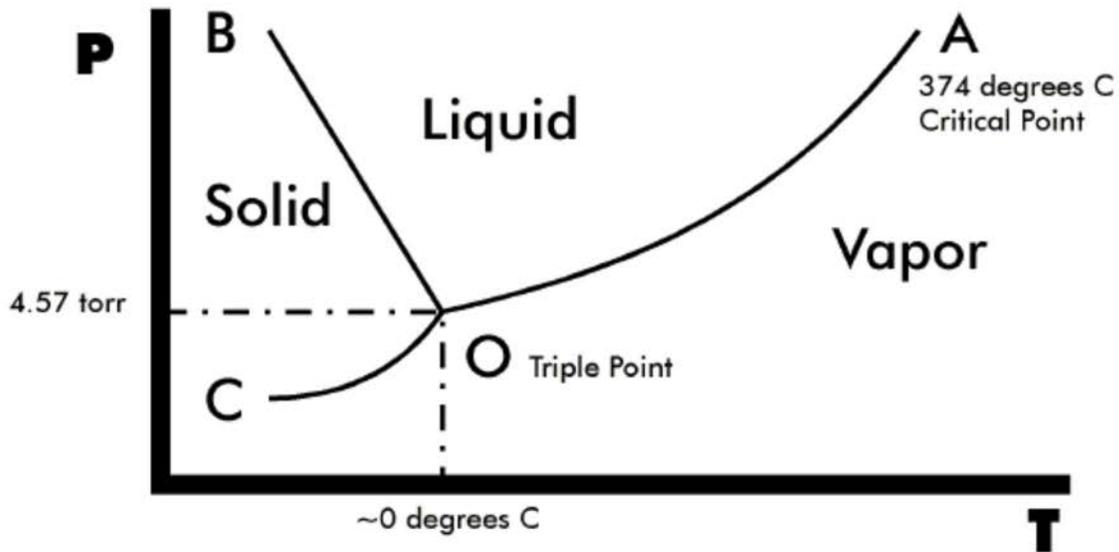
The technical aspects of drying via sublimation (or freeze-drying) can be complex, but the basic principles of the process have been widely understood and accepted for generations.

Sublimation is a phase change, which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and, by the process known as evaporative cooling; the temperature of the ice tends to get colder. Therefore, it is necessary to have heat from outside the system (in our case, electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will too, thus increasing the rate of sublimation. It is important to know that, historic archival documents the heated shelves are optional; the process will simply take slightly longer. Depending on the type and age of the material, some archivists recommend removal of heated shelves for preservation purposes. In order to closely monitor the temperature of the paper, BMS CAT places temperature sensors in multiple boxes throughout each chamber.

Low pressure and a surplus of heat (energy) are essential during the freeze-drying process. However, when the pressure reaches 0.100 Torr (prox) the process becomes adiabatic (without loss or gain of heat). At this point, the process is truly optimized, because all of the electric heat added works to raise the temperature of the ice versus supporting sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid, giving up its latent heat as sensible (apparent) heat, thus the need for refrigeration. As the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr (point O), water can exist in only two states - solid and vapor (depending on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states: solid, liquid and vapor. Remember, all the damage to paper is done during the liquid phase of water. By keeping the pressure below 4.57, we prevent further damage while allowing the ice to sublime (go directly to vapor).

The process of freeze-drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr and adding heat to warm the documents, causing sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber. Periodically, the cold trap is isolated from the chamber and the refrigeration cycle is reversed to heat the coils. Next, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are several cold traps operating "push pull" - while one trap is in defrost; the other is still connected and removing water.

Each item is first HEPA-vacuumed to remove gross accumulations of mold and debris. The technician then uses a dry cloth and/or “chemical sponges” made of pure latex rubber to further remove accumulations from the surface.

Binders are not a good candidate for cleaning or retaining following damage. Instead, information from each binder is retained with the materials that were housed in that binder. Additionally, we photocopy or photograph the original information to prevent confusion when re-filing.

If requested, BMS CAT will also replace file folders made of permanent-durable materials. The old file labels are retained and placed in a plastic bag and hermetically sealed and new file labels are applied to replace them.

Documents that have been wet or contain mold should be cleaned and sanitized. An EPA-registered biocide will be applied to the documents, specifically where visible mold growth has occurred. If documents are exposed to Class 3 Water (“Black Water”), they should be sterilized via Gamma Radiation. Black Water can include sewage, river water, water from area wide flooding and any water that has been present for extended periods of time.

If documents will be returned to a healthcare setting, Gamma Radiation is recommended for the safety of patients who may have compromised immune systems.

CONSIDERATIONS

If your documents are important enough to recover, security must be of concern. Security occurs at several points as demonstrated below:

Customer Site Security	Transportation Security	Restoration Security
<ul style="list-style-type: none">•Additional security should be hired if necessary•Segregate media from other restoration activities•An inventory of the media and documents should be performed and audited•When items are placed in a truck/trailer a security lock should be applied•A dedicated security person should visually monitor the trailer door•Items should not be left alone during transport or when in the trailer•Restoration employees should have visible ID badges with pictures and wear uniforms	<ul style="list-style-type: none">•Trailer doors should be secured with a U.S. Customs High Security Seal•Straight through shipment should be used if common carrier is shipping•Team drivers should be used so no overnight stays are required•Transportation should be performed by a security vetted company with GPS Tracking•Driver background checks should be performed	<ul style="list-style-type: none">•The facility where restoration occurs should be secure•There should be no open doors for visitors to walk in•Employees should be background checked and drug screened•Only employees with a need to access the documents should be allowed to enter the facility•The facility should be alarmed•The processing areas should be segregated from other areas of the building•Ensure that training for employees applicable to your industry has occurred (HIPAA, Sarbanes Oxley, etc.)

PROJECT SCOPE & PROCESS



Sample Scope of Work

George Mason University

400 University Drive Fairfax, VA 20230

LOCATION OF PROJECT

**PROPOSED SCOPE OF WORK
DOCUMENT RECOVERY SERVICES**

Prepared by

**NAME
TITLE**

BACKGROUND

State the nature of the incident. Facts not opinions. Who, what, when, where, why & how type of narrative. How were we brought into the incident? State what the insured has told us of information about the event. State who is involved in the incident. Name the people involved, adjusters, consultants, insured's representatives, attorney's etc.

Insert a few small photos.

INSPECTION BY BMS-CAT

State what was observed measured and inspected. What measurement tools were utilized? Name rooms and square footage affected. Explain the degree of severity of the loss. Try to use quantifiable terms instead of adjectives. 80% of documents appear to be saturated or submersed in water versus "a lot were wet" or "wet documents everywhere".

Were observations and statements were made by others during the inspection. If it is appropriate to quote what was said then include it. This could be direct instructions from the adjuster or insured. Caution should be exercised when others express opinions. If they made statements and you took notes, they should not object. Use discretion.

Our goal is to estimate the order of magnitude to perform Document Recovery Services.

Moisture Content of Paper:

BMS did measure the moisture content of documents. We used a Delmhorst P-200 Archivists moisture meter with paddles. The equipment was new and calibrated.



- MC is within the “**acceptable range**” = < 7% MC (Moisture Content). Many offices may have documents that are 5% MC. These documents will not have to be freeze dried.
- MC is “**higher than desired**” = >7% MC but < 11% MC.
 - Document moisture content is considered “**Humid - Damp**”.
 - Recommended action is to reduce moisture content to the < 7% level within 48 to 72 hours on the premises. This is generally for very small batches of files. Larger quantities should be sent for freeze drying.
- MC is “**Unacceptable**”= >11% MC.
 - Documents are considered “**Wet**” and should be freeze dried via sublimation process immediately.

Our inspection with this meter will save money by eliminating unnecessary freeze drying. Also, we will ensure that documents that require freeze drying will not be overlooked.

SCOPE OF WORK

The **CLIENT NAME** has an immediate and urgent need for clean up and recovery services of sensitive documents. BMS CAT shall attempt to recover, document and salvage as many documents as possible, and shall document and securely dispose/destroy documents which are beyond recovery.

The following will outline BMS CAT protocol.

DOCUMENTS:

- Inventory system and labeling: (see attachments)
 - An inventory system will be utilized that will give each box a unique number that will actually become its own identifier.
 - The number will tell us the building, the floor, the office (or cubicle), and how many boxes from each cubicle.
 - We will also have a section on our spreadsheets and box labels for comments about what the documents are.
 - Such as “Audits 2009, March A through E or Jackson through Lovelace”.
 - Or papers found on floor under Mary Smith’s desk.
 -

BMS CAT INVENTORY AND LABEL SYSTEM	
0.00000	There are 5 decimal places to the right. There one decimal place on the left.
1.00000	The first tow digits will be the floor number. This illustrates floor #1.
1.01000	This is the first office on the first floor. We have used over 90 on one floor.
1.01001	This is the box from the first office on the first floor. We could have up to 999 boxes per individual office.
3.07098	This is box #98, from office #7, on the third floor.

- Recovery:
 - **Insert some photos here if you like. (small)**
 - Cleaning and sanitizing: *Please see attached specifications for cleaning protocol.*
 - Freeze Drying: *Please see attached specification.* We have the world’s largest capacity and the most technologically advanced freeze drying chambers. That

means we get things done fast and there is virtually no further damage to the documents. This is the least costly way to dry paper. This is the process the Library of Congress recommends and the National Archives. The moisture in the documents leaves as a gas in the freeze dry chamber. The documents will be virtually in the same condition as when they were frozen.



- Trimming char: Pages that have the edges burned and still have readable text will have the char cut from the outer edges. This is to protect employees from a safety and health standpoint. The char will break off when handling causing particles of soot to become respirable. The char will be collected and disposed of in a secure fashion.
- Deodorization: Deodorization is a challenging time consuming process. We have found the effectiveness of this process is in the 98% to 99% category. Usually several different processes are employed.
 - Ozone, air exchanges, air filtration and ionization are the methods that must be employed repeatedly to continue to reduce the levels of odor. These processes are aerosolized and must come in contact with the papers to cause a chemical reaction with the carbon based odor. This will reduce the odor with each process and time duration.
 - Files that were on shelves or in file cabinets will deodorize faster and more completely than files that have fallen on the floor. When files have fallen on the floor and are reassembled into another file it is difficult to get the deodorizing processes to the surfaces of the paper as compared to the outer edges of files that were intact on shelves.
- Secure Document Destruction:
 - The normal process is to shred the documents to a size that the text cannot be recognized. When the documents are wet or contaminated they are masticated to render it unrecognizable. The documents are then mixed with other paper media and bound into a bale. The bale is securely

- transported to a chemical pulping unit render the paper to a liquid pulp and processed into recycled paper.
- We then issue a letter of “Certified Secure Destruction”.
 - **OPTION: INCINERATION**
- Sterilization Option: (see attached specification)
- Sterilization should be used on any paper documents that meet the following criteria:
 - Black water-particularly sewage.
 - Area wide flooding with dirty water.
 - Documents that have been submerged in water for a long period of time (weeks).
 - Documents going back into a healthcare setting. In particular to hospitals or patient offices with open wound care.
 - Extreme employee concerns over safe of handling the documents.
 - Employee(s) have file complaints with EPA, OSHA or have filed lawsuits regarding the safety of the documents.
 - Irradiation will *eliminate* microbial hazards. The process will bring the documents to *near sterility*. Destroys E. coli O157:H7, salmonella, Listeria, etc. Used for 40 years to sterilize medical, dental and household products.
 - Safer than pasteurizing milk.
 - Very affordable.
- Chain of Custody and Security:
- BMS will protect the client’s documents from the moment we take custody on the client’s property.
 - Only employees that have a need to access documents will be allowed access to the documents. This applies at the client’s site and at BMS facilities.
 - Truck doors will be closed and locked while loading documents. Or a security person will be present to ensure the documents are not tampered with.
- Transportation:
- Transportation needs have been communicated with the client. BMS CAT recommends a dedicated shipment point to point. **Client can select from the following options, depending on sensitivity of the documents:**
 - **Dedicated shipment directly to BMS facility. Nothing else is on the truck. The trailer that leaves the site is the same trailer that will arrive at BMS CAT.**
 - **Specify no overnight stay. Some clients are concerned that a trailer parked overnight at a truck stop (or elsewhere) is at risk of theft. This specification will trigger team drivers to allow driving straight through.**
 - **Specify NO TRUCK BROKERS only VETTED companies. There is a slight surcharge for this. But this would provide for a trucking**

company that owns its own trucks, has vetted employees and uses a GPS to track the truck.

ADDITIONAL RECOMMENDATIONS

ITEMS NOT INCLUDED IN THIS SCOPE OF WORK

Debris removal from site?

Dumpsters to be provided by client?

Reconstruction?

State work that the client has said they will perform.

State work that the client has stated they do not wish BMS to perform.

SAFETY PROTOCOL

BMS CAT believes that safety must be considered as the number one priority on every project and that work related accidents are avoidable. BMS CAT has developed its own Specific Health and Safety Plan that normally complies with facility health and safety programs consistent with the services normally provided under similar circumstances. This plan will be implemented and enforced in accordance with the policies and procedures of BMS CAT. This plan will address the hazards associated with all aspects of work to be performed during this project. Items covered will include, but are not limited to: personal protective equipment (PPE) requirements, elevated work and OSHA's fall protection standard, equipment maintenance, emergency procedures and electrical hazards.

INSPECTION AND ACCEPTANCE

Client will need to appoint a representative to inspect and accept our work.

TIME FRAME & COST

- Documents will take about 30 days per truck load, depending on how much freeze drying is needed, how much char on the fire singed, how much soot on the non fire singed and deodorizing.
- The actual project cost may be less if the quantities and difficulties of work are less than anticipated.

- The actual project cost may be more if the quantities and difficulties of work are more than anticipated.
- The actual project cost may be more if more work is added to the Scope of Work.

ADDITIONAL NOTES

- ✚ BMS CAT will need an area where supply distribution can be set up in the work area.
- ✚ BMS may have a supply truck on site.
- ✚ BMS may have a refrigerated trailer on site to receive the documents out of the building and stabilize the documents until they can be freeze dried.
- ✚ BMS may place one office trailer on site for administrative staff.
- ✚ BMS may need dumpster for categories waste disposal.
- ✚ BMS may need a generator of adequate size to provide lighting, support air scrubbers and power tools on the site. Electrical distribution panels will be placed on each floor. Power cords will emanate from these panels for string lights, area work lights, etc.
- ✚ Outdoor Portable Toilets may be provided to support an anticipated work crew of ??, plus **CLIENT NAME** support people and security.

WORK EXPERIENCE:

- BMS has responded to many US Government and State Agencies for MAJOR building damage or EXTENSIVE document restoration. Some of these are:
 - Homeland Security-ICE Division.
 - NTSB
 - FBI
 - US Federal Courts.
 - US Probation Department.
 - National Archives and Records Administration (NARA).
 - Library of Congress.
 - US Park Service.
 - Sherriff's Offices, County Records Offices, State Museums, Police Departments, etc.
- BMS CAT is the preferred vendor to most of America's financial institutions for emergency services including document recovery services.
 - J P Morgan Chase.
 - Wells Fargo.
 - US Bank.
 - Fidelity Investments.
 - Moody's Financial Services.
 - Zurich.

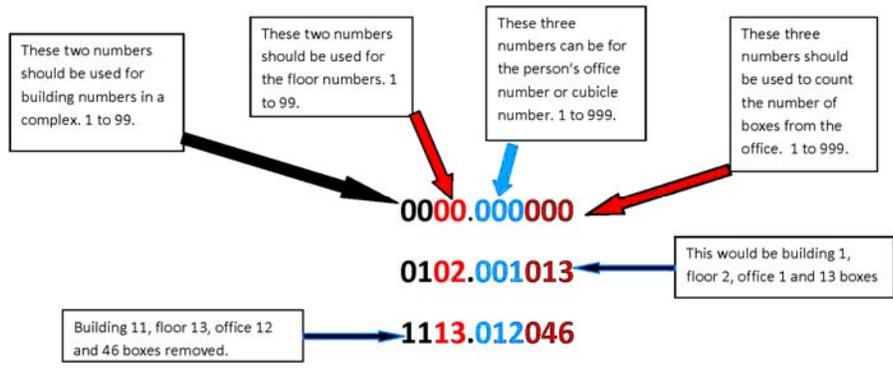
DISCLAIMER

Information in this SOW has been provided by various people associated with this project. We trust our information is accurate. Our recommendations are based on current industry best practices and our many years of experience.

BOX LABEL

BMS Inventory Control # 4.01003	BMS Job # MR4715
Client: Internal Revenue Service Job Location: Austin, TX	Client Reference # B-104
Location of Boxes: Horizontal file cabinet by window.	
Comments: Audit files 2008.	
	Priority 1
	Packed By: JP

INVENTORY NUMBERING SYSTEM



SIMPLE PROJECT BELOW



BMS CAT NUMERIC INVENTORY NUMBERING SYSTEM
9-23-2010

Document Cleaning Protocol (paper)

1-8-2011

1. BMS-CAT shall use the least aggressive methods that will still be effective for the remediation process. These methods would be progressive in detail, on an as needed basis.
2. BMS CAT shall clean all files, file folders, papers, manuscripts, books, etc., that displays visible mold growth in the following manner: each item will first be HEPA vacuumed to remove gross accumulations of mold growth. The technician will then use a dry cloth and/or a latex rubber dry restoration sponge to further remove accumulations from the surface.
3. In the case of books, the spine may be accessed and cleaned with a “bottle brush” or dry cloth as necessary. The fore edge may also require the use a brush.
4. Binders may not be cleaned or retained. Instead, information from each binder will be transferred to a piece of paper which will be stored with the materials that were housed in the binder. In addition, BMS-CAT will photocopy or photograph the original information to prevent confusion about the original label.
5. File folders will be replaced with new ones (**when specified**) made of permanent-durable materials. New file labels will be applied. *(The old files & labels will be retained, placed in a plastic bag and hermetically sealed).*
6. BMS-CAT shall perform all work in a clean room located at our Document Remediation Center, Fort Worth, TX or Chicago, IL.
7. When documents are stuck together, not all of the pages will be separated unless specified by the client. Generally papers that have been modestly wet for short durations will separate easily. Severe sticking may require special treatment such as rewetting with water based solutions. Then technicians will separate the pages with scalpels; “float” the pages onto screens and then individually dry the pages. The final process would be a process to remove the major curves and wrinkles from the pages (*reduces bulk*). This process is available at extra cost and is not included in our base work or pricing.
8. Documents that have been wet should be cleaned and sanitized. The treatment will be an application of an EPA registered biocide in the areas that visible mold is suspected or staining has occurred. This is a recommended treatment should be specified in the Scope of Work and pricing matrix. BM

9. BMS does NOT recommend just freeze drying of wet documents. Cleaning and sanitizing is always recommended. Class one water losses the cleaning and sanitizing can be minimal but it should be done!
10. The documents should be stored in a building with the relative humidity less than 50% to minimize the likeliness of mold amplification.
11. When documents are returned and staff personnel start to handle the papers the quantity of airborne particulate of paper fiber is high due to staff trying to pry papers apart, extensive handling of papers and the fact that the papers may be somewhat more fragile. The staff should have increased air flow and filtration when handling extensive amounts of documents; consider wearing gloves and possibly a dust mask or N-95 respirator.
12. Documents exposed to class 3 "black water" should be sterilized via Gamma Radiation. This includes sewage water, river water, water from area wide flooding and documents that have been wet for extended periods of time.
13. Documents that that have had extensive contamination and are going back into a health care setting where there is open wound care should also be sterilized via Gamma Radiation.

STERILIZATION of DOCUMENTS

There are three options for sterilization: heat, chemical and radiation.

HEAT:

(d) Typically one bakes materials in the an oven at

- (i) 171°C (340F) for at least one hour
- (ii) 160°C (320F) for at least two hours
- (iii) 121°C (250F) for at least 16 hours

CHEMICAL:

Sterilants are specialized chemicals, such as glutaraldehyde or formaldehyde, which are capable of eliminating all forms of microbial life, including spores. The term sterilant conveys an absolute meaning; a substance can not be partially sterile.

Some species of pathogenic bacteria are capable of adapting to hostile conditions by forming a thick outer and chemically impervious shell. They transform from their normal or vegetative state to form spores and are difficult to eliminate since they can resist the effects that sanitizer or disinfectant exposures have on bacteria. Elimination of spores is carried out by specialized chemical agents or physical means, and requires several hours for total microbial destruction.

Some of the factors requiring consideration are whether they are the easy to kill bacteria in their vegetative state or whether they are present on the surface as highly resistant spores. A major consideration that also needs to be addressed is whether other materials such as blood, feces or organic matter are present within the bacterial environment. These contaminants reflecting an unclean surface can rapidly inactivate some germicides, such as hypochlorites, rendering them ineffective for their intended use.

RESISTANT BACTERIA AND SUB-LETHAL SANITIZER DOSAGE

In any given population, bacteria exist within a wide range of sensitivities towards a specific sanitizer dose. Under normal conditions of exposure, sanitizers are capable of destroying 99.999% of the bacteria present. In essence, a surface which initially harbor 1,000,000 bacteria per square centimeter prior to sanitation may be expected to contain only 10 microorganisms per square centimeter afterwards. In such a scenario, the objective of the sanitation process has been achieved in the sense that the total bacterial population has been reduced to safe levels.

What may not be as evident is that the remaining 10 surviving microorganisms capable of withstanding the sanitization procedure have the potential to act as a source of future contamination. If on subsequent clean up and sanitization, proper dosing or procedures were not adhered to, or the surface has not been adequately rinsed, the 10 surviving bacteria will survive a second cycle of sanitization, as will other bacteria. Over a period of time and involving several cleaning and sanitization cycles, the resistant survivors have the capacity to proliferate, especially during periods in which they are exposed to food product. When this occurs the food processing plant is now dealing with a bacterial population which no longer responds to sanitizing doses of germicide, resulting in a failure of the sanitizer to achieve its objectives. In essence by applying the sanitizer at less than lethal doses or for shorter intervals, the end result is the same as if selective culturing of a resistant strain had been carried out with the possibility of the surface becoming enriched with pathogens and hard-to-kill microorganisms.

A surface which is allowed to deteriorate to such a level of poor hygiene needs to be "shocked", by switching to high doses of an alternate product such as hypochlorite and dosing at disinfectant levels. It is not uncommon to require the use 400+ ppm of available chlorine over a period of a week before the surface can be returned to the desirable and bacterial free state.

BIOFILM FORMATION

Biofilm formation is another mechanism, in which bacterial resistance towards a sanitizer can occur. As previously indicated, proper cleaning is essential before effective sanitization can occur. Certain bacteria secrete a polysaccharide which is a constituent of their membrane. These secretions are very sticky and attach themselves firmly to metal surface. The resulting film so formed containing trapped bacteria is referred to as a biofilm. Bacteria which are responsible for biofilm formation may in themselves not be harmful or pathogenic. However, the gelatinous matrix which they excrete is capable of attracting to itself and embedding pathogenic bacteria, such as *Listeria monocytogenes*. Although the pathogens themselves do not contribute towards the integrity of the film, they nevertheless are capable of contaminating products which come into contact with the surface.

Biofilms are often very difficult to remove, since their matrix is very resistant to chemical attack by detergents. They often require higher than normal concentrations of alkaline detergents and strong oxidizing levels of sodium hypochlorite in order to remove them. Several applications may be required before the biofilm can be totally removed.

RADIATION: (all information is provided from Sterigenics)

For over forty years, Gamma Radiation has been highly regarded as a safe, cost-competitive methodology for the sterilization of healthcare, products, components and packaging. Today, spurred in large measure by its compatibility with single-use,

disposable medical devices, Gamma Radiation is being used by an ever increasing percentage of the healthcare industry. As a result, Gamma Radiation, which once accounted for only 5% of the sterilization market, has grown to nearly 50%.

Simplicity and reliability, along with budget sparing cost-effectiveness, are the driving factors behind the industry's conversion to Gamma Radiation.

The Nature of Gamma Radiation

A form of pure energy that is generally characterized by its deep penetration and low dose rates, Gamma Radiation effectively kills microorganisms through out the product and its packaging with very little temperature effect.

Penetrating Sterilization, Even with High-Density Products Gamma Radiation is a penetrating sterilant. No area of the product, its components, or packaging is left with uncertain sterility after treatment. Even high-density products, such as books and paper files can be successfully processed.

The source of the radiation is Cobalt 60. There is no residue after the process and there are no visible changes to the documents.

When to use this process?

- Black water-particularly sewage.
- Area wide flooding with dirty water.
- Documents that have been submerged in water for a long period of time.
- Documents going back into a healthcare setting. In particular to hospitals or patient offices with open wound care.
- Situations where there are extreme employee concerns over safety of handling the documents.
- Irradiation will *eliminate* microbial hazards.
- The process will bring the documents to *near sterility*.



BMS CAT

1.800.433.2940
www.bmscat.com

- Destroys E. coli O157:H7, salmonella, Listeria, etc.
- Safer than pasteurizing milk.
- Entire boxes of documents are evenly sterilized.
- The source of radiation is gamma Cobalt 60.

FREEZE DRYING OF PAPER DOCUMENTS (WHY AND HOW)

BACKGROUND:

The vapor pressure of water at 100°C is 760torr (1 atmosphere).

The vapor pressure of water at 0.0099°C is 4.579torr (triple point).

The vapor pressure of ice at 0.0099°C is 4.579torr (triple point).

The vapor pressure of ice at - 20°C is 0.776torr

The vapor pressure of ice at -25°F (-31.7°C) is 0.286torr [refrigerated warehouse]

BODY:

In consideration of all of the above, dehydration is accomplished faster at 100°C and in an open vessel. Baking wet documents in an open oven will certainly dry them at the fastest rate. Unfortunately, it is the liquid phase of water that is most damaging to paper and the graphical and printed media upon it. The cross-scission and cross-fusion of paper is rapidly destroyed by water. Also, most writing pen inks are water soluble. Drying water soaked paper at atmospheric pressure is not practical. This conclusion is determined without further consideration of the mold and fungus growth potential.

Freezing water soaked paper stops the mechanical disintegration of the paper, the dissolving of inks, and the potential for mold and fungus growth. Once frozen, paper can remain in this state indefinitely and can be transported via any refrigerated means.

The dehydration of frozen, water soaked paper via sublimation is slower than rapid evaporation from the liquid phase, but causes the least damage to the paper structure and content. The rate of dehydration via sublimation can be controlled by manipulating process parameters.

When ice is left in the open, evaporation takes place so long as the gas space around it can receive the water molecules or vapor. Therefore, if the gas space is continually maintained at a low pressure, it can continually accept more water vapor, hence the vacuum chamber and requirement for low pressure.

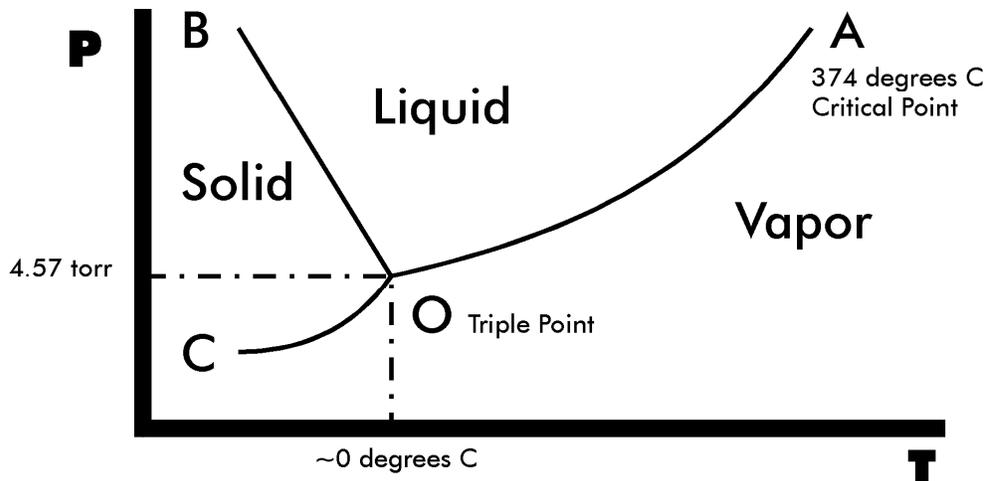
Sublimation is a phase change which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and by the process known as evaporative cooling, the temperature of the ice tends to get colder, thus the need for heat from outside the system (electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will rise, thus increasing the rate of sublimation.

Low pressure and a surplus of heat (energy) are essential for this process. However, when the pressure reaches 0.100torr (prox) the process becomes adiabatic (without loss or gain of heat). And; the process is truly optimized, since all of the electric heat added works to raise the temperature of the ice and not to support sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid and gives up its latent heat as sensible (apparent) heat, thus the need for refrigeration. And; as the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

The optimum controls are 1) pressure at or below 0.100torr and 2) an ice temperature close to the triple point temperature (-0.1°C).

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for Water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid, or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr

(point O), water can exist in only two states - solid and vapor (depends on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states, solid, liquid, and vapor. Since all the damage to paper is done by the liquid phase of water, keeping the pressure below 4.57, prevents further damage while allowing the ice to sublime (go directly to vapor). The process of freeze drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr, and adding heat to warm the documents and cause sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber. Periodically, the cold trap is isolated from the chamber, the refrigeration cycle is reversed to heat the coils, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are several cold traps operating "push pull" - while one trap is in defrost; the other is still connected and removing water. Point A, at 374 degrees C is called the critical temperature of water. Above this temperature water exists only as gas and no amount of pressure can reduce it to liquid.

The basic process consists of immediately inventorying and freezing wet paper documents to stop the damage. If not checked, the damage mechanisms due to the liquid phase of water cause swelling of the volume to the point that bindings split, paper cockles, pages block (stick), water soluble inks run, and fungi can grow rampant.

The frozen documents are placed into the computer controlled freeze dry chamber where they are dried in such a way that water never enters the liquid phase again to cause more damage. Any deviation of the process will cause an alarm to the operator, even after normal working hours. The theory of the process is described above.

One important fact to note is that freeze drying does *not reverse damage*. ***Speed is of the essence*** in freezing the damaged documents. The freeze dry process is recognized as the most efficacious method of recovering wet books with minimal damage. "Slick" surface paper (sizing) is the paper most likely to block with the pages sticking together. Freeze drying is the *only* process which can save this type of paper. Once blocking occurs, there is no effective way to unblock.

Freezing paper and freeze drying insures maximum recovery possible in the face of a disaster.



DAILY UPDATE

Customer Name
Address
City, State, Zip

TODAY'S DATE:

00/00/2019

SIGNIFICANT CHANGES OF SCOPE, SCHEDULE OR COST:

Insert text here

PROJECT NUMBER:

00000000

CLAIM NUMBER:

00000000

PROJECT DIRECTOR:

Insert Text Here

PROJECT MANAGER:

Insert Text Here

FIRST DAY OF PROJECT:

Insert Text Here

ESTIMATED PROJECT COMPLETION DATE:

For Mitigation:

For Reconstruction:

LOSS PHASE:

Insert Text Here

DAILY PROGRESS NOTES:

- Insert Text Here
- Insert Text Here
- Insert Text Here

ANY UNFORESEEN INTERRUPTIONS/DELAYS:

- Insert Text Here
- Insert Text Here
- Insert Text Here

PLANS FOR TOMORROW:

- Insert Text Here
- Insert Text Here
- Insert Text Here

EQUIPMENT & PERSONNEL COUNTS (APPROXIMATE):

- Insert Text Here
- Insert Text Here
- Insert Text Here

PROJECT SPECIFIC NOTES (client requests, site issues, etc.):

- Insert Text Here
- Insert Text Here
- Insert Text Here

Micro Film (microforms) Recovery Protocol©

FILMBASES:

Most microforms will have film bases of cellulose acetate or polyester. Cellulose acetate film, touted as safety base film and non-flammable, will still naturally degrade over time. This degradation process is accelerated when acetate film is not properly stored. Polyester is the current film base. Both stable and durable, black-and-white polyester film has a long life expectancy.

MICROFORM TYPES:

Microforms come in a number of formats. The most familiar of these are 16mm or 35mm roll microform and microfiche, the latter resembling a plastic file card. Roll microform, in either 16mm or 35mm formats, can be cut into short strips and housed in clear "jackets" to produce a microfiche. The emulsion side of this film is matte, while the non-emulsion side is glossy.



HANDLING OF FILM:

Acidic oils and fingerprints can damage film. BMS technicians will be cautious when handling microforms. Films will be handled by the edges or leaders.

EMERGENCY STABILIZATION:

Once wet, microforms must not be allowed to dry or they will stick to together and to the enclosures. BMS CAT will keep the microforms wet until each batch is ready to be processed.

RECOVERY PROCESS:

- ↗ Microform will be inspected for any evidence that they are sticking.
- ↗ When evidence shows they are sticking they will be immersed in a solution of de-ionized water to soften the emulsion. No effort to separate the Microform shall occur at this time.
- ↗ When the emulsion has adequately softened the Microform will be separated. It is important to note that some sticking of the Microform is irreversible. Meaning that the two surfaces have bonded with each other and the emulsion will not soften enough to separate the Microform without damaging the bonded section.
- ↗ Microfilm will be processed in BMS CAT's proprietary microfilm processing machines. MS CAT has worked with Kodak technicians to adapt Kodak microfilm processing equipment for emergency recovery. BMS also uses and has adapted Kodak chemicals. The following is a summary of some of the steps the microforms will go through:



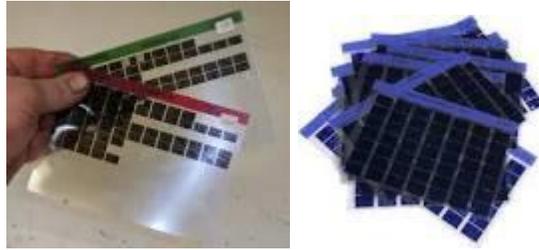
- Wetting and cleaning solution of surfactants to remove sediment and mold spores.
- Wetting solutions of de-ionized water anti-microbials to rinse and sanitize.
- Kodak Emulsion wetting stage and resetting stage. This resets the film emulsion and helps hide scratches.

- During all of the above stages the microfilm passes through a series of rollers and squeegees to ensure that all surfaces areas are uniformly processed.



- Dry air stage to dry the Microform.
- Re-wound onto the reel.

↗ Microforms (non rolls) such as jacketed fiche will be cleaned following the above protocols. They may be cleaned by hand process or mechanically assisted. However, the outcome will be the same as the above.

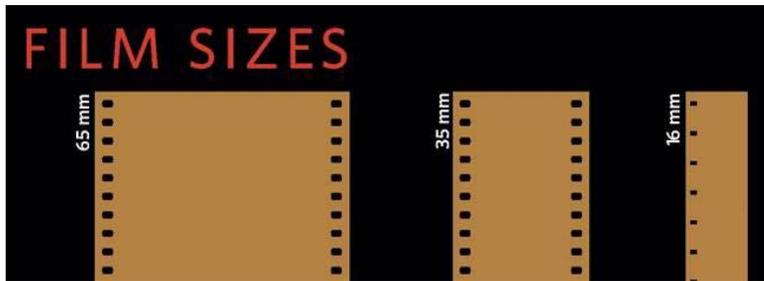


↗ Microfilm and microforms will be checked for quality control on a sampling basis.

Movie Film Emergency Protocol and Processing Procedures ©

FILMBASES:

Current movie film is made out of a polyester base substrate. This is the carrier that the film emulsions will be layered on. Film prior to 1950 could be made out of cellulose nitrate. Cellulose nitrate material is very unstable and very flammable. Cellulose acetate film (introduced in 1950, touted as safety base film and non-flammable, will still naturally degrade over time. This degradation process is accelerated when acetate film is not properly stored. Both stable and durable, polyester film has a long life expectancy.



Movie Film 65mm & 70 mm

For projection, the original 65 mm film is printed on 70 mm (2.8 in) film. The additional 5 mm are for 4 magnetic strips holding six tracks of sound. Although more recent 70 mm prints use digital sound encoding, the vast majority of existing and surviving 70 mm prints predate this technology.



Color Film

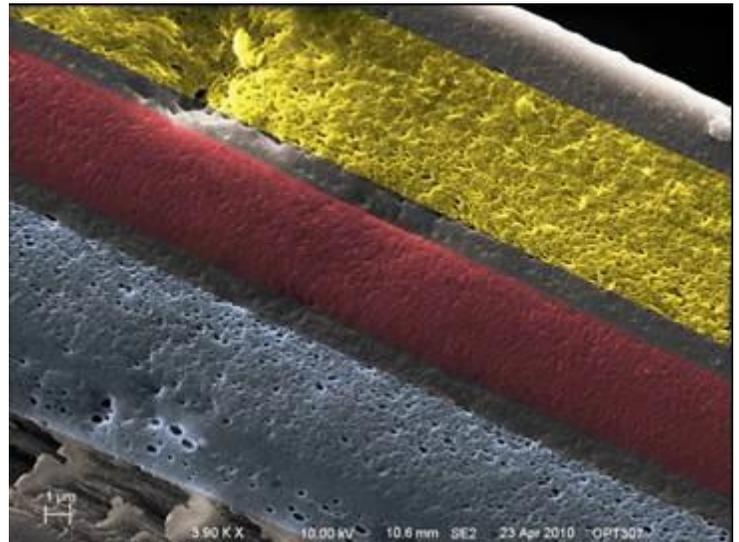
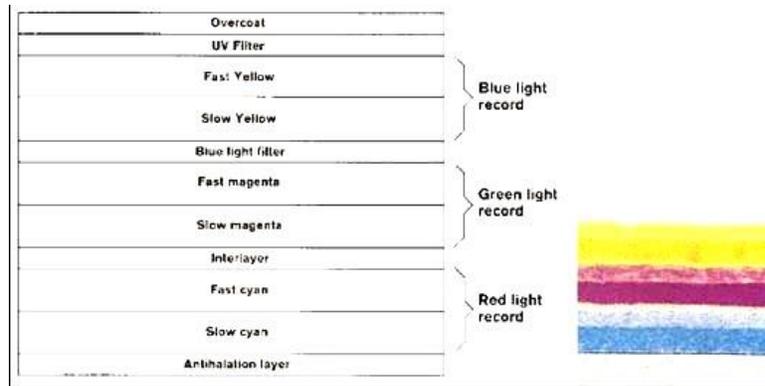
The upper green-sensitive layer contains a colorless coupler that is converted to magenta dye during development, proportional to green-light exposure. The next emulsion layer is red-sensitive and contains a colorless coupler that forms a cyan dye, proportional to red exposure.

The bottom emulsion layer is blue-sensitive, and contains a colorless coupler that forms a yellow dye, proportional to blue exposure. The conductive anti-static layer and scratch resistant T-coat with lube are process surviving and retain their properties after processing.

Developing techniques have evolved and been modified over the years for this type of color movie film. Previously it was thought that the best way to “clean” an old movie film was to simply reprocess it through the entire film development process. As if the film was undeveloped. This method would certainly clean it. However, Kodak found a change in density of the film due to the over the exposure of the film would occur, resulting in some loss of certain color pigments.

Based on previous experience BMS does NOT completely reprocess the film with all of the traditional chemicals and steps. BMS will wash the film, perform a final rinse (with the appropriate Kodak replenisher solution) and dry the film in a temperature controlled environment. This will result in a clean film with no degradation of the film quality. BMS has worked closely with former Kodak film technicians with 35+ years’ experience to fine tune this process.

Also, another older technique that was employed was lubrication of the film by waxing processes. This was generally done on the edges of the film. Should that process have previously been used, the processes we are using should not remove the wax lubricant. Waxing was recommended for films that were used extensively. For archival purposes we do not recommend utilizing the wax process. Therefore, BMS CAT will NOT add a lubricating

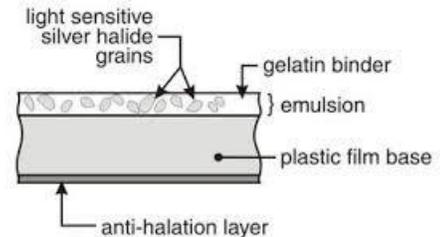


wax process in our processing of movie film.

BMS CAT has extensive experience in processing MASTER copies of movie film

Black & White Film

The emulsion of raw black-and-white motion picture film contains silver salts that are converted to metallic silver particles during processing. With black-and-white stock, the emulsion side of the film appears duller and more textured than the shiny and smoother base side. When properly processed and stored, silver images are very stable.



35mm Film

In 1889, celluloid-based transparent, flexible 35mm film was invented by the Rev. Hannibal Goodwin. His invention was promoted by George Eastman on a wide-scale for commercial use. IN 1907 the Academy of Motion Picture Arts and Sciences officially made 35mm the industry standard.

In 1948 Kodak introduced the 35mm triacetate safety base film to replace the flammable cellulose nitrate base. This process was completed in 1952.

There are many variation of this film known as 2-perf, 3-perf, 4-perf, Super 35, Panavision Super 35, Superscope and different lengths, etc.

8mm, 16mm Movie Film

The film gauge most frequently found in American archives, libraries, and museums is **16mm**. Corporations adopted 16mm as a convenient gauge for employee training films. Soon an industry developed for producing 16mm instructional and educational films for businesses, schools, churches, and clubs. With the advent of portable video equipment in the 1970s, many 16mm users began switching to video. Thus, most 16mm films in archives, libraries, and museums date from the 1920s through the early 1980s.

8mm film was for consumers and oftentimes was in a cartridge. Most other film was in reels. These films are in archival repositories as well.

HANDLING OF FILM:

Acidic oils and fingerprints can damage film. BMS technicians will be cautious when handling movie films. Films will be handled by the edges or leaders. Gloves will be worn

when appropriate. The film will be kept refrigerated until stabilization or processing is performed.

Archival film can become brittle. If there are film breaks BMS will splice the film together with the appropriate materials and methods.

EMERGENCY STABLIZATION:

Once wet, movie film **must not be allowed to dry** or they will stick to together and to the enclosures. BMS CAT will keep the microforms wet until each batch is ready to be processed.

The recommended field emergency procedure is to line sturdy boxes with double plastic bags. Place the movie film inside the plastic bags. Pour ½ quart of distilled or de-ionize water over the films. Seal the bags tight. Seal the box securely and prepare for shipping. Store refrigerated if possible before shipping.

Mold on Film:

A film stored under humid conditions can become a host for mold, mildew, and fungus. Generally the organisms start the attack from the outside edge and make their way into the film roll. These biological agents can cause significant damage to the emulsion.

The growth initially appears in the form of matte-white spots and eventually grows into a lacy, web like pattern. Once the organisms have eaten into the emulsion, however, the image loss is irreversible. BMS CAT can stop this degradation and contamination by processing the film on our Kodak film processing equipment with EPA registered biocides added to the process. It would be recommended then to store the film in a cold and dry environment.



RECOVERY and PROCESSING

- ↗ Movie film will be inspected for any evidence of sticking.
- ↗ When evidence shows they are sticking the will be immersed in a solution of de-ionized water to soften the emulsion. No effort to separate the movie film shall occur at this time. There are other techniques that can be used to release movie film that has slight sticking. These techniques are proprietary but they are in accordance with industry standards.

↗ When the emulsion has adequately softened the movie film will be separated. It is important to note that in some cases sticking of the movie film is irreversible. Meaning that the two surfaces have bonded with each other causing a chemical reaction and the emulsion will not soften to separate the movie film without damaging the bonded section. I may be able to be pulled apart but there will be a damaged section of film. It will be playable with a loss of visual and audio media at that section.

↗ Movie film will be processed in BMS CAT's proprietary Kodak movie film processing machines. MS CAT has worked with Kodak technicians to adapt Kodak film processing equipment for emergency recovery and processing. BMS also uses and has adapted Kodak chemicals. The following is a summary of some of the steps the movie film will go through:

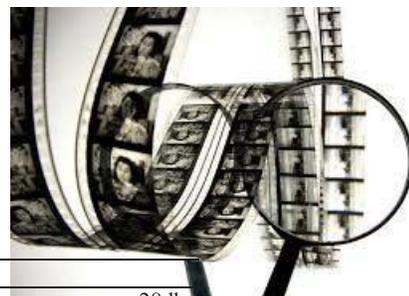
- Wetting and cleaning solution of surfactants to remove sediment and mold spores.
- Wetting solutions of de-ionized water anti-microbials to rinse and sanitize.
- EPA registered biocides are added when appropriate.
- Kodak Emulsion wetting stage and film emulsion resetting stage. This resets the film emulsion and helps hide scratches.
- During all of the above stages the film passes through a series of rollers and squeegees to ensure that all surfaces areas are uniformly processed.
- Dry air stage to dry the movie film.
- Re-wound onto the reel.



↗ Movie film will be checked for quality control on a sampling basis.

Film Width, Type, Lengths and Weights

70 mm Print Films	Color	2500 ft	2	
65 mm Camera Films	Color	1000 ft	2	
65 mm Intermediate Films	Color	2500 ft	1	28 lb
35 mm Camera Films	Color/B&W	200 ft	20	27 lb
		400 ft	10	26 lb
		1000 ft	5	30 lb
		2000 ft	3	34 lb
35 mm Intermediate Films	Color/B&W	400 ft	10	24 lb
		1000 ft	5	29 lb



References:

-  **Kodak**
-  **National Archives and Records (NARA)**
-  **Library of Congress**
-  **Association of Movie Image Artists (AMIA)**
-  **The Society of Motion Picture Television Engineers**
-  **Internet Encyclopedia of Cinematographers**
-  **The National Film Preservation Foundation**

BMS CAT

Project Scope and Process

PERIOD OF PERFORMANCE: One (1) year from Effective Date of contract with four (4) successive one-year renewal options (or as negotiated).

X. BACKGROUND: George Mason University has an estimated enrollment of 36,000 students. The Mason Libraries consist of many libraries under one administration. The main library, Fenwick, and Gateway Library in the Johnson Center, as well as the University Records Center in the Facilities Warehouse are located on the original campus in Fairfax City. The Arlington Campus Library is located at 3401 N. Fairfax Dr., Arlington and the Mercer Library at 10900 University Blvd., Manassas. The library physical holdings consist of approximately 1,245,000 volumes, including approximately 156,000 bound journal volumes, and 310,000 government documents. In addition, there are 215,000 cartographic materials, 16,000 musical scores, 2,100,000 microforms, 24,000 audio and 32,000 film and video materials. The University collections' estimated value is in excess of \$100 million dollars and include irreplaceable historic, cultural, and research property. The annual budget for materials is over \$9,800,000, of which over 75% goes toward electronic resources.

There have been incidents of water intrusion in all campus buildings housing library collections (Fenwick, Mercer, Arlington, and University Records Center) in the past that have impacted the libraries' materials as well as donated materials requiring remediation before entering the building so as not to cross contaminate.

XI. STATEMENT OF NEEDS: The contractor shall furnish all labor, materials, and equipment as necessary to provide "as needed" emergency library disaster recovery services, including, but not limited to:

- on-site assessment of damage resulting from one or more natural or man-made catastrophic events.
- stabilization of building environments to minimize damage to collections resulting from mold growth.
- careful handling and secure removal of damaged library materials, papers, and research materials from disaster sites.
- environmentally controlled, round-trip transportation to appropriate storage venues for subsequent freezing, air drying, vacuum freeze drying, or shipping to firms for single-item conservation treatment, as appropriate.
- cleaning or smoke removal.
- building refurbishment.
- relocation of treated collections within their appropriate facilities.
- other related services as may be required to responsibly recover material owned by George Mason University Libraries.

This contract is primarily intended for use on mostly paper-based library or archival materials including, but not limited to, books and papers, manuscripts, administrative or other records and photographs. May also include microforms, films, videos, CDs or floppy discs, but not intended for recovery of electronic files or equipment, such as PCs or servers.

This contract is not intended for other conservation services, such as paper repairs, de-acidification or rebinding, services such as roof repair, plumbing or electrical work, mold abatement of buildings or services deemed to be hazardous in nature, such as asbestos abatement.

In addition to the stabilization, recovery, and cleaning of collection material, the cleaning of storage furniture (e.g., shelving, map cases, gasketed cabinets, etc.) and furniture (e.g. reading room tables, book carts, etc.) is within the scope of this contract.

In this contract, the University refers to stabilization as those activities that remove damaged materials from the disaster site and stabilize them for subsequent recovery efforts. Stabilization activities may include removal from emergency area, drying of collections in place, transportation to an off-site stabilization facility, or freezing of wet collection material. Recovery is defined as those activities that enable the material to be returned to its former condition or at a minimum be made fully accessible again on sanitized furniture in appropriate housing.

A. SERVICE RESPONSE REQUIREMENTS:

1. As part of the emergency response, describe how the Contractor shall:
 - a. Be reachable 24 hours/7 days a week/365 days a year to respond to a call for services.

BMS CAT Responses are in bold letters.

BMS CAT is a 24/7/365 company. GMU would have a dedicated national account manager, local account manager, along with a call center to support calls at any time. This is the core of our business.

b. Respond to disaster scene as soon as possible but no later than within 12 hours of being contacted by the Contract Administrator or their designated representative to assess the condition of the collections and work.

BMS CAT would be able to conduct a site assessment within 12 hours of the event. With our local office located in the WDC region, this will ensure a rapid response.

c. Be responsible for assigning sufficient personnel to the performance of this contract to ensure timely completion of all requirements. **BMS CAT will have operationally experienced staff available for a quick plan of action that will be provided within the 24 hours. Many times, our staff is able to provide guidance immediately.**

d. Have scalable capability and resources (e.g., facilities, manpower, management, equipment, supplies, transport, freezers, and logistics) to manage all types of emergencies that may affect the University collections regardless of size.

BMS CAT has a large staff of qualified document cleaning professionals. This staff is dedicated to this function and does not work on other jobs – they are document cleaning professionals. The project manager assigned to the job will be responsible for ensuring the timely completion of the job. BMS CAT will plan for labor and materials at appropriate levels to meet work requirements in the specified time limits. BMS CAT's core principles include quality work, and our processes are developed to do just that.

e. Have the experience, qualifications, and expertise to provide professional and standard methods of handling, stabilizing, packing, transporting, treating and rehousing, labeling and tracking (including the use of bar coding) the full range of library and archival materials in disaster situations. *** See narrative below**

f. Have the experience, qualifications, and expertise to provide professional and standard methods for mold remediation and other decontamination of collections and storage furniture. **BMS CAT is a leader in water & fire restoration as well as mold remediation and can provide those services to GMU as needed.**

g. Have all staff with the necessary qualifications and skills or shall have a network of vendors in place for additional resources. However, while some parts of the stabilization operations may be sub-contracted (for instance, to provide for increased freezer storage space), the coordination and majority of stabilization operations are expected to be conducted by the Contractor. All subcontractors for treatment or stabilization or housing must be agreed upon by Mason - see also Section XVI – Special Terms and Conditions. **BMS CAT complies.**

h. Have adequate numbers of trained staff with the skills and experience to assess and sanitize (i.e., clean, disinfect, kill mold, and remove rust and other stains) designated storage furniture including shelving, map cases, and gasketed cabinets.

BMS CAT staff is trained to professionally and carefully handle damaged library collections. Our long list of references above attests to the fact that we have worked on many delicate document jobs over the years. We have a protocol for stabilizing damaged media quickly.

i. Use climate-controlled, secure facilities. The Contractor is responsible for all aspects of security for Mason's materials in storage.

j. When specified by Mason, pack, ship, and store materials in protective totes and pallets (or other containers subsequently specified by Mason) that are clearly marked according to a numbering and tracking scheme approved by Mason.

k. Manage the total work effort associated with the required services to meet all objectives. Such management includes but is not limited to planning, scheduling, cost projecting and accounting, establishing and maintaining documentation and records, report preparation, and quality control.

l. Implement all necessary work control procedures to ensure timely accomplishment of work, as well as to permit tracking and reporting work in progress.

m. Establish and maintain an internal comprehensive Quality Control program. The QC program will apply to all services rendered.

n. Maintain consistent, professional, and responsive communication throughout the project.

2. As part of the stabilizing collection material, describe how the Contractor shall:

- a. Provide professional advice to the Contract Administrator or his/her designated representative on the most practical and efficient options for the stabilization and recovery of the collections and storage systems within 36 hours of being contacted (or within 24 hours after the site visit). **BMS CAT complies to all of the above requirements.**
- b. Provide expert consultation on site to assess the condition of the collections and work with Mason's preservation experts to determine the type and amount of stabilization effort required as soon as the affected site is accessible.

BMS CAT has the ability to provide expert consultation on-site to assess the condition of the collections and work with the library experts to determine the type and amount of stabilization effort required as soon as the affected side is accessible. BMS CAT does hundreds to thousands of document jobs per year and can provide expert consulting and results. This is not a side business or outsourced service like some other restoration companies.

- c. Provide all trained labor, experienced supervision, approved material and supplies, and agreed upon equipment needed for cleanup in response to emergency calls at any of the Mason libraries.
- d. Collaborate with Mason staff to create a stabilization plan documenting stabilization priority based on a variety of factors including type and extent of damage, type of material, rarity and/or importance of material, and outlining the methods to be used for retrieving, stabilizing, packing, and transporting designated damaged materials. To the extent possible, identify and inventory all affected materials and keep materials organized.

BMS CAT has professional staff and equipment for quick clean up. Our core business is responding to emergency calls. BMS CAT staff is trained to handle damaged library collections professionally and carefully. Our long list of references above attests to the fact that we have worked on many delicate document jobs over the years. We have a protocol for stabilizing damaged media quickly.

BMS CAT has the ability to provide all necessary secure space, transportation, labor, equipment and supplies to respond immediately to a variety of needs, including water extraction, library, archival, and/or museum collections stabilization.

BMS CAT will not commence work or use any treatment methods that are not first approved by GMU. BMS CAT will obtain approval from GMU before using any methods or treatments, repair, etc.

- e. Be able to provide a stabilization plan on very short notice, striking a balance between the need for urgently removing affected collection material and doing so in a coordinated and well-thought-out manner.
- f. Collaborate with Mason preservation and curatorial staff, provide stabilization activities that result in proper packing and transportation of all materials being moved to temporary Contractor facilitated off-site storage location for stabilization or treatment.
- g. Remove and stabilize materials in a timely manner to eliminate the risk of further damage to the collections. To the extent possible, the stabilization of materials should begin within 24 hours of the emergency and should be completed per the schedule outlined in the stabilization plan.
- h. Provide all labor, material, and equipment for the safe and secure stabilization and transportation including dry cargo transport trucks or freezer trucks as needed and packing supplies, pallets, and materials needed to secure palletized containers.
- i. Stabilize the affected collections items for transportation including providing all boxing, bagging, and other supports and containers necessary.
- j. Establish an inventory of all affected items removed from the affected space as they are removed from a collection area for stabilization and treatment.

BMS CAT will treat each job as a custom situation. Each job will have different types of media, quantity, and degree of damage to remediate. BMS CAT will put together a comprehensive plan with appropriate priorities to stabilize the materials that have been affected. We will work with GMU to determine priorities and incorporate those in our SOW. We will securely transport and track items so there is never a period of time where items cannot be located or retrieved on an emergency basis. At the time of plan, we will outline all details of proposed procedures, equipment, tools and cleaning materials.

BMS CAT has a bar code system to track all collection material as it is repacked, transported and stabilized. Our teams are trained in “Chain of Custody” processing to be sure that all materials are tracked and checked at each point of the project. The project does not continue until all materials are properly checked in at each point. BMS CAT will typically perform a duplicate inventory to ensure both systems match and account for each item.

BMS CAT utilizes an inventory system that gives each box a unique number that will become its own identifier. The inventory number will tell us the building, floor, office (or cubicle) and how many boxes were removed from each space. On both the box label and corresponding spreadsheet, there is a section for comments describing the documents.

k. Provide consistent tracking of all collection material as they are repacked, transported, stabilized, treated and returned to Mason, ensuring the ability to locate an item at any point in time of stabilization and recovery activities.

BMS CAT is very experienced in packing out customer media. BMS CAT will provide professional labor to box-up, bag, wrap, inventory, and track items for transportation. This is core to our service and something we perform on a weekly basis for our customers. This is not a side business or once a year service provided like some of our competitors may do.

BMS CAT is able to provide a detailed inventory along with a clear statement of all item treatments. As part of the inventory process described above, we are able to supply customers with a detailed description of the items placed in the restoration process.

l. Provide environmentally controlled transportation to appropriate storage venues for the stabilization and/or subsequent recovery of the affected collections items.

m. Provide secure freezer storage for the damaged materials in the event all available appropriate drying equipment is in use, or if the amount of material exceeds the Contractor’s drying capacity.

BMS CAT provides environmentally controlled trailers (refer trailers) for properly storing items for the stabilization and/or subsequent recovery.

3. As part of the recovering collection material, describe how the Contractor shall:

a. Collaborate with the Contract Administrator or his/her designated representative to create a recovery plan before the recovery operations begin. This document should contain a description of the estimated quantity, value category, and type of affected collections items, the comprehensive condition assessment of damaged collections, proposal for the safe and secure recovery of the collections, treatment proposals and documentation, rehousing and labeling plans, proposed recovery schedule, tracking system, proposed return schedule, and a detailed associated cost estimate. The plan must also include details of proposed procedures, equipment/tools, goods/materials to be used and the name(s) of the supervisor and staff that will complete the work along with the estimated cost for labor hours, equipment/tools, and goods/materials. If fewer than 1,000 volumes are affected, the final recovery plan should be submitted within 14 days; if more than 1,000 volumes, within 30 days.

BMS CAT will manage the entire work effort associated with required services. You will have an account manager and project manager assigned that will provide a statement of work prior to work commencing and periodic updates as the project is in motion. BMS CAT will maintain documentation, reports, and QC procedures.

The project manager assigned to the job will be responsible for ensuring the timely completion of the job. BMS CAT will plan for labor and materials at appropriate levels to meet work requirements in the specified time limits. BMS CAT’s core principles include quality work, and our processes are developed to do just that.

BMS CAT has a large staff of qualified document cleaning professionals. This staff is dedicated to this function and does not work on other jobs – they are document cleaning professionals. The project manager assigned to the job will be responsible for ensuring the timely completion of the job. BMS CAT will plan for labor and materials at appropriate levels to meet work requirements in the specified time limits. BMS CAT’s core principles include quality work, and our processes are developed to do just that. BMS CAT is dedicated to providing quality service to all our customers. As a service provider, our ultimate quality assurance is a satisfied customer. Our goals are set forth at the onset of the project in the Scope of Work and are set in conjunction

with the customer. Upon completion, the Scope of Work is reviewed for mutual acceptance. During the project, regular meetings are held with the customer and/or customer representatives. These meetings allow for our team to report on progress and share plans to continue toward project completion.

This system allows for us to follow the Shewhart Cycle, developed by Dr. W. Edwards Deming.

Plan: Establish objectives and processes required to deliver the desired results.

Do: Implement the process developed.

Check: Monitor and evaluate the implemented process by testing the results against the predetermined objectives

Act: Perform actions necessary for improvement if the results require changes.

PDCA is an effective method for monitoring quality assurance because it analyzes existing conditions and methods used to provide customers. The goal is to ensure that excellence is inherent in every component of the process. This also helps determine whether the steps being used to reach the project goals are appropriate for the time and conditions. In addition, if the PDCA cycle is repeated during each project, it helps improve internal company efficiency.

b. Be able to systematically document all stages of the stabilization and recovery activities with a particular focus on treatment activities using both paper-based and/or, upon request, film based and dynamic media.

3.3.2.5. Provide all labor, material, and equipment for the safe and secure stabilization and

c. Be equipped to provide specialized cleaning services as required to manage mold remediation, smoke and soot removal, and deodorization.

BMS CAT can do all that are listed above. We are a licensed mold remediation company but can also remediate smoke, soot, and do deodorization. We have an ozone room that will help with removal of odor along with cleaning. Further, if the odor is extreme, with GMU's permission, we can re-fit a chamber with specialized spray to remove odor.

3.3.3.3. Be equipped to, in a controlled and closely monitored manner, dry varying quantities of material exposed.

d. Be equipped to dry, in a controlled and closely monitored manner, varying quantities of material exposed to varying amounts of moisture through the use of drying methods such as desiccant, air-drying or vacuum freeze-drying, to determine when materials have reached normal equilibrium, and to ensure that all items are completely dry without exposure to the risk of over-drying.

e. Allow Mason to request recovery services separately from emergency response and stabilization services if Mason staff is able to perform the response and stabilization internally.

f. Transfer wet, frozen or dry collection materials to a new, dry box if this is approved by Mason. If there is significant damage to the original container, the Contractor must provide Mason with a proposed procedure to transfer materials to new containers maintaining original order. The Contractor may be required to provide folders, boxes and containers approved by Mason or Mason may choose to provide containers. The Contractor must retain all original documentation and accompanying materials and any label or information written directly on the container. **BMS CAT complies with all of the above requirements.**

g. If distorted, books may be gently re-shaped while wrapping and packing. When packing in boxes, pack volumes spine down or flat into boxes. Avoid packing very small volumes next to large volumes. If deemed necessary, volumes that have been shrink-wrapped may have shrink-wrap plastic removed to expedite drying. Volumes to be transported that are too large for boxing in standard 1.2 cubic foot containers may be stacked flat on pallets, supported by thick cardboard sheets inserted between layers. **BMS CAT complies with these requirements.**

h. Provide documentation including a signed manifest documenting all materials leaving any Mason facility. The Contractor must provide prompt notification upon receipt of shipment and inventory tracking while in the Contractor's facility. **BMS CAT complies with these requirements.**

i. Physically secure collection materials to the truck interior to ensure that the containers and pallets do not shift during transit. All collection materials must be kept within original boxes or enclosures unless the Preservation librarian or designee approves transfer to new boxes or enclosures. Materials must be retained in the same order as received and must not be commingled with any other materials at any time.

j. Be equipped to recover a range of materials including but not limited to:

- Bound volumes (including rare volumes on parchment, pith, vellum)
- Books and other publications incorporating plastics and modern materials
- Digital recordings (including CDs, DVDs, Optical Discs)
- Flat photographic prints, negatives, and direct positives on paper, film, glass, and/or other supports (including metal, leather, ceramics, etc.)
- Microfilm rolls and fiche
- Motion picture film
- Magnetic media (including audio, data and sound recordings)
- Oversized records (including architectural drawings and plans, cartographic records including maps, and posters)
- Papers (including manuscripts, musical notations, unbound pages, etc.)
- Video recordings (including DVDs, digital recordings, and magnetic media)
- Artifacts (including ceramics, musical instruments, paintings, sculpture, and textile memorabilia, etc.)
- Audio recordings (including CDs, phonograph discs, digital sound, magnetic media, and wax cylinders)

****See Narrative below.**

k. Mason collection material may be frozen in transit or at the Contractor's facility. When materials are to be frozen, the Contractor must provide assurance to the Mason representative that the materials in the interior of the pallet have been frozen within the specified timeframe. Documentation of temperature in the interior is sufficient. The temperature of the freezing facility must be monitored and documented. Cycling the temperature within the freezing facility is unacceptable. **BMS CAT complies with these requirements.**

l. Use freeze-drying equipment using a 24-hour computer-monitored vacuum freeze-drying process to return the moisture content of water-damaged materials/holdings to single digits (5-8% preferred). During vacuum freeze-drying, materials will be frozen to a temperature of at least -25°F. The Contractor must provide data to Mason documenting the conditions to which materials have been exposed, and the duration of these conditions. **BMS CAT complies with these requirements.**

m. Outline methods and materials and/or storage systems for sanitization if biological growth and/or residues exist that are potentially harmful to users of collection materials or collection storage systems.

n. Describe methods for dealing with the following types of materials:

- Oversize materials such as maps and cartographic materials
- Flat photographic materials (printed on paper, film and/or other supports e.g., metal, glass, etc.)
- Microfilm rolls
- Motion picture film
- Tangible digital media (videotape, audio tape, etc.) and digital recordings (CD, DVD, Optical Disc, etc.)

o. Describe methods for consulting with Mason's Director of Special Collections Research Center (SCRC) or the designee if possible before recovering the SCRC materials (unique, rare or otherwise valuable collection material). The SCRC Director or designee shall authorize by written approval the Contractor's procedures for freezing or air-drying of these materials. The SCRC materials must remain at the same level of wetness as found until appropriate procedures have been determined and authorized.

BMS CAT has the capability to separate materials during the drying process to ensure they dry completely without sticking. Materials will be deemed at risk before being frozen or put in to freeze-dry chamber, so we are able to properly remediate them.

BMS CAT has capabilities to do basic repair work to materials. If damage is beyond our scope or ability to mend documents, we do have a partner called NEDCC that is able to provide assistance or guidance. NEDCC will not be contacted unless we have prior consent from GMU.

BMS CAT has capability of sanitizing and cleaning records from mold, mildew, soot or sewage. BMS CAT typically uses Microban as an agent to sanitize records. Gamma irradiation is also an option on materials that would require sterilization. Please see our document cleaning white paper that is attached for any other technical details.

4. As part of return of collection material, describe how the Contractor shall:

- a. Be able to, when treatment is completed, carefully pack dried materials separated by format and library location, in appropriate secure, non-damaging containers and ship/deliver them back to Mason. SCRC materials must be packed separately.
- b. Use bar coding to manage the inventory, tracking, shipping, and shelving process to facilitate tracking and reporting.
- c. Submit a close-out report, summarizing all actions taken by the Contractor as part of a Task Order. This report may summarize the emergency event and all associated activities, based on documentation produced through the previous documents, or may summarize recovery activities conducted under a separate Task Order. **BMS CAT complies with all of these requirements**

BMS CAT provides services for the stabilization and recovery of your library collections. We have the largest freeze-dry chamber capacity in the United States.

When papers and books are wet, freeze drying via sublimation is the best and fastest way to salvage them. Papers and books can be wet from a variety of circumstances, such as broken water pipes, a roof torn off during a tornado, area wide flooding, etc. Often many of these papers and books may become submerged under water, contaminated with a variety of debris and sustain substantial damage. The dilemma for the owner of these documents and books is what to do and who to turn to. BMS CAT looks at all aspects of its operation to find the most efficient and cost-effective way to operate. Our operations department continually seeks out the best price and process to achieve maximum efficiency. Additional labor, if needed, is acquired through national labor companies to get ensure cost-effectiveness. Through our in-house travel coordinator, Blackmon Mooring & BMS CAT negotiates airline tickets and hotels when they are required for our people. During areawide disasters we will work with local companies for food services and for lodging. In today's environment preserving documents for business and historical purposes is not only a need, it is often the law. Retention of records is required in many cases for decades. Additionally, some documents may have historical value to an organization and they want to preserve these permanently. Often, these materials are highly secure and confidential. Documents and books that have become wet, moldy or have debris such as soot, can be recovered while in a secure environment.

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and transported via any refrigerated means.

Our technology allows for:

- Book and document drying
- Document freeze-drying
- Microbial removal
- Document recovery from fires, floods, rodent or insect contamination
- We can recover a range of data that years ago would have been considered a total loss:
- Documents, Books and Vital Records
- Movie film and videotape, audio tape, x-rays, microfilm and specialty media
- Hard disc and CD recovery
- Special Collections and Museums

Documents, Books and Vital Records:

BMS CAT can handle the paramount recovery of corporate information assets following a disaster. These assets may take multiple digital and paper forms. We are trained to work with discretion for small or large projects and keep you compliant with current laws and regulations that may affect your industry. Our freeze-drying chambers allow for the quickest processing time to remove water/excess moisture from papers and collections.

Media Recovery:

BMS CAT provides recovery services for X-rays, microfilm, and microfiche. Additionally, we routinely handle damaged photographic media, multiple forms of tape media, audio, disks and optical media that have been affected by water, smoke, and other contamination. All of these media respond well to the sublimation freeze drying process when wet.

Information Security:

With laws such as HIPAA and the Sarbanes-Oxley Act, the proper security and maintenance of business information are critical and a legal priority. Throughout the information recovery process, we take extra measures to provide thorough security.

Government Records:

BMS CAT often works on high-security and classified information recovery projects and offer sound restoration solutions within these constraints. We consider and address the need for government agencies to protect their information while still meeting the expectations of their constituencies.

Special Collections, Libraries, and Museums:

We have worked with libraries as well as numerous art, historical, scientific and industrial museums on recovery projects. We've intricately handled artworks, archival materials, biological specimens and three-dimensional items. We also routinely encounter various forms of film media, electronic data and associated equipment and internet hubs. BMS CAT strives to develop protocols and options that meet the specialized needs of every client.

Secure Destruction:

BMS CAT offers secure destruction of damaged and undamaged documents for customers who determine they no longer need to retain items damaged. By providing a safe and secure way to destroy your documents, we are able to offer our customers peace of mind that the information contained in their documents was destroyed completely.



WHY CHOOSE FREEZE DRYING TO SALVAGE WET BOOKS & PAPER

A BMS CAT WHITE PAPER

WHY CHOOSE FREEZE DRYING TO SALVAGE WET BOOKS & PAPER

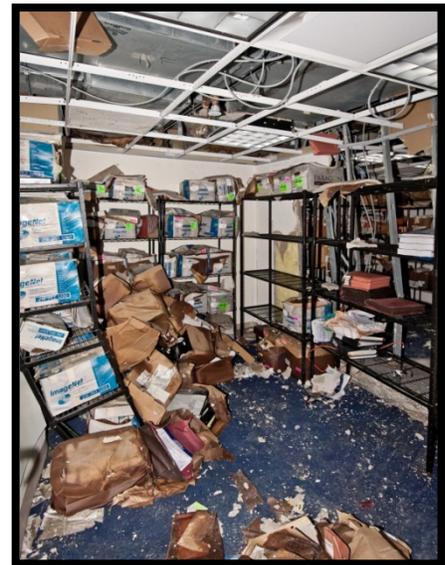


SUMMARY

When papers and books are wet, freeze drying via sublimation is the best and fastest way to salvage them. Papers and books can be wet from a variety of circumstances, such as broken water pipes, a roof torn off during a tornado, area wide flooding, etc. Often times many of these papers and books may become submerged under water, contaminated with a variety of debris and sustain substantial damage. The dilemma for the owner of these documents and books is what to do and who to turn to.

WHY DOES IT MATTER?

In today's environment preserving documents for business and historical purposes is not only a need, it is often the law. Retention of records is required in many cases for decades. Additionally, some documents may have historical value to an organization and they want to preserve these permanently. Often, these materials are highly secure and confidential. Documents and books that have become wet, moldy or have debris such as soot can be recovered while in a secure environment.



WHAT CAN YOU DO?

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and transported via any refrigerated means.

WHY SHOULD YOU CHOOSE FREEZE DRYING?

Documents exposed to water will continue to experience further damage as the water equalizes or wicks into the paper. The Library of Congress and the [National Archives & Records Administration](#) both recommend vacuum freeze drying by sublimation as the preferred method for removing water from paper.

Modern large scale freeze drying chambers actually cost less than desiccant or air drying papers/books. During the freeze drying process the quality of paper is maintained. By comparison, papers dried by air or dehumidification will swell up to 25%, wrinkle (cockle) and lose tensile strength.



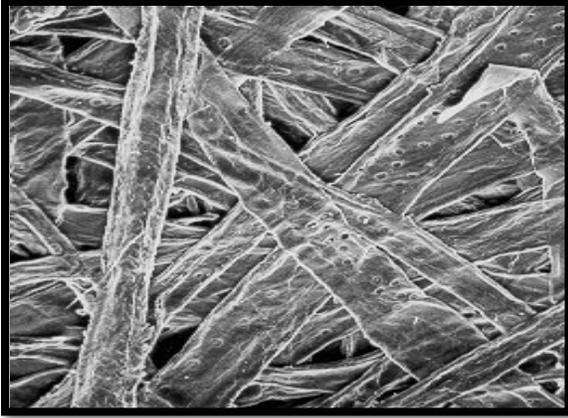
AIR OR DESICCANT DRYING



FREEZE DRYING VIA SUBLIMATION

Water exists in three phases: liquid, solid and gas. It is the liquid phase of water that is most damaging to paper and any media printed on it. The cross-scission and cross-fusion of paper is gradually destroyed by water, and the tiny fibers of the paper separate, and in turn, these fibers no longer serve as an adhesive. Most writing pen inks are water soluble and begin to run or dissolve. And finally, mold now has an optimal environment for growth. Because of this, simply air drying water soaked paper is not practical.

By allowing paper and books to start drying instead of freezing, additional damage is occurring to the documents. The escaping water molecules separate and break the paper fibers, while rendering the lignin useless. Paper generally swells about 25% greater in volume and 30% or greater in reduced strength, causing it to tear easily.

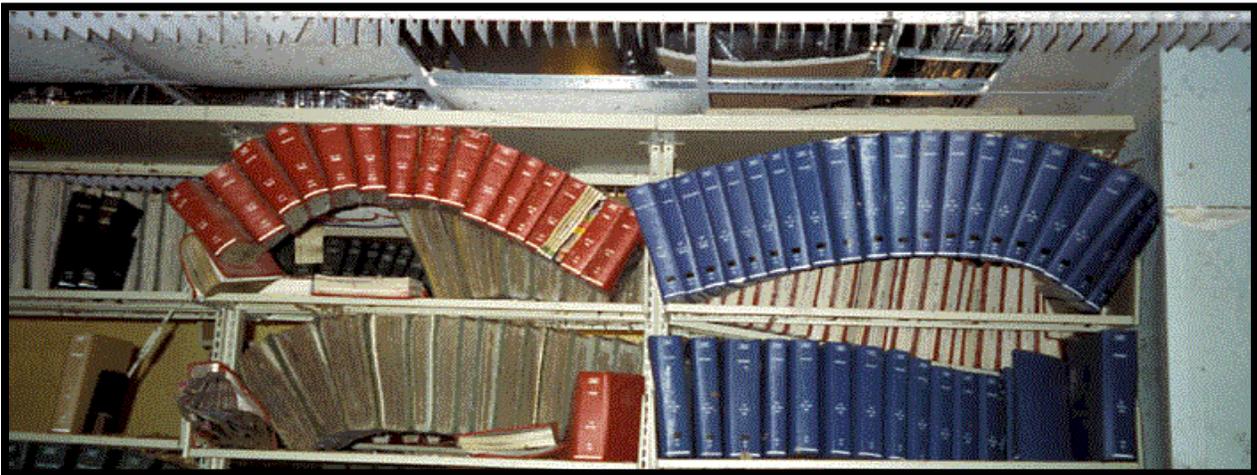


MICROSCOPIC VIEW OF PAPER



PAPER LEGAL FILES SWELLING AND DISTORTING ON METAL SHELVING

When wet books start to air dry, the same issues mentioned above occur, but to a greater degree. The spines of the books are generally stitched. This stitching will minimize the dimensional change of the spine but all the energy of moisture evaporation into the air will cause massive swelling on the foredge of the book. For this reason, it is important to remove all books prior to any attempts in dehumidifying the area. If necessary, a plastic vapor barrier can be constructed to section off the area. In order to minimize damage, freezing books in a timely manner is very important to remember.



Drying frozen, water-soaked paper via sublimation (or freeze drying) is slower than evaporation directly from the liquid phase. However, sublimation causes the least amount of damage to the paper and content. The drying rate using sublimation can be controlled by manipulating process parameters, minimally impacting the time

difference. Due to the damage produced by air drying and desiccant drying wet paper and books, it is clear that drying via sublimation is the best solution.

WHAT IS FREEZE DRYING VIA SUBLIMATION?

The technical aspects of drying via sublimation (or freeze drying) can be complex, but the basic principles of the process have been widely understood and accepted for generations.

Sublimation is a phase change which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and, by the process known as evaporative cooling, the temperature of the ice tends to get colder. Therefore, it is necessary to have heat from outside the system (in our case, electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will too, thus increasing the rate of sublimation. It is important to know that, for certain historic archival documents the heated shelves are optional; the process will simply take slightly longer. Depending on the type and age of the material, some archivists recommend removal of heated shelves for preservation purposes. In order to closely monitor the temperature of the paper, BMS CAT places temperature sensors in multiple boxes throughout each chamber.

Low pressure and a surplus of heat (energy) are essential during the freeze drying process. However, when the pressure reaches 0.100 Torr (prox) the process becomes adiabatic (without loss or gain of heat).

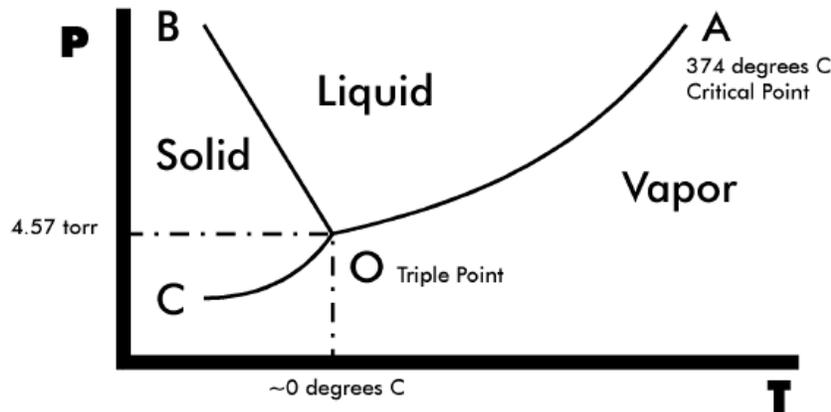
At this point the process is truly optimized, because all of the electric heat added works to raise the temperature of the ice versus supporting sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid, giving up its latent heat as



sensible (apparent) heat, thus the need for refrigeration. As the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr (point O), water can exist in only two states - solid and vapor (depending on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states: solid, liquid and vapor. Remember, all the damage to paper is done during the liquid phase of water. By keeping the pressure below 4.57, we prevent further damage while allowing the ice to sublime (go directly to vapor).

The process of freeze drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr and adding heat to warm the documents, causing sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber. Periodically, the cold trap is isolated from the chamber and the refrigeration cycle is reversed to heat the coils. Next, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are

several cold traps operating “push pull” - while one trap is in defrost; the other is still connected and removing water.

BMS CAT, Inc

www.bmscat.com

800-433-2940

 **Vacuum Pressure Comparisons 3-18-2013**

		<i>Torr (mm Mercury)</i>	<i>Micron</i>	<i>psia, (lb/in²) abs</i>	<i>Inches Mercury Absolute</i>	<i>Inches Mercury Gauge</i>	<i>kPa abs</i>
Pressure at Sea Level →	0	760	760,000	14.7	29.92	0	101.4
	1.3	750	750,000	14.5	29.5	0.42	99.9
	1.9	735.6	735,600	14.2	28.9	1.02	97.7
	7.9	700	700,000	13.5	27.6	2.32	93.5
	21	600	600,000	11.6	23.6	6.32	79.9
	34	500	500,000	9.7	19.7	10.22	66.7
	47	400	400,000	7.7	15.7	14.22	53.2
	50	380	380,000	7.3	15	14.92	50.8
	61	300	300,000	5.8	11.8	18.12	40
	74	200	200,000	3.9	7.85	22.07	26.6
	87	100	100,000	1.93	3.94	25.98	13.3
	88	90	90,000	1.74	3.54	26.38	12
	89.5	80	80,000	1.55	3.15	26.77	10.7
Household vacuum cleaner →	90.8	70	70,000	1.35	2.76	27.16	9.3
	92.1	60	60,000	1.16	2.36	27.56	8
	93	51.7	51,700	1	2.03	27.89	6.9
	93.5	50	50,000	0.97	1.97	27.95	6.7
	94.8	40	40,000	0.77	1.57	28.35	5.3
	96.1	30	30,000	0.58	1.18	28.74	4
	96.6	25.4	25,400	0.49	1	28.92	3.4
	97.4	20	20,000	0.39	0.785	29.14	2.7
	98.7	10	10,000	0.193	0.394	29.53	1.3
	99	7.6	7,600	0.147	0.299	29.62	1
Water cannot exist as a liquid below this point. Sublimation occurs from this point ↓		4.56					
	BMS Chamber for Freeze Drying →	99.9	1	1,000	0.01934	0.03937	29.88
	99.9	0.75	750	0.0145	0.0295	29.89	0.1
	99.99	0.1	100	0.00193	0.00394	29.916	0.013
Incandescent Light Bulb →	99.999	0.01	10	0.00019	0.000394	29.9196	0.0013
	100	0	0	0	0	29.92	0

$$1 \text{ psi (lb/in}^2\text{)} = 6,894.8 \text{ Pa (N/m}^2\text{)} = 6.895 \times 10^{-3} \text{ N/mm}^2 = 6.895 \times 10^{-2} \text{ bar}$$

HOW DO YOU KNOW IF DOCUMENTS ARE WET?

If paper items, such as books and manuscripts, have been exposed to excessive humidity, are near a water intrusion, under a sprinkler discharge or partially submerged in water, they should be inspected for moisture content with a moisture meter. The moisture meter will determine the amount of moisture present in the material. Simply visually inspecting the items or touching them will not tell the whole story. Moisture can be deceiving, you cannot always feel or see it. An archivist's electronic moisture measurement meter will give you the full picture.



DELMHORST P-2000 PAPER MOISTURE METER

The meter will read from 4.3% to 18% (saturation) moisture range on paper. It is important to check the owner's manual for instructions on how to calibrate the device prior to use and calibrate before each use.

Moisture Content is considered within the acceptable range when the measurement is < 7% MC (Moisture Content). Many offices may have documents that are in the 5% to 7% MC range. Moisture Content is considered higher than desired when the range is >7% MC but < 11% MC. Document moisture content is then considered "humid-damp".

It is recommended that action to reduce the moisture content to less than 7% be taken within 48-72 hours. During this time frame it is acceptable to try moisture removal on site with blocking or air movement when dealing with small batches of documents. If you are unable to remove moisture within 72 hours, schedule documents for freeze drying.

Moisture Content is considered “unacceptable” when the moisture content is greater than 11% MC. At this point, the documents are considered “wet” and should be freeze dried via sublimation immediately. Your first step is to freeze the documents to mitigate any further damage until the documents can be shipped to the freeze drying chambers.

Zone	ACCEPTABLE-DRY			HUMID-DAMP			UNACCEPTABLE-WET		
Delmhorst Reading	4.5	5	7	8.0	9	10	11	14	18
% of Saturation or moisture content of paper	25%	28%	39%	44%	50%	56%	61%	78%	100%

CONSIDERATIONS

Freezing: The most effective method way to stabilize water-damaged archival and library materials is freezing at low temperatures as quickly as possible. This is the most generally accepted method by conservators. The recommended freezing level should be around -30 °C (-20 °F). Frozen materials should remain in cold storage until freeze drying can occur.

BMS CAT is able to provide refrigerated trailers at the loss site. These trailers are capable of achieving a -20 °F temperature. This will allow teams inventorying to process items then immediately place pallets of wet books or documents into the refrigerated trailer, thus mitigating the damage. Once a trailer is full it can be shipped with the appropriate security levels in place to our secure freeze drying facility.



Compression: It is important to note that books dried without mechanical compression will distort and cockle. Several companies will attempt to solve this issue with rubber bungee cords with minimal success.



NO COMPRESSION



BUNGEE COMPRESSION

BMS CAT has developed a proprietary process of “Self Compensating Mechanical Compression” book reforming. A snapshot of the process is illustrated below.



BENEFITS OF FREEZING AND FREEZE DYRING VIA SUBLIMATION

Freezing Documents Halts Mold: Mold requires three things to thrive: moisture, food and temperature. By freezing documents, the temperature required for mold to thrive is lowered to a point where it cannot survive. While mold spores are not destroyed by freezing, they remain dormant until a more favorable environment is available. Freezing will stop the infection of mold thus harmful damage to the documents ceases.

Freezing Stabilizes Soluble Inks and Dyes: Freezing has the additional advantage of stabilizing inks, dyes, dyestuffs and colorants used for manuscripts, maps, sketches and drawings that are soluble in water. Later, when freeze-drying takes place, migration or feathering of inks or dyes can be restrained since the liquid stage is bypassed.

Freezing Prevents Adhesion of Pages: Books and periodicals are generally printed on stock that uses a coating pigment with a binder of casein and starch, both of which are highly water-soluble. If coated stock is permitted to dry, it will turn the book into a clay-like brick at which point restoration is impossible. The only practical method to salvage these items, especially when large quantities are involved, is freezing while wet then freeze drying.

Freezing Gives You Time To Assess: By freezing water-damaged documents, they are stabilized as long as they remain frozen. Disasters can be stressful and confusing. When stabilizing documents through freezing, there is time to assess the damage. Decision makers can determine which documents can be discarded, replaced or copied. It allows time to determine what repairs or restoration is required and how much time it will take to recover damaged storage areas.

Freeze Drying Uses Fewer Chemicals & Produces Fewer Odors: The process uses fewer chemicals, thus producing limited odors. The vacuum chambers cause VOC's (Volatile Organic Compounds) to "flash off", boil or vaporize because the pressure in the chamber is lower than the boiling point of the VOC's. Additionally, many chemical



contaminants escape with the gasses released during the process. As a result, the documents will smell better and have very few (if any) remaining contaminants. If any contaminants do remain, they can be removed during the cleaning process.

Following a plane crash in the Hudson River, many paper documents were submerged in water overtaken by pungent jet fuel. Our freeze drying chambers were able to remove most of the odor from the jet fuel.

Freeze Drying is Safe for Documents and Books: "In studies conducted by the Research and Testing Office of the Library of Congress, there was NO evidence found that freeze drying causes damage of cellulosic and proteinaceous materials (5)."

Source: Vacuum freeze-drying, a method used to salvage water-damaged archival and library materials. A UNESCO (United Nations Educational, Scientific, and Cultural Organization); Study 1987.

Freeze Drying Produces a Cleaner Document: The gasses released during the sublimation process deposit loose matter to the surface of the papers. This facilitates a better cleaning to the papers by removing silt, loose mold spores and other contaminants.

Freeze Drying Is a Safe and Secure Way To Dry Documents: According to the National Archives (NARA), “Records can dry in their original containers reducing risk for disruption of original order.” This allows us to have a secure process, keeping clients documents segregated from other client’s documents.



According to the National Archives (NARA), “Records must be removed from their containers, spread on shelves to dry in warm dehumidified air, and periodically rotated to expose wet paper surfaces.” As you can imagine, a great deal of space must be used to spread paper out individually. The risk of this process is that documents can be knocked off of shelves and intermixed with other client’s documents. Because paper is spread throughout a facility, there is greater risk of retrieving the wrong file or intermixing files.

WHAT CAN YOU DO?

If there is any advance notice of potential damage, all possible protective measures should be taken such as covering items with plastic, raising furniture and protecting electronics. Additionally, consider permanent storage of certain valuable items (rare books, historical newspapers or long term archival documents) in buffered, acid free storage boxes.

It is important to have a plan in place for a disaster. It is highly recommended that you pre-contract with a restoration company before a loss occurs. This gets any administrative “red tape” out of the way, expedites response times and allows you to

carefully pre-qualify the service for your exact needs. BMS CAT offers a Response Service Agreement at no cost.

SUMMARY

BMS CAT offers over 8,500 cubic feet of freeze drying space in our freeze-drying chambers. Our 7th generation equipment is completely controlled electronically and monitored 24-hours a day by our trained professional recovery staff and around the clock security. BMS CAT recently upgraded software and equipment and continues to improve in several areas including:

- More rapid drying cycles
- 24 thermocouples per chamber for more precise knowledge of temperature **inside boxes**
- Increased control of chamber pressure
- Enhanced remote monitoring
- Decreased vacuum pressures down to **1 Torr**

References, National Archives and Records Administration (NARA), The Library of Congress, The United Nations, The Northeast Document Conversation Center, UNESCO (United Nations Educational, Scientific, and Cultural Organization)



CLEANING DAMAGED DOCUMENTS

A BMS CAT WHITE PAPER

CAN PAPER BE SAVED? RECOVERING DAMAGED DOCUMENTS



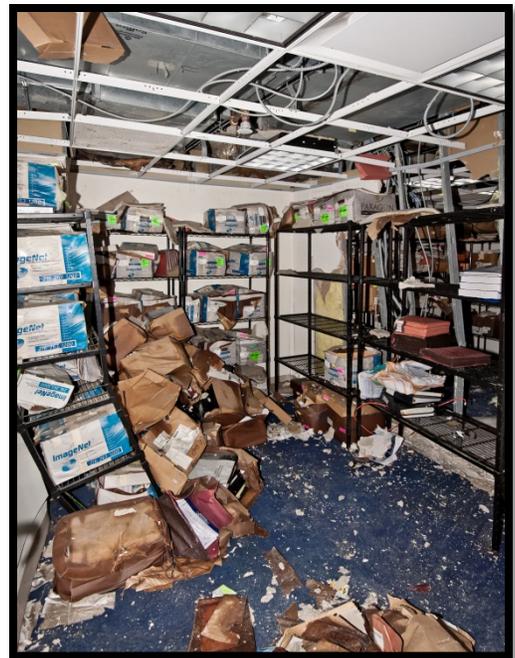
SUMMARY

When a facility suffers damage from water, fire or microbial growth, documents stored within are susceptible to irreversible damage. Can paper and media be recovered?

WHY DOES IT MATTER?

In today's environment, preserving documents for business and historical purposes is not only a need, it is often the law. In many cases, retention of records is required for several decades.

Additionally, some documents may have historical value to an organization. Documents and media that have become wet, moldy or have debris such as soot can be recovered. Often, these materials are highly secure and careful consideration must be taken to ensure that any company hired to handle records have proper security protocol in place. Such was the case when BMS CAT was hired to restore Top Secret documents damaged at a FBI facility during Hurricane Sandy.



CLEANING OFF-SITE

There are many reasons to clean documents off site. Typically, documents are not the only thing damaged, and the facility housing the documents usually needs repairs and/or restoration. While this may seem cumbersome, it allows for several benefits.

1. Restoration and repairs can be performed freely without fear of further damaging documents or books.
2. Documents are in a secure facility while cleaning, including cameras, supervisors and dedicated staff.

3. Technicians have a dedicated facility for cleaning.
4. Since local technicians are used off-site, thus eliminating the cost of housing and transportation, the cost to clean off-site is actually lower.

When packing out documents, it is generally appropriate to begin with materials that have sustained the most damage. Site conditions may prevent this. Microfilm and other photographic negatives should not be allowed to dry out. The emulsions become soft when wet and will act like an adhesive. When these items dry next to paper or other films, the emulsions will stick to whatever is next to it permanently. Trying to pull items apart will destroy the film. Film should be placed in a plastic bag with a



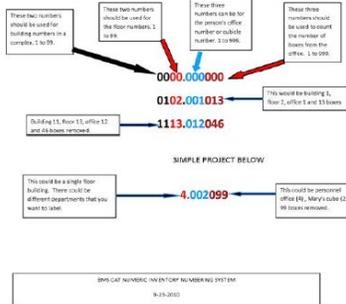
moderate amount of distilled water to keep items wet. Finally, film and other photographic materials should be stored at a cold temperature. When dealing with bound volumes, they should be packed “spine-down.” Large volumes should be placed flat in boxes.

HOW DO YOU KEEP TRACK OF IT ALL?

BMS CAT utilizes an inventory system that gives each box a unique number that will become its own identifier. The inventory number will tell us the building, floor, office (or cubicle) and how many boxes were removed from each space. On both the box label and corresponding spreadsheet, there is a section for comments describing the documents.

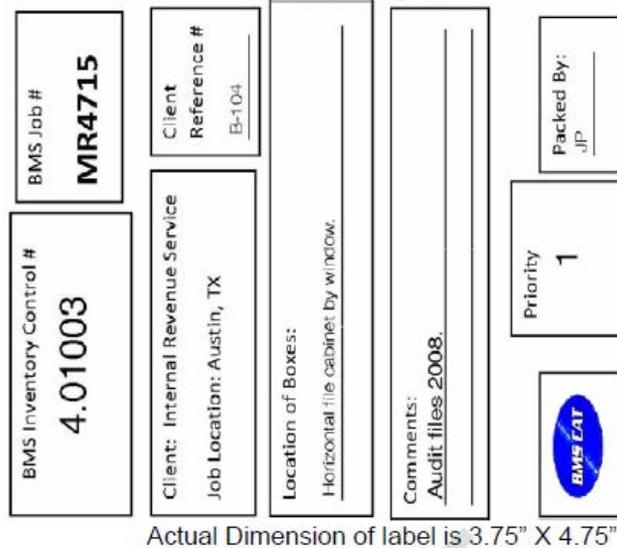
BMS CAT INVENTORY AND LABEL SYSTEM	
0.00000	There are 5 decimal places to the right. There one decimal place on the left.
1.00000	The first tow digits will be the floor number. This illustrates floor #1.
1.01000	This is the first office on the first floor. We have used over 90 on one floor. This is the box from the first office on the first floor. We could have up to 999 1.01001 boxes per individual office.
3.07098	This is box #98, from office #7, on the third floor.

Example:



Each box is labeled with two identical labels. All inventory information is consolidated into spreadsheets and provided to the customer.

Example:



WHAT CAN BE DONE?

BMS CAT has extensive experience in document and special media recovery following a disaster. The cleaning portion can be performed to documents damaged by debris, char or soot.

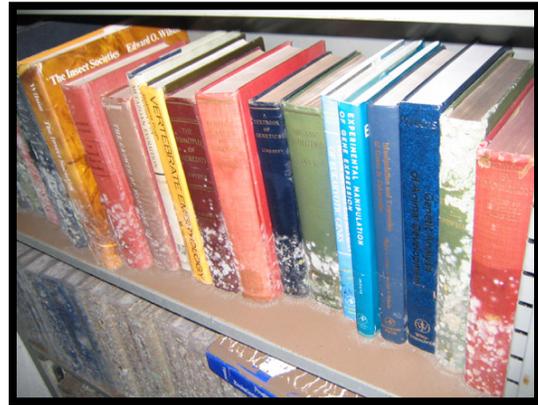
Water Damage: If the Moisture Content of the paper is less than 7%, documents can be cleaned without drying first. If Moisture Content is greater than 7%, documents will continue to sustain further damage as the water equalizes or wicks into the paper. Freeze drying is generally accepted to be the least damaging of all methods of

drying wet paper. You can check out the National Archives comparison of drying methods here. <http://www.archives.gov/preservation/disaster-response/drying-techniques.html>

Fire & Smoke Damage: Documents damaged by smoke and soot are cleaned using “chemical sponges” made of pure latex rubber. Soot particles are removed from the edges of volumes and documents. Technicians use gentle sweeping motions, moving from the center out to the edges of the document. If necessary, HEPA vacuums will be used to trap additional debris. If odors exist, ozone may be used to neutralize the odor. Ozone should not be used, however, on archival or intrinsically valuable records.

General Cleaning Protocol:

- Each item is first HEPA vacuumed to remove gross accumulations of mold and debris.
- The technician then uses a dry cloth and/or “chemical sponges” made of pure latex rubber to further remove accumulations from the surface.
- If books are damaged, the spine and foredge may be accessed and cleaned with a bottle brush or dry cloth (if necessary).
- Binders are not a good candidate for cleaning or retaining following damage. Instead, information from each binder is retained with the materials that were housed in that binder. Additionally, we photocopy or photograph the original information to prevent confusion when re-filing.
- If requested, BMS CAT will also replace file folders made of permanent-durable materials. The old file labels are retained and placed in a plastic bag and hermetically sealed and new file labels are applied to replace them.
- Documents that have been wet or contain mold should be cleaned and sanitized. An EPA registered biocide will be applied to the documents, specifically where visible mold growth has occurred.



- **If documents are exposed to Class 3 Water (“Black Water”), they should be sterilized via Gamma Radiation. Black Water can include sewage, river water, water from area wide flooding and any water that has been present for extended periods of time.**
- **If documents will be returned to a healthcare setting, Gamma Radiation is recommended for the safety of patients who may have compromised immune systems.**

CONSIDERATIONS

If your documents are important enough to recover, security must be of concern. Security occurs at several points as demonstrated below:

Customer Site Security	Transportation Security	Restoration Security
<ul style="list-style-type: none">• Additional security should be hired if necessary• Segregate documents from other restoration activities• An inventory of the documents should be performed and audited• When documents are placed in a truck/trailer, a security lock should be applied• A dedicated security person should visually monitor the trailer door• Documents should not be left alone during transport or when in the trailer• Restoration employees should have visible ID badges with pictures and wear uniforms	<ul style="list-style-type: none">• Trailer doors should be secured with a US Customs High Security Seal• Straight through shipment should be used if common carrier is shipping• Team drivers should be used so no overnight stays are required• Transportation should be performed by a security vetted company with GPS tracking• Driver background checks should be performed	<ul style="list-style-type: none">• The facility where restoration occurs should be secured• There should be no open doors for visitors to walk in• Employees should be background checked and drug screened• Only employees with a need to access the documents should be allowed to enter the facility• The facility should be alarmed• The document processing areas should be segregated from other areas of the building• Ensure that training for employees applicable to your industry has occurred (HIPAA, Sarbanes Oxley, etc.)

WHAT CAN YOU DO?

If there is any advance notice of potential damage, all possible protective measures should be taken such as covering items with plastic, raising furniture and protecting electronics. Additionally, consider permanent storage of certain valuable items (rare

books, historical newspapers or long-term archival documents) in buffered, acid free storage boxes.

It is important to have a plan in place for a disaster. It is highly recommended that you pre-contract with a restoration company before a loss occurs. This gets any administrative “red tape” out of the way, expedites response times and allows you to carefully pre-qualify the service for your exact needs. BMS CAT offers a Response Service Agreement at no cost.

Film Media Recovery

X-rays, Microfiche & Film, Photographic
Negatives, Aperture Cards

- Do Not Allow These Materials to Dry Out on Their Own, They Will Stick Together and Cause Permanent Damage
- Refrigerate Any Quantity That Is Greater Than That Which Is Possible to Process Immediately



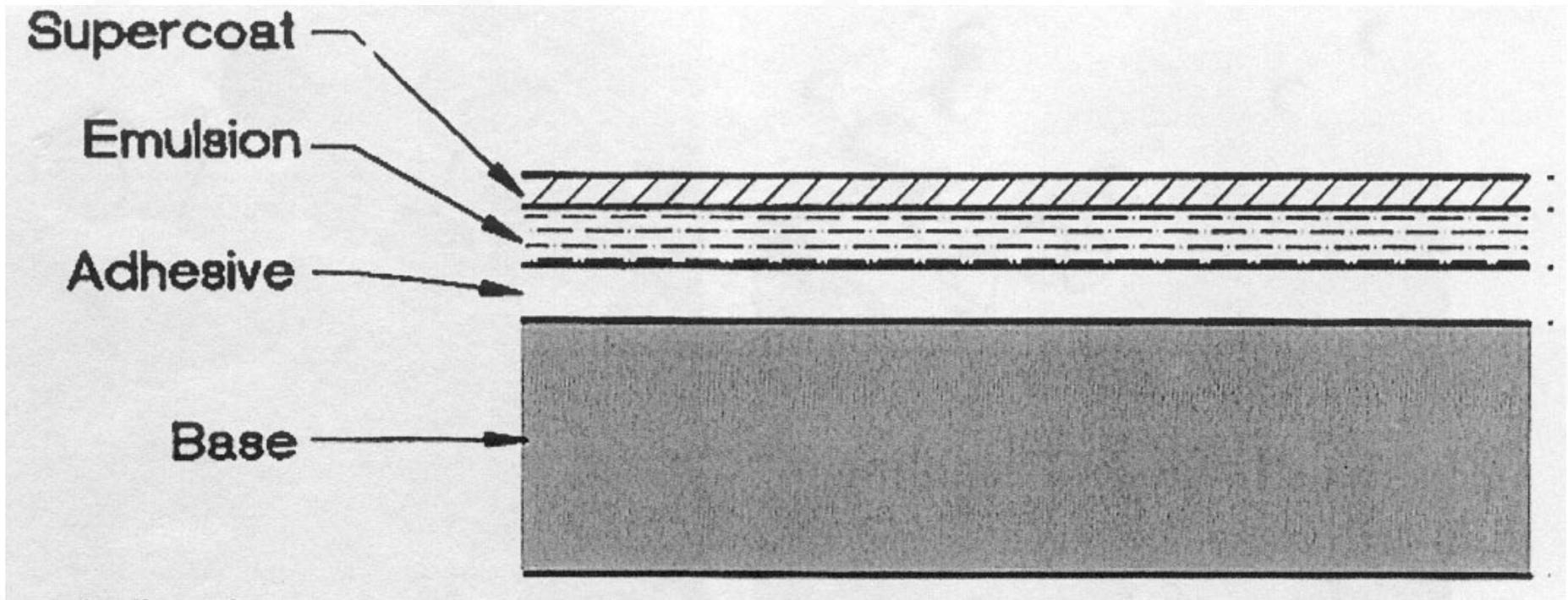
Film Media Recovery

X-rays, Microfiche & Film, Photographic Negatives, Aperture Cards

- Film is a media that makes a permanent record of the image.
- Generally there is an emulsion on one side. However, some x rays have emulsion (gelatin) on both sides.
- Polyester is the base material.
- X rays have silver halide in the emulsion.

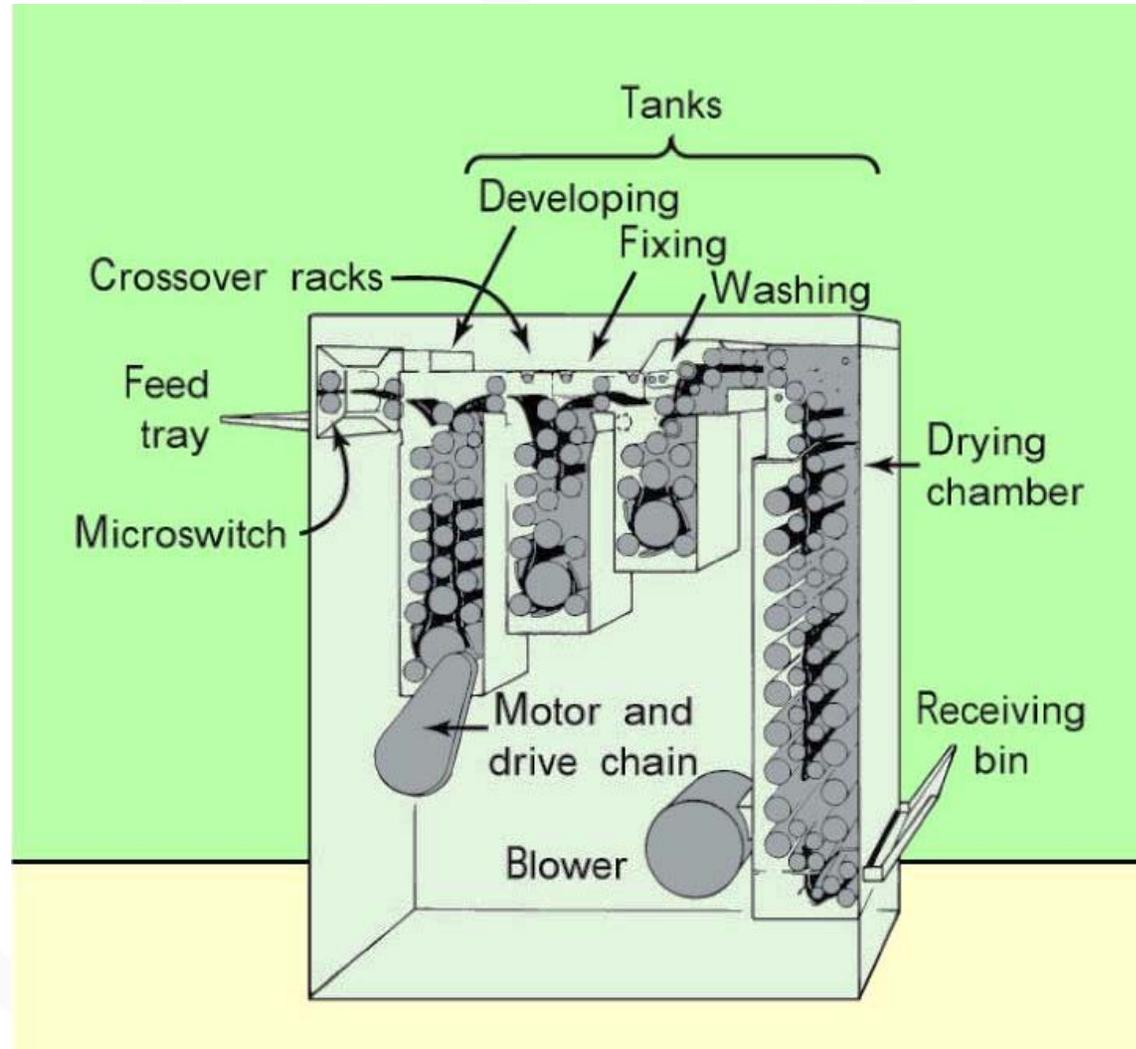
Film Media Recovery

X Ray Construction



Film Media Recovery

BMS CAT X Ray Processing Machines



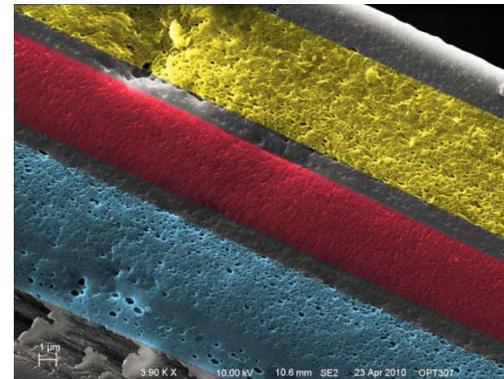
Film Media Recovery

Historic Movie Film

65 & 70 MM Film, up to 1,000 foot + in length.



Emulsion layers.



International Bank Micro Fiche Files



**Flood
Level**

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International Bank Micro Film Storage



**Flood
Level**



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Blackmon Mooring
BMS CAT



BMS CAT Micro Film Processing Machines



Blackmon Mooring & Best LLP



BMS CAT Micro Film Rewinding Machines



Audio Tape Recovery

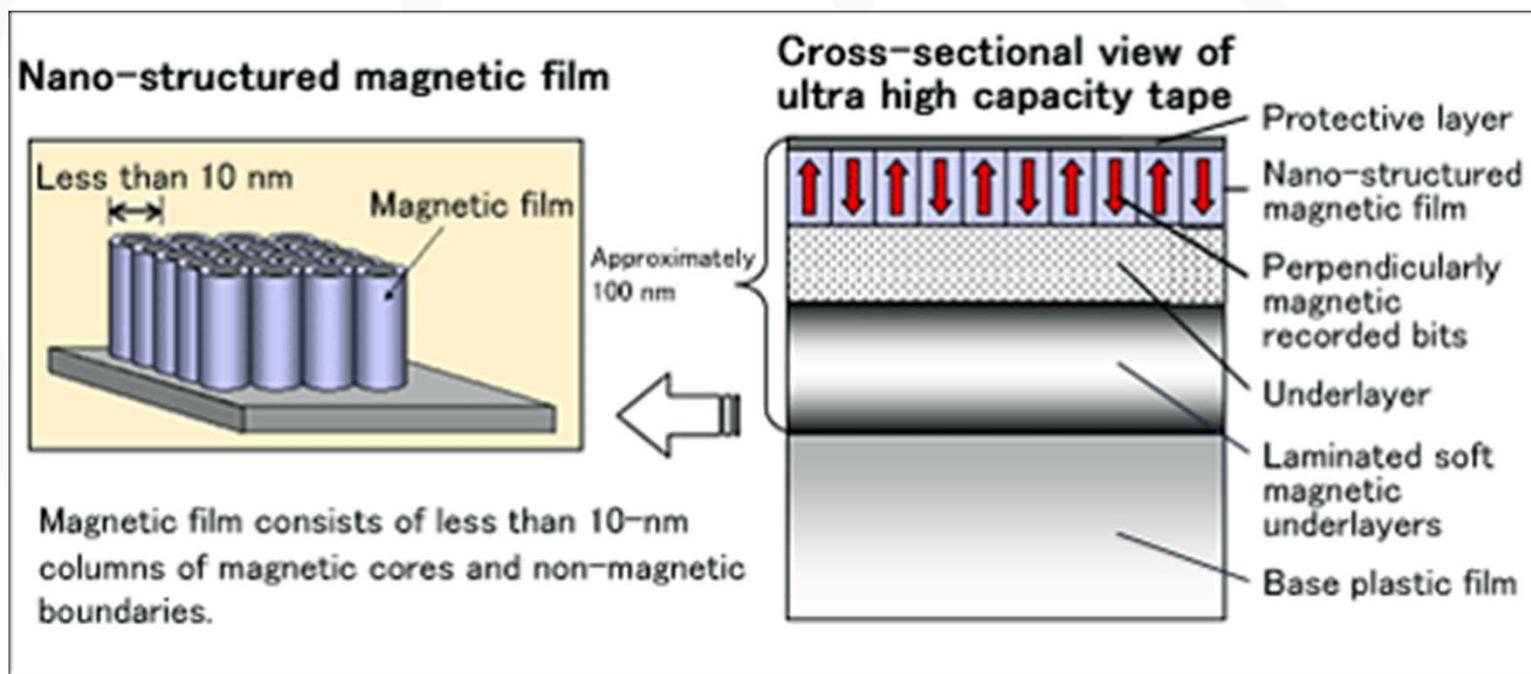


Audio Tape Recovery



LTO Tape Recovery

Linear Tape-Open (LTO) is the primary way companies back up large amounts of computer data. It is the least expensive method. This is magnetic media highly compressed.



LTO Tape Recovery



Before and After





WHY CHOOSE FREEZE DRYING TO SALVAGE WET BOOKS & PAPER

A BMS CAT WHITE PAPER

WHY CHOOSE FREEZE DRYING TO SALVAGE WET BOOKS & PAPER

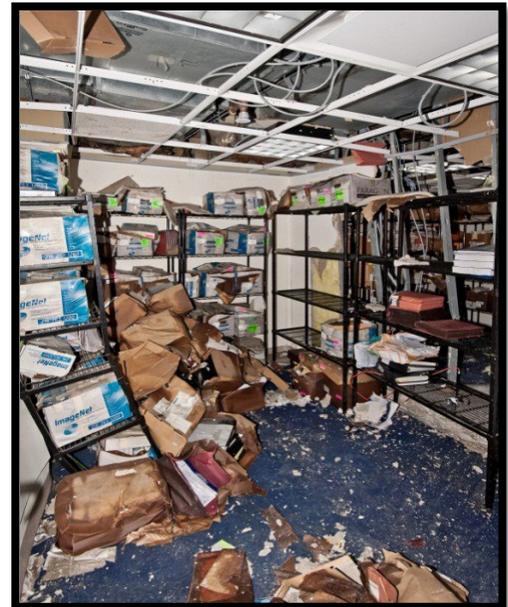


SUMMARY

When papers and books are wet, freeze drying via sublimation is the best and fastest way to salvage them. Papers and books can become wet from a variety of circumstances, such as broken water pipes, a roof torn off during a tornado, area wide flooding, etc. Often times many of these papers and books may become submerged under water, contaminated with a variety of debris and endure substantial damage. The dilemma for the owner of these documents and books is what to do and who to turn to.

WHY DOES IT MATTER?

In today's environment preserving documents for business and historical purposes is not only a need, it is often the law. Retention of records is required in many cases for decades of time. Additionally, some documents may hold historical value to a business or organization and they want to preserve these permanently. Often, these materials are highly secure and confidential. Documents and books that have become wet, moldy or have debris such as soot can be recovered while in a secure environment.



WHAT CAN YOU DO?

By freezing paper that has become wet, the mechanical disintegration of it will end, ink will stop dissolving and the potential for mold and fungus growth ceases. Once frozen, paper can stay in that state indefinitely and be transported via any refrigerated means.

WHY SHOULD YOU CHOOSE FREEZE DRYING?

Documents exposed to water will continue to experience further damage as the water equalizes or wicks into the paper. Both the Library of Congress and the National Archives & Records Administration recommend vacuum freeze drying by sublimation as the preferred method for removing water from paper.

Modern large-scale freeze drying chambers actually cost less than desiccant or air drying papers/books. During the freeze drying process the quality of paper is maintained. By comparison, papers dried by air or dehumidification will swell up to 25%, wrinkle (cockle) and lose tensile strength.



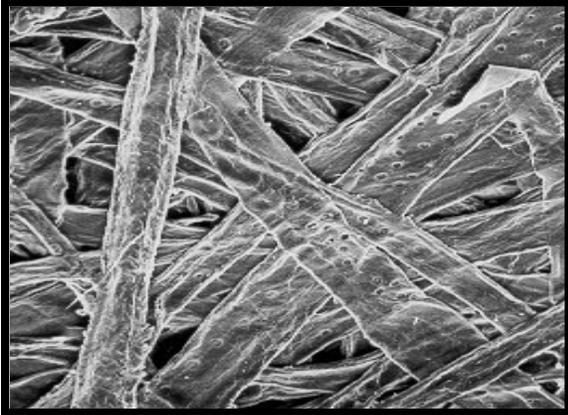
AIR OR DESICCANT DRYING



FREEZE DRYING VIA SUBLIMATION

Water exists in three phases: liquid, solid and gas. It is the liquid phase of water that is most damaging to paper and any media printed on it. The cross-scission and cross-fusion of paper is gradually destroyed by water, and the tiny fibers of the paper separate, and in turn, these fibers no longer serve as an adhesive. Most writing pen inks are water soluble and begin to run or dissolve. And finally, mold now has an optimal environment for growth. Because of this, simply air drying water soaked paper is not practical.

By allowing paper and books to start drying instead of freezing, additional damage is occurring to the documents. The escaping water molecules separate and break the paper fibers, while rendering the lignin useless. Paper generally swells about 25% greater in volume and 30% or greater in reduced strength, causing it to tear easily.

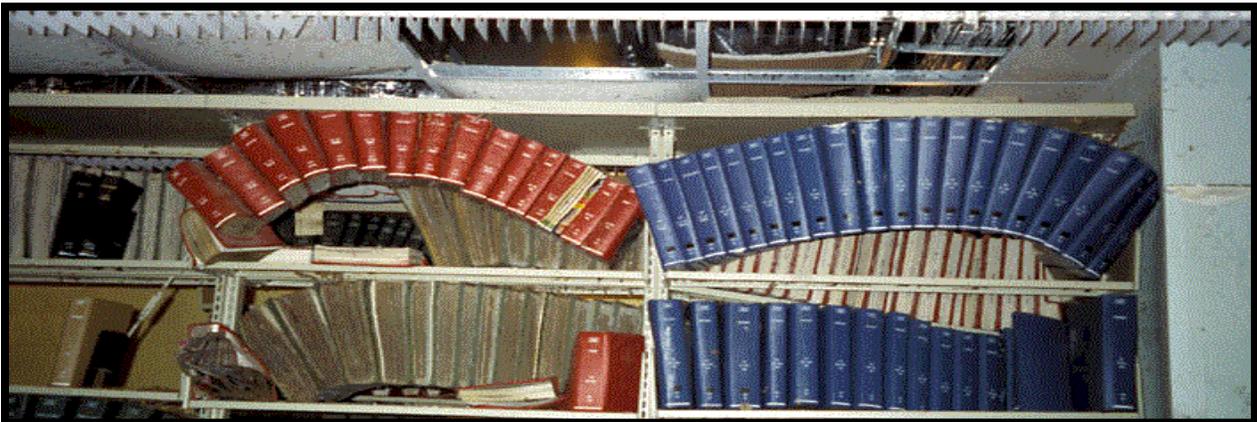


MICROSCOPIC VIEW OF PAPER



PAPER LEGAL FILES SWELLING AND DISTORTING ON METAL SHELVING

When wet books start to air dry, the same issues mentioned above occur, but to a greater degree. The spines of the books are generally stitched. This stitching will minimize the dimensional change of the spine but all the energy of moisture evaporation into the air will cause massive swelling on the fore-edge of the book. For this reason, it is important to remove all books prior to any attempts in dehumidifying the area. If necessary, a plastic vapor barrier can be constructed to section off the area. In order to minimize damage, freezing books in a timely manner is very important to remember.



Drying frozen, water-soaked paper via sublimation (or freeze drying) is slower than evaporation directly from the liquid phase. However, sublimation causes the least amount of damage to the paper and content. The drying rate using sublimation can be controlled by manipulating process parameters, minimally impacting the time difference. Due to the damage produced by air drying and desiccant drying wet paper and books, it is clear that drying via sublimation is the best solution.

WHAT IS FREEZE DRYING VIA SUBLIMATION?

The technical aspects of drying via sublimation (or freeze drying) can be complex, but the basic principles of the process have been widely understood and accepted for generations.

Sublimation is a phase change which requires latent (not apparent) heat energy. This energy leaves the solid ice with the vapor and, by the process known as evaporative cooling, the temperature of the ice tends to get colder. Therefore, it is necessary to have heat from outside the system (in our case, electrically heated shelves). Now, if there is more heat energy available than that required for optimum sublimation, the temperature of the ice will rise and its vapor pressure will too, thus increasing the rate of sublimation. It is important to know that, for certain historic archival documents the heated shelves are optional; the process will simply take slightly longer. Depending on the type and age of the material, some archivists recommend removal of heated shelves for preservation purposes. In order to closely monitor the temperature of the paper, BMS CAT places temperature sensors in multiple boxes throughout each chamber.

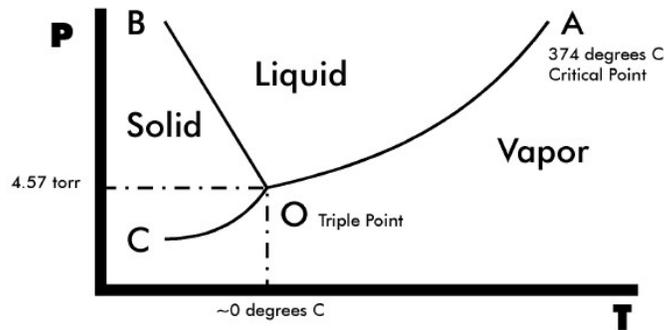
Low pressure and a surplus of heat (energy) are essential during the freeze drying process. However, when the pressure reaches 0.100 Torr (prox) the process becomes adiabatic (without loss or gain of heat). At this point the process is truly optimized, because all of the electric heat added works to raise the temperature of the ice verses supporting sublimation.

The condenser (freeze trap) assists the vacuum pump in lowering chamber pressure. When the sublimed vapor clings to the condenser surface, it changes phase and reverts back to a solid, giving up its latent heat as



sensible (apparent) heat, thus the need for refrigeration. As the ambient condenser pressure is lowered, vapor from within the chamber tends to fill this region and equalize pressure of the total chamber/condenser volume (vapor laws). The coil must be sized to condense vapor at the optimum sublimation rate. This can be accomplished via large surface area or very low surface temperature.

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The graph above is the phase diagram for water. For any combination of pressure (vertical axis) and temperature (horizontal axis), you can tell whether water is solid, liquid or gas. Normal atmospheric pressure at sea level is 760 Torr. If the pressure is below 4.57 Torr (point O), water can exist in only two states - solid and vapor (depending on the temperature). Point O is called the triple point of water because it is the only temperature and pressure where water can exist in all three states: solid, liquid and vapor. Remember, all the damage to paper is done during the liquid phase of water. By keeping the pressure below 4.57, we prevent further damage while allowing the ice to sublime (go directly to vapor).

The process of freeze drying consists of placing the frozen documents into the freeze dry chamber, reducing the pressure in the chamber to about 2.3 Torr and adding heat to warm the documents, causing sublimation, the conversion of ice to vapor. The vapor is condensed on refrigerated coils in the cold trap attached to the chamber.

Periodically, the cold trap is isolated from the chamber and the refrigeration cycle is reversed to heat the coils. Next, the cold trap is opened to atmospheric pressure, and the ice is melted and removed as the liquid water runs into a container. There are several cold traps operating "push pull" - while one trap is in defrost; the other is still connected and removing water.



Vacuum Pressure Comparisons 3-18-2013

	Torr (mm Mercury)		psia, (lb/in ² abs)	Inches Mercury Absolute	Inches Mercury Gauge	kPa abs	
Pressure at Sea Level →	0	760	760,000	14.7	29.92	0	101.4
	1.3	750	750,000	14.5	29.5	0.42	99.9
	1.9	735.6	735,600	14.2	28.9	1.02	97.7
	7.9	700	700,000	13.5	27.6	2.32	93.5
	21	600	600,000	11.6	23.6	6.32	79.9
	34	500	500,000	9.7	19.7	10.22	66.7
	47	400	400,000	7.7	15.7	14.22	53.2
	50	380	380,000	7.3	15	14.92	50.8
	61	300	300,000	5.8	11.8	18.12	40
	74	200	200,000	3.9	7.85	22.07	26.6
	87	100	100,000	1.93	3.94	25.98	13.3
	88	90	90,000	1.74	3.54	26.38	12
	89.5	80	80,000	1.55	3.15	26.77	10.7
Household vacuum cleaner →	90.8	70	70,000	1.35	2.76	27.16	9.3
	92.1	60	60,000	1.16	2.36	27.56	8
	93	51.7	51,700	1	2.03	27.89	6.9
	93.5	50	50,000	0.97	1.97	27.95	6.7
	94.8	40	40,000	0.77	1.57	28.35	5.3
	96.1	30	30,000	0.58	1.18	28.74	4
	96.6	25.4	25,400	0.49	1	28.92	3.4
	97.4	20	20,000	0.39	0.785	29.14	2.7
	98.7	10	10,000	0.193	0.394	29.53	1.3
	99	7.6	7,600	0.147	0.299	29.62	1
Water cannot exist as a liquid below this point. Sublimation occurs from this point ↓		4.56					
BMS Chamber for Freeze Drying →	99.9	1	1,000	0.01934	0.03937	29.88	0.13
	99.9	0.75	750	0.0145	0.0295	29.89	0.1
	99.99	0.1	100	0.00193	0.00394	29.916	0.013
Incandescent Light Bulb →	99.999	0.01	10	0.00019	0.000394	29.9196	0.0013
	100	0	0	0	0	29.92	0

$$1 \text{ psi (lb/in}^2\text{)} = 6,894.8 \text{ Pa (N/m}^2\text{)} = 6.895 \times 10^{-3} \text{ N/mm}^2 = 6.895 \times 10^{-2} \text{ bar}$$

HOW DO YOU KNOW IF DOCUMENTS ARE WET?

If paper items, such as books and manuscripts, have been exposed to excessive humidity, are near a water intrusion, under a sprinkler discharge or partially submerged in water, they should be inspected for moisture content with a moisture meter. The moisture meter will determine the amount of moisture present in the material. Simply visually inspecting the items or touching them will not tell the whole story. Moisture can be deceiving, you cannot always feel or see it. An archivist's electronic moisture measurement meter will give you the full picture.



DELMHORST P-2000 PAPER MOISTURE METER

The meter will read from 4.3% to 18% (saturation) moisture range on paper. It is important to check the owner's manual for instructions on how to calibrate the device prior to use and calibrate before each use.

Moisture Content is considered within the acceptable range when the measurement is < 7% MC (Moisture Content). Many offices may have documents that are in the 5% to 7% MC range. Moisture Content is considered higher than desired when the range is >7% MC but < 11% MC. Document moisture content is then considered "humid-damp".

It is recommended that action to reduce the moisture content to less than 7% be taken within 48-72 hours. During this time frame it is acceptable to try moisture removal on site with blocking or air movement when dealing with small batches of documents. If you are unable to remove moisture within 72 hours, schedule documents for freeze drying.

Moisture Content is considered "unacceptable" when the moisture content is greater than 11% MC. At this point, the documents are considered "wet" and should be freeze dried via sublimation immediately. Your first step is to freeze the documents to mitigate any further damage until the documents can be shipped to the freeze drying chambers.

Zone	ACCEPTABLE-DRY			HUMID-DAMP			UNACCEPTABLE-WET		
Delmhorst Reading	4.5	5	7	8.0	9	10	11	14	18
% of Saturation or moisture content of paper	25%	28%	39%	44%	50%	56%	61%	78%	100%

CONSIDERATIONS

Freezing: The most effective method way to stabilize water-damaged archival and library materials is freezing at low temperatures as quickly as possible. This is the most generally accepted method by conservators. The recommended freezing level should be around $-30\text{ }^{\circ}\text{C}$ ($-20\text{ }^{\circ}\text{F}$). Frozen materials should remain in cold storage until freeze drying can occur.

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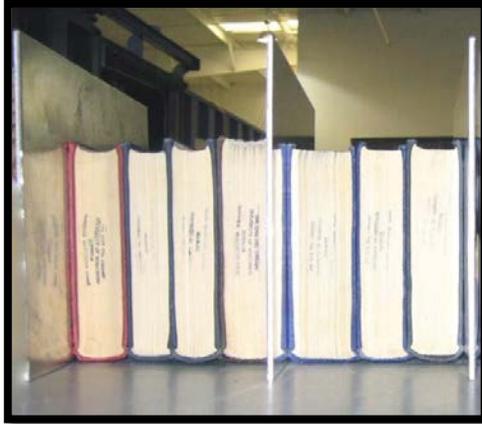


NO COMPRESSION



BUNGEE COMPRESSION

BMS CAT has developed a proprietary process of “Self-Compensating Mechanical Compression” book reforming. A snapshot of the process is illustrated below.



BENEFITS OF FREEZING AND FREEZE DYRING VIA SUBLIMATION

Freezing Documents Halts Mold: Mold requires three things to thrive: moisture, food and temperature. By freezing documents, the temperature required for mold to thrive is lowered to a point where it cannot survive. While mold spores are not destroyed by freezing, they remain dormant until a more favorable environment is available. Freezing will stop the infection of mold thus harmful damage to the documents ceases.

Freezing Stabilizes Soluble Inks and Dyes: Freezing has the additional advantage of stabilizing inks, dyes, dyestuffs and colorants used for manuscripts, maps, sketches and drawings that are soluble in water. Later, when freeze-drying takes place, migration or feathering of inks or dyes can be restrained since the liquid stage is bypassed.

Freezing Prevents Adhesion of Pages: Books and periodicals are generally printed on stock that uses a coating pigment with a binder of casein and starch, both of which are highly water-soluble. If coated stock is permitted to dry, it will turn the book into a clay-like brick at which point restoration is impossible. The only practical method to salvage these items, especially when large quantities are involved, is freezing while wet then freeze drying.

Freezing Gives You Time To Assess: By freezing water-damaged documents, they are stabilized as long as they remain frozen. Disasters can be stressful and confusing. When stabilizing documents through freezing, there is time to assess the damage. Decision makers can determine which documents can be discarded, replaced or copied. It allows time to determine what repairs or restoration is required and how much time it will take to recover damaged storage areas.

Freeze Drying Uses Fewer Chemicals & Produces Fewer Odors: The process uses fewer chemicals, thus producing limited odors. The vacuum chambers cause VOC's (Volatile Organic Compounds) to "flash off", boil or vaporize because the pressure in the chamber is lower than the boiling point of the VOC's. Additionally, many chemical contaminants escape with the gasses released during the process.



As a result, the documents will smell better and have very few (if any) remaining contaminants. If any contaminants do remain, they can be removed during the cleaning process.

Following a plane crash in the Hudson River, many paper documents were submerged in water overtaken by pungent jet fuel. Our freeze drying chambers were able to remove most of the odor from the jet fuel.

Freeze Drying is Safe for Documents and Books: "In studies conducted by the Research and Testing Office of the Library of Congress, there was NO evidence found that freeze drying causes damage of cellulosic and proteinaceous materials (5)." Source: Vacuum freeze-drying, a method used to salvage water-damaged archival and library materials. A UNESCO (United Nations Educational, Scientific, and Cultural Organization); Study 1987.

Freeze Drying Produces a Cleaner Document: The gasses released during the sublimation process deposit loose matter to the surface of the papers. This facilitates a better cleaning to the papers by removing silt, loose mold spores and other contaminants.

Freeze Drying Is a Safe and Secure Way to Dry Documents: According to the National Archives (NARA), “Records can dry in their original containers reducing risk for disruption of original order.” This allows us to have a secure process, keeping clients documents segregated from other client’s documents.



According to the National Archives (NARA), “Records must be removed from their containers, spread on shelves to dry in warm dehumidified air, and periodically rotated to expose wet paper surfaces.” As you can imagine, a great deal of space must be used to spread paper out individually. The risk of this process is that documents can be knocked off of shelves and intermixed with other client’s documents. Because paper is spread throughout a facility, there is greater risk of retrieving the wrong file or intermixing files.

WHAT CAN YOU DO?

If there is any advance notice of potential damage, all possible protective measures should be taken such as covering items with plastic, raising furniture and protecting electronics. Additionally, consider permanent storage of certain valuable items (rare books, historical newspapers or long term archival documents) in buffered, acid free storage boxes.

It is important to have a plan in place for a disaster. It is highly recommended that you pre-contract with a restoration company before a loss occurs. This gets any administrative “red tape” out of the way, expedites response times and allows you to carefully pre-qualify the service for your exact needs. BMS CAT offers a Response Service Agreement at no cost.

HOW CAN WE HELP?

BMS CAT offers over 8,500 cubic feet of freeze drying space in our freeze-drying chambers. Our 7th generation equipment is completely controlled electronically and monitored 24-hours a day by our trained professional recovery staff and around the clock security. BMS CAT recently upgraded software and equipment and continues to improve in several areas including:

- **More rapid drying cycles**
- **24 thermocouples per chamber for more precise knowledge of temperature inside boxes**
- **Increased control of chamber pressure**
- **Enhanced remote monitoring**
- **Decreased vacuum pressures down to 1 Torr**

References: National Archives and Records Administration (NARA), The Library of Congress, The United Nations, The Northeast Document Conversation Center, UNESCO (United Nations Educational, Scientific, and Cultural Organization)

CAN IT BE SAVED? RECOVERING DAMAGED DOCUMENTS

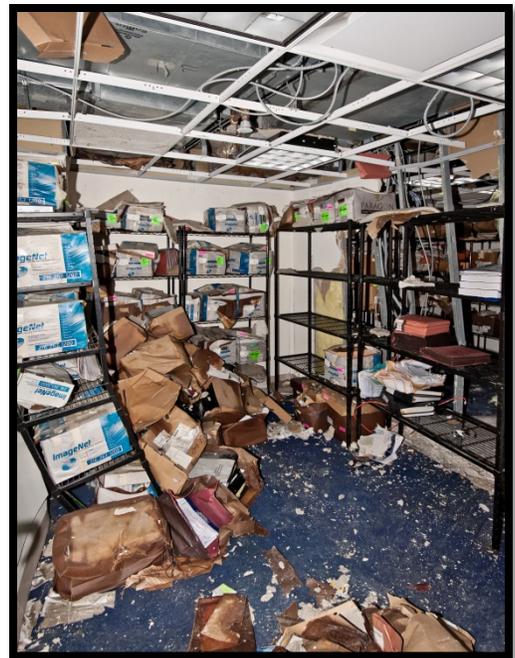


SUMMARY

When a facility suffers damage from water, fire or microbial growth, documents stored within are susceptible to irreversible damage. Can paper and media be restored?

WHY DOES IT MATTER?

In today's environment preserving documents for business and historical purposes is not only a need, it is often the law. Retention of records is required in many cases for several years. Additionally, some documents may have historical value to an organization. Documents and media that have become wet, moldy or have debris such as soot can be restored. Often, these materials are highly secure and careful consideration must be taken to ensure that any company hired to handle records have proper security protocol in place. Such was the case when BMS CAT was hired to restore documents damaged at a FBI facility during Hurricane Sandy.



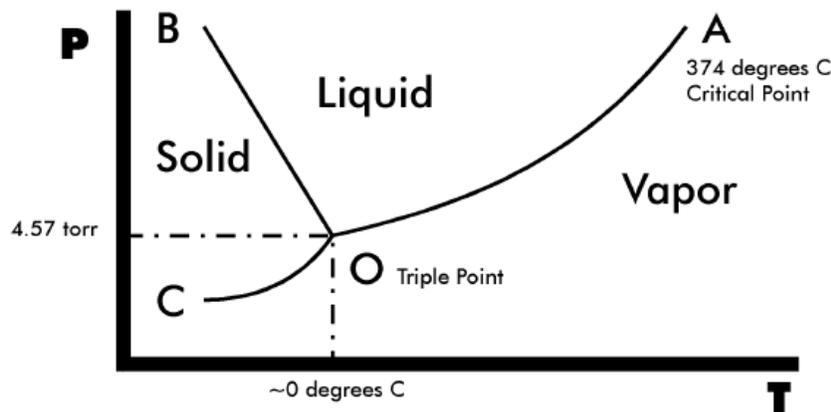
WHAT CAN BE DONE?

Documents exposed to water will continue to sustain further damage as the water equalizes or wicks into paper. The liquid state of water is what causes the damage to paper products. Think about when you spill a glass of water on a piece of paper. The paper will begin to wrinkle, ink may eventually run and the paper becomes brittle, tearing easily. Freeze drying is generally accepted to be the least damaging of all methods of drying. You can check out the National Archives comparison of drying

methods here. <http://www.archives.gov/preservation/disaster-response/drying-techniques.html>

Freeze drying via sublimation is the process that allows us to dry documents so they are never wet again. Simple, isn't it? When paper gets wet from something as devastating as a hurricane or as simple as a pipe breaking, it needs to be stabilized, dried and cleaned. Let's talk about stabilizing the documents. When a document gets wet, we need to stop the deterioration of the paper. We do this by freezing the box, or boxes, of documents. Documents are inventoried, palletized and placed into a refrigerator truck.

Freeze Dry Theory - Phase Diagram



Water Phase Diagram

The truck will be able to get the boxes to a temperature that will freeze the boxes and will stop the deterioration of the paper. We then ship the boxes to our facility for freeze-drying. When the boxes arrive at our facility, the next step is to verify the inventory and place the frozen boxes into the freeze drying chamber.

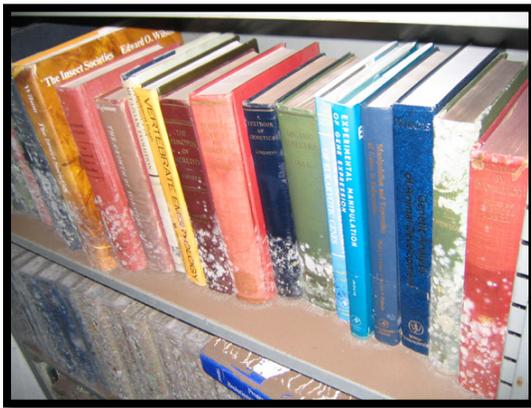
When the documents are placed into the chamber, probes are inserted into the frozen boxes to track the progress of documents. At this point, the chamber is closed causing a vacuum to be



created and the process of sublimation begins. The moisture is pulled out of the documents as a gas so the documents are not damaged any further. The documents are NEVER wet again (unless you spill that glass of water on them again). The moisture actually left the document as a gas. With freeze-drying, your documents are returned in the same condition as we received them.

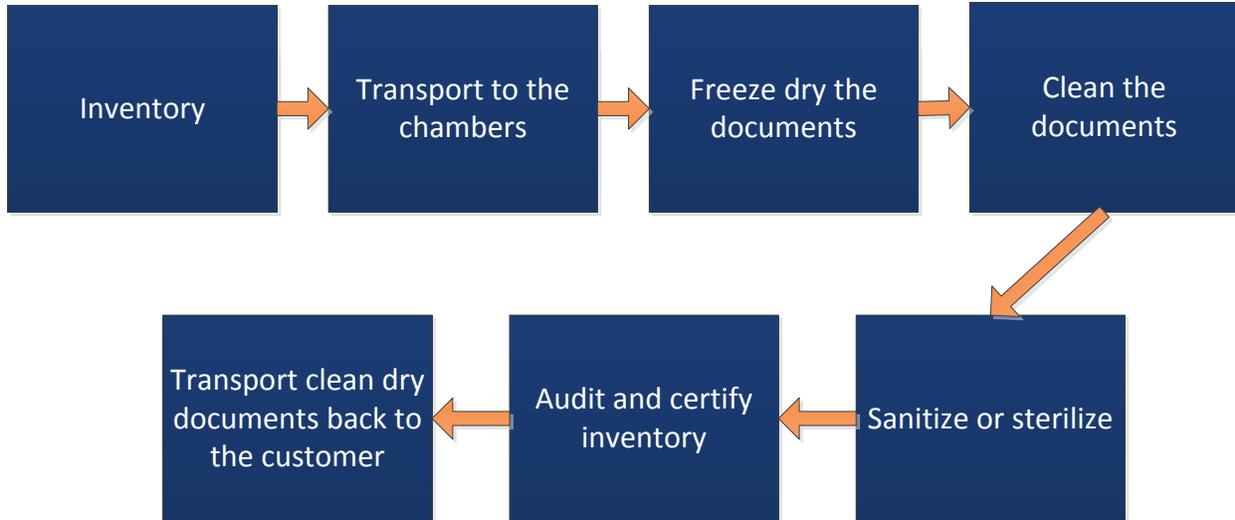
Desiccant drying is another method of drying but is generally less acceptable. The biggest issue is distortion of paper. Additionally, this method is labor intensive since records must individually be removed and spread on shelves and rotated periodically. If papers are in stacks they can become stuck together, so interleaving of plastic to separate sheets must occur. As you can imagine, this method takes up a lot of space during restoration, but it can also require more storage space AFTER restoration due to a high degree of distortion.

Now to documents damaged by char or soot. Often, items that have been exposed to fire have also been exposed to moisture. Char and soot can be brushed and vacuumed from documents. If edges of paper have been charred they can be trimmed to control the odor that likely exists. To further clean the item, a natural rubber sponge can be used. If you have even been around a fire, you know they can produce a strong odor and paper items are very susceptible to trapping odors. Ozone treatment is an effective method to deodorize paper materials.



Mold is another way documents can become damaged. Mold needs three things to thrive, moisture, warmth and food. Paper is a great food source for mold growth so all that is left is moisture and warmth. It is much more cost effective to prevent mold growth than reactively provide remediation. Therefore, HVAC systems in document storage areas should have independent humidity and temperature controls and be ON at all times to

provide a proper environment. If documents have over 20% water content by weight, they will need to be freeze dried before remediation is done. If there is a high mold spore count with active mold growth, the room and HVAC system should also be cleaned.



CONSIDERATIONS

If your documents are important enough to recover, security must be a concern.

Security occurs at several points as demonstrated below:

Customer Site Security	Transportation Security	Restoration Security
<ul style="list-style-type: none"> • Additional security should be hired if necessary • Segregate documents from other restoration activities • An inventory of the documents should be performed and audited • When documents are placed in a truck/trailer a security lock should be applied • A dedicated security person should visually monitor the trailer door • Documents should not be left alone during transport or when in the trailer • Restoration employees should have visible ID badges with pictures and wear uniforms 	<ul style="list-style-type: none"> • Trailer doors should be secured with a U.S. Customs High Security Seal • Straight through shipment should be used if common carrier is shipping • Team drivers should be used so no overnight stays are required • Transportation should be performed by a security vetted company with GPS Tracking • Driver background checks should be performed 	<ul style="list-style-type: none"> • The facility where restoration occurs should be secure • There should be no open doors for visitors to walk in • Employees should be background checked and drug screened • Only employees with a need to access the documents should be allowed to enter the facility • The facility should be alarmed • The document processing areas should be segregated from other areas of the building • Ensure that training for employees applicable to your industry has occurred (HIPAA, Sarbanes Oxley, etc.)

WHAT CAN YOU DO?

If there is any advance notice of potential damage, all possible protective measures should be taken such as covering items with plastic, raising furniture and protecting electronics. Additionally, consider permanent storage of certain valuable items (rare books, historical newspapers or long term archival documents) in buffered, acid free storage boxes.

It is important to have a plan in place for a disaster. It is highly recommended that you pre-contract with a restoration company before a loss occurs. This gets any administrative “red tape” out of the way, expedites response times and allows you to carefully pre-qualify the service for your exact needs. BMS CAT offers a Response Service Agreement at no cost.

Brandon Develli
BMS CAT- General Manager

8280 Stayton Drive Jessup, MD 20794 Cell: 667-274-4373 Email: bdevelli@bmscat.com

Objective

Responsible for the total operations of our regional center. You will lead a team of professionals including sales, marketing, and overall business development for the region. From an operation's stand- point you will assure excellence in work performed including Fire and Water mitigation, cleaning and pack-out of contents, construction rebuilds and put-backs. You will have full P&L responsibilities assuring all metrics are being met from full cycle cash flow to variable and fixed costs. You will be responsible for staffing, training, and all HR functions.

Education

- Virginia Polytechnic University Blacksburg, VA
- BS Human Nutrition, Foods, and Exercise 2005

Experience

BLACKMON MOORING/BMS CAT

November 2021-Present

General Manager (Mid-Atlantic Region)

- General Manager Responsibilities include complete oversight for the P&L for the Mid-Atlantic region. Leadership responsibilities include hiring/training new employees and providing support for 20+ staff members among multiple layers including administration, sales, estimating, project management and field production staff. Striving to build a culture of positive attitudes and maximum effort of the highest priority while focusing on accountability and teamwork. Positive growth in revenue and profitability year over year while increasing efficiency and efficacy remains the goal along with expanding our region through creating new opportunities by adding locations and team members. your GPA here and a summary of relevant coursework, awards, and honors]

BELFOR USA Group, INC

July 2016-November 2021

General Manager (Beltsville, MD/Baltimore, MD)

- General Manager Responsibilities includes oversight of daily business activities, improving business functions, creating and implementing budgets and business goals. Successful

management of 20+ full-time employees including multiple layers of administration, sales, estimating, project management and field production staff. Maintain close relationships with team members striving to build accountability and a team focused culture. Projected positive growth in revenue and profitability year over year.

Large Loss Estimator/Sales (Sterling, VA)

- Responsibilities include oversight of disaster recovery services related to fire, water, and storm damage including emergencies. stabilization through reconstruction. Work closely with insurance adjusters, property owners/building managers to generate accurate scopes of work for reconstruction. Generate new business through providing industry leading customer service and expertise.
- Maintain constant contact with project managers to guarantee projects are performed within the scope of work, on time, and on schedule.

Jenkins Restorations Inc

August 2011-February 2016

Large Loss Estimator/Sales (Sterling, VA)

- Preparation of scopes of work in the insurance restoration industry to include fire, water, and storm restoration in residential and commercial construction. Scopes of work prepared are for contract values greater than \$50,000. Responsibilities also include successful negotiation of loss to ensure successful settlement to secure contract between Jenkins Restorations and the client. Successfully generate and convert leads. Maintain close relationships with insurance adjusters to ensure a strong referral base. Work closely with project managers to ensure project is completed on time and budget within the parameters of scope. Number of yearly projects 100+. Responsible for securing \$9,250,000 of contracts in 2014, and \$7,500,000 in 2015. Total yearly revenue generated approximately 1/10th of overall revenue for the company. Number one in sales for company in 2014 and 2015 out of 70+ sales reps in total revenue and profit

Craig Martin

BMS CAT- Regional Director- Large Loss Project Manager

5718 Airport Freeway Haltom City, TX Cell: 216-375-5070 Email: cmartin@bmscat.com

Objective

- Craig Martin is responsible for responding to major losses throughout the world. Mr. Martin develops scope, pricing and implements strategies performing the work in as timely and efficient a manner as possible. He conducts on-site supervision, and directly communicates with management and facilitators of each project to make sure priorities and deadlines are being met. Mr. Martin also manages several key accounts for BMS Cat and participates in most high-level presentations to target accounts.

Education

- Pymatuning Valley High School 1992
- Lakeland Community College- Associate Degree 1995

Experience

BMS CAT, Inc. Corporate Office

1999- Present

BMS Cat Regional Director

- Mr. Martin has over 23 years of experience in the restoration and reconstruction industry. Joining BMS CAT in 1999, Mr. Martin can manage and execute all facets of restoration, reconstruction and Personal Effects recovery. His exceptional operational expertise has allowed him the opportunity to lead projects for a variety of industries including hospitals, hotels, multi-family living and universities. Mr. Martin is the Operations Point of Contact for BMS Cat on all Personal Effects and Transportation Incident Projects Mr. Martin has managed some of the largest projects in the history of BMS Cat, having managed up to 2500 people on a single job site.

Hal W. Hocking
BMS CAT- Regional Account Manager

8280 Stayton Drive Jessup, MD 20794 Cell: 240-460-4813 Email: hhocking@bmscat.com

Objective

- You will be marketing to facilities managers, building engineers, property management and ownership groups who control large amounts of commercial square footage
- Responsible for preparing and executing the overall strategic plan for business development and account management.
- Prospects and sets up appointments.
- Prepares for and attends the meetings set with local commercial accounts and National Accounts with local presence.
- Identifies and calls on National and Regional prospects to maximize revenue opportunities
- Manages the tracking of local marketing efforts in the assigned region
- Assists with collection efforts both regionally and nationally.

Education

- Lafayette College Easton PA 18042
BA Psychology 1981

Experience

BMS CAT, Inc. Mid -Atlantic Region **2013-Present**
Regional Account Manager

- Establish local goals and accurate reporting tools for respective region.
- Manage construction budget to maximize revenue potential of accounts.
- Manage CRM database with job information and notes regarding job progress.
- Cultivate client relationships, capturing repeat as well as new business.
- Develop and implement integrated insurance programs

LVI Environmental Services, Inc. Mid-Atlantic Region & Tampa, FL **2004-2013**
Business Development Manager

- Created and fostered relationships with multiple target markets to expand company service lines which concentrated on commercial asbestos abatement and demolition.

- Established local goals and accurate reporting tools for respective region, maintaining a detailed CRM customer base.
- Key advocate in closing local and regional opportunities.
- Cultivated client relationships, capturing repeat as well as new business.
- Developed and implemented integrated marketing programs leveraging to maximize clients' return on investment.

<p>Matt Jaroma, Vice President of Sales – Documents</p>	<p>SCOPE OF RESPONSIBILITY: Managing projects focusing on document, artifacts, biological, microbial, and other environmental remediation. Mr. Jaroma has managed multiple projects at once and has overseen the successful implementation of techniques associated with document cleaning, document drying, artifact recovery, inventory and security. He develops project scopes for clients, personally reviews all analytical and sampling strategies, and acts on behalf of the client as consultant to analytical and engineering firms. He has helped in the recovery and restoration of museum artifacts, library special collections, fine art, original masters of audio recordings, etc.</p> <p>PROFESSIONAL BACKGROUND: With a successful career in document storage, Mr. Jaroma understands the needs of his customers. He has over 25 years of experience in developing specialized solutions for a variety of customers. His ability establish relationships with his customer base has allowed him to successfully manage strategic plans .</p> <p>EDUCATION and CERTIFICATIONS:</p> <ul style="list-style-type: none">• University of Michigan, Bachelor of Arts, History• Golden Key National Honor Society
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Disaster Salvage and Recovery of National Library of
Medicine (NLM) Collections
GMU RFP
BMS CAT Past Performance

PROJECT OWNER'S NAME: Hearst Western Properties

PROJECT NAME: WR Hearst Bronx Collection

ADDRESS: 5 3rd Street Suite 200 San Francisco, CA 94103

CONTACT PERSON: Brian Kenny

TELEPHONE NUMBER: 415-517-8762

EMAIL: bkenny@hearst.com

CONTRACT PERIOD October 2021 - present

CONTRACT/PROJECT AMOUNT*: \$ 302,622.42

WORK PERFORMED: (check all that apply for this project)

REMEDIATION/MITIGATION RESTORATION/RECONSTRUCTION DOCUMENT RECOVERY

ELECTRONIC EQUIPMENT & ELECTRONIC MEDIA RECOVERY/RESTORATION Other: _____

Brief, but Detailed, Description of the Contract/Project:

- BMS CAT packed out 625 boxes of pigeon guano contaminated material. Each box was double wrapped and sealed and shipped to our facility for stabilization and cleaning. BMS CAT inventoried each box with a number and contents description and provided that list to Hearst Western Properties.
- All contaminated material was cleaned and disinfected in a contained area using all necessary PPE.
- All material was then gamma-irradiated for sterilization. Additional high valued antiques were also cleaned and sanitized as part of this project.
- Once this was complete, the collection was staged at our facility and for inspection by the Hearst Western Properties officials and is currently housed there awaiting disposition regarding shipment back to the Hearst Western Properties.

Disaster Salvage and Recovery of National Library
of Medicine (NLM) Collections
GMU RFP
BMS CAT Past Performance

PROJECT OWNER'S NAME: Library of Congress

PROJECT NAME: Document Recovery of Frozen Documents

ADDRESS: 101 Independence Avenue SE LA 325 Washington, DC 20540

CONTACT PERSON: Elmer Eusman

TELEPHONE NUMBER: 202-716-4581

EMAIL: EEUS@loc.gov

CONTRACT PERIOD Contract # LCLSP200D0013 In Force currently

CONTRACT/PROJECT AMOUNT*: \$ 1. September 2020 \$10,384.14 2. May 2022 \$39,127.18 March 2023 \$11,994.32

WORK PERFORMED: (check all that apply for this project)

REMEDIATION/MITIGATION RESTORATION/RECONSTRUCTION DOCUMENT RECOVERY
 ELECTRONIC EQUIPMENT & ELECTRONIC MEDIA RECOVERY/RESTORATION Other: _____

Brief, but Detailed, Description of the Contract/Project:

1. September 2020 Job: BMS CAT picked up and shipped cleaned 55 books of varying degrees of microbial growth at our document recovery center
Books were picked up by BMS CAT employees, shipped to our facility, cleaned and re-delivered to the Library of Congress
2. May 2022 Job: BMS CAT transferred approximately 2000 water damaged books to our facility for freeze drying and consequent cleaning. Once books were cleaned,
BMS CAT re-delivered them to the Library of Congress.
3. March 2023 job: BMS CAT shipped 20 boxes of frozen documents to our facility, freeze dried and consequently cleaned the documents and
returned them to the Library of Congress.

DISASTER SALVAGE AND RECOVERY OF
NATIONAL LIBRARY OF MEDICINE (NLM) COLLECTIONS
GMU RFP
BMS CAT
PAST PERFORMANCE

PROJECT OWNER'S NAME: National Agricultural Library (USDA)

PROJECT NAME: National Agricultural Library Book Cleaning and HVAC Cleaning

ADDRESS: 10301 Baltimore Avenue #115 Beltsville, MD 20705

CONTACT PERSON: Scott Hanscom & Romando Green

TELEPHONE NUMBER: 301-504-5755 240-565-2658

EMAIL: Scott.Hanscomb@usda.gov romando.green@usda.gov

CONTRACT PERIOD October 2022 – February 2023

CONTRACT/PROJECT AMOUNT*: \$1.094,479.15

WORK PERFORMED: (check all that apply for this project)

REMEDIATION/MITIGATION RESTORATION/RECONSTRUCTION DOCUMENT RECOVERY

ELECTRONIC EQUIPMENT & ELECTRONIC MEDIA RECOVERY/RESTORATION Other: HVAC Cleaning

Brief, but Detailed, Description of the Contract/Project:

BMS CAT was contracted to clean, on-site, the National Agricultural Library's collection of books, which houses approximately 3.5 million volumes, in Beltsville, MD.

BMS CAT constructed a negative air containment, sealed off critical areas such as HVAC intakes and returns, and cleaned all books located in each containment, as well as all the shelving units, walls and floors in each containment. This was done on each floor of the library, using a top-down approach.

As part of this contract, BMS CAT also cleaned the HVAC system of the library.

*Additional technical details are available upon request

NATIONAL LIBRARY OF MEDICINE (NLM) COLLECTIONS
GMU RFP
BMS CAT
PAST PERFORMANCE

PROJECT OWNER'S NAME: National Library of Medicine (NIH)

PROJECT NAME: NLM Book Cleaning
Project _____

ADDRESS: 8600 Rockville Pike Bethesda, MD 20894
CONTACT PERSON: Marie Colliins & Keturah Busey

TELEPHONE NUMBER: 301-802-9170 301-627-6414

EMAIL: marie.collins2@nih.gov buseyk@mail.nih.nlm.gov

CONTRACT PERIOD November 2019 to March 2020

CONTRACT/PROJECT AMOUNT*: \$ _____

WORK PERFORMED: (check all that apply for this project)

REMEDIATION/MITIGATION RESTORATION/RECONSTRUCTION DOCUMENT RECOVERY

ELECTRONIC EQUIPMENT & ELECTRONIC MEDIA RECOVERY/RESTORATION Other: _____

Brief, but Detailed, Description of the Contract/Project:

BMS CAT was awarded contract # HHSN276201900001B to provide on-site book cleaning at the National Library of Medicine, located on the National Institute of Health main campus in Bethesda, MD.

BMS CAT constructed a negative air containment, sealed off critical areas such as HVAC intakes and returns, and cleaned all books located in each containment, as well as all the shelving units, walls, and floors in each containment. This process was done for each range in the areas that were designated to be cleaned. Books that were damaged extensively by microbial growth were sent to our document recovery facility in Ft. Worth for more detailed cleaning and then returned when this process was complete.

*Additional technical details are available upon request

Preferred Time and Materials Rate Schedule 2023

I. Labor

A. Labor Rates

These rates apply to personnel engaged to fulfill the terms of the contract, whether regular full time employees of BMS Cat or temporary hires employed directly by BMS Cat, secured through a labor service or subcontractor. Rates stated below are per person per hour.

CLASSIFICATION	HOURLY RATE
General Cleaning Labor	\$ 44.00
Management Fee	4.00
Carpenter/ Framers	86.00
Clerical	46.75
General Restoration Supervisor	70.00
Dehumidification Supervisor/ Tech	80.00
Document Recovery Tech	82.00
Document Specialist	77.00
Drywall Installer/ Finisher	80.00
Equipment Operator	75.00
Flooring Installer	78.00
Generator Technician	95.00
Remediation Supervisor / Technician	75.00
Resource Coordinator	70.00
Project Accountant	70.00
Electronics Restoration Supervisor / Technician	66.00
Industrial Corrosion Control Supervisor / Technician	61.00
Skilled / Construction Trades Not Listed	Xactimate Rate per Geographical Location
Truck Driver	65.00
Assistant Project Manager	85.00
Painter	75.00
Project Manager	110.00
Project Director	120.00
Project Estimator	100.00
Health and Safety Officer	100.00
Project Consultant	160.00
Project Coordinator	150.00
Mold Remediation Labor	60.00
Restoration Tech	55.00
Rofer	105.00
Technical Consultants / Engineers	Cost + 30%

B. Other Labor Provisions

1. These rates and provisions are predicated upon BMS Cat standard wage rates and overtime compensation practices. To the extent the work under a particular contract is subject to Federal and State minimum wage or hour laws or collective bargaining agreements which modify BMS Cat standard rates and practices, adjustments shall be made to the hourly rates and other labor provisions stated above.
2. Standard Hours - All labor rates stated above are for the first 40 hours worked in a workweek, beginning on Monday and ending on Sunday, exclusive of BMS Cat holidays. In the event of a community-wide disaster, overtime will be billed at the rates scheduled above, as it is incurred, regardless of the number of hours worked on a particular job.

3. Non-Standard Hours - The rates for labor performed by all classifications in a work week over 40 hours, will be 1.5 times the rates scheduled in Section I.A above. Rates for labor performed on BMS Cat recognized holidays will be 2.0 times the rates scheduled in Section I.A. above. In the event BMS Cat is required to pay double time for any work performed, pursuant to state or federal law or the terms of any collective bargaining agreement, the rates for such labor hours shall be 2.0 times the rates scheduled in Section I.A. above.
4. The Management Fee above applies when BMS Cat supervises the customer's employees, rather than hiring General Cleaning Laborers. The payroll, taxes and benefits are the responsibility of the customer.
5. Remediation Supervisor / Technician labor classification will be charged when personnel are using half-face or full-face respirators.
6. During the course of performance of work, BMS Cat may add additional labor classifications to the schedule above at rates to be determined by BMS Cat.
7. Premium Wages - When working in and around high cost of living areas including, but not limited to California, Washington, New York, New Jersey, Hawaii, Washington DC, Chicago, Boston, Philadelphia and Internationally, a multiplier of 1.25 will be applied to all listed labor rates in order to account for increased costs. The premium is the minimum and is subject to change. Any modifications to the multiplier will be submitted and become part of this agreement.
8. Travel time for personnel shall be billed to the contract at the rates in Section I.A and I.B.2 above.
9. In the event that federal/state prevailing wages and/or collective bargaining rates exist, BMS Cat may charge the cost of labor plus an additional 30% at BMS Cat's discretion.

II. Equipment Rental

A. Equipment Rental Rates

The following rates apply to equipment utilized in the performance of the work (whether supplied from BMS Cat inventory or specifically purchased by BMS Cat or supplied by a subcontractor).

CLASSIFICATION	RATE
Air Compressor, < 10 gal	\$ 40.00
Air Compressor - Large	85.00
Air Mover / Carpet Dryer	32.00
Axial Fan	38.50
Blasting Unit - Soda	800.00
Cable Tails - #2 - Male or Female	23.00
Cable Tails - 4/0 - Male or Female	13.00
Cable Ramps	20.00
Cable - Camlock Tees	9.00
Cable - Spiderbox - 6/4 50 amp - 50 ft	44.00
Cable - Spiderbox - 6/4 50 amp - 100 ft	64.00
Cable - 2/5 Pin and Sleeve Cable - 50 ft	70.00
Cable - 4/0 Camlock Cable - 50 ft	30.00
Cable - 4/0 Camlock Cable - 100 ft	44.00
Cable - Banded Wire - 50 ft	50.00
Cart - Debris Cart	35.00
Cart - Flat Cart	30.00

CLASSIFICATION	RATE
Dehumidification Unit - Phoenix 200 - or equivalent	165.00
Dehumidification Unit - Phoenix 300 - or equivalent	200.00
Dolly - Drywall	35.00
Edge Guard, linear foot	5.00
EDP - Tool Set	24.00
EDP - Instrument Drying Oven	180.00
EDP - High Pressure Sprayer	60.00
Electrical Distribution Panel - 200 amp Cam/ 50 amp Splitter	195.00
Electrical Distribution Panel - 400 amp Cam/ 100 amp 208V Splitter	275.00
Electrical Distribution Panel - 400 amp Cam/ 100 amp 480V Splitter	275.00
Electrical Distribution Panel - 600 amp Multi	300.00
Electrical Distribution Panel - 1200 amp Multi	400.00
Electrical Distribution Panel - Spider Box with GFCI	90.00
Electrical Distribution Panel - 400 amp Disconnect	265.00
Electrical Distribution Panel - 480V to 120V (12 x 20amp circuits)	250.00
Electrical Distribution Panel - 480V to 240V/110V - 200 amp with Transformer	340.00
Electrical Distribution- 208V to120V(per main box 6 stringers w/quads + 1000 ft cable)	750.00
Electrical Distribution Panel - 3 Gang Box/3 - 20 amp 120V GFCI	28.00
Extraction Unit - LRU	525.00
Fall Protection	30.00
Fans - Industrial	95.00
Flanders Filter 24" x 24"	28.00
Flanders Filter 24" x 48"	55.00
Foamer	100.00
Fogger - Spray Mist	40.00
Fogger - Thermo-Gen	110.00
Furnace - Portable	72.00
Fuel Tank - Single Wall - 275 Gallon	125.00
Fuel Tank - Single Wall - 500 Gallon	300.00
Fuel Tank - Single Wall - 1000 Gallon	500.00
Fuel Tank - Single Wall - 2300 Gallon	625.00
Generator - Less than 10 kW	135.00
Generator - 35 KW	340.00
Generator - 36 KW	485.00
Generator - 60 KW	575.00
Generator - 80 KW	625.00
Generator - 100 KW	850.00
Generator - 150 KW	935.00
Generator - 180 KW	1,000.00
Generator - 200 KW	1,050.00
Generator - 230 KW	1,175.00
Generator - 250 KW	1,210.00
Generator - 300 KW	1,485.00
Generator - 350 KW	1,925.00
Generator - 400 KW	2,000.00
Generator - 500 KW	2,750.00
Generator Cable - Per Linear foot	1.50
HEPA Air Filtration Unit - 2000 CFM	140.00
HEPA Air Filtration Unit - up to 1000 CFM	110.00
HVAC - Air Tool Kit	28.00
HVAC - Cutting / Spray Kit	28.00
HVAC - Duct Auger	100.00
HVAC - Duct Sweeper	80.00
HVAC - Video Tool	150.00

CLASSIFICATION	RATE
Hydroxyl Generator Boss	225.00
Hydroxyl Generator Boss XL3	240.00
Hygrothermograph - Recording	24.00
Injectidry Unit	145.00
Interceptor / Flood Pumper	160.00
Lights - Balloon Lights	130.00
Lights - Quartz Demolition	20.00
Lights - Light Tower	180.00
Lights - Wobble Lights	45.00
Micromanometer	20.00
Micromanometer - Recording	100.00
Mobile Command Center	425.00
Moisture Meter - Penetrating or Non-Penetrating	26.00
Moisture - Thermal Camera	125.00
Negative Air Machine	150.00
Ozone Generator - Model 330	120.00
Ozone Generator - Model 630	160.00
Ozone Generator - Model OG-EA	25.00
Pallet Jack	70.00
Pump - Trash - Gas 2"	150.00
Pump - Sump	52.00
Quad Box Cable - 12/5 Extension Cable - 50 ft	22.00
Quad Box Cable - 12/5 Extension Cable - 100 ft	30.00
Quad Box Feeder Panel - 100 amp	150.00
Quad Box Feeder Panel - 200 amp	180.00
Quad Box String - 10 ft with GFI	22.00
Quad Box String - 20 ft with GFI	26.00
Quad Box String - 30 ft with GFI	32.00
Quad Box String - 50 ft with GFI	36.00
Radio - Personnel Communication	20.00
Respirator - Full Face	15.00
Respirator - Half Face	10.00
Safety Cones	5.00
Saw - Cut Off	78.00
Saw - Kett	45.00
Sprayer - Commercial Airless	180.00
Sprayer - Electrostatic	165.00
Spot Cooler- 1 ton	195.00
Spot Cooler- 2 ton	350.00
Steamatic Extraction System	250.00
Steamatic TMU Extraction System	525.00
Thermohygrometer	24.00
Trailer - Flatbed, Cargo, Reefer	225.00
Trailer - Flat Deck	195.00
Truck - Box (inclusive of mileage)	250.00
Ultrasonic Decontamination Vat	80.00
Vacuum - Commercial Canister	35.00
Vacuum - EDP Anti-Static	75.00
Vacuum - HEPA	110.00
Vacuum - Upright	20.00
Van - Cargo / Passenger	140.00
Vehicle - Passenger/Pickup	95.00
Vehicle - 3/4 ton Pickup	175.00
Vehicle - 1 ton Pickup/ Flatbed	200.00

CLASSIFICATION	RATE
Vehicle - 1 1/4 ton Pickup / Flatbed	220.00
Wall Aerator Set	50.00
Washer - High Pressure	100.00
Washer - High Pressure - Hot	150.00
Zip wall Magnetic Door Kit	10.00
Zip Poles - Each	10.00
X-Ray Cleaning System	450.00

B. Other Equipment Rental Rate Provisions

1. The daily rental rate shall be charged for each calendar day or portion thereof during which the equipment is used to perform work, regardless of the number of shifts on which the equipment is used during the day.
2. During the course of performance of the work, BMS Cat may add additional equipment to the schedule above at rates to be determined by BMS Cat.
3. Equipment utilized in the performance of the work not listed in II.A. or added as provided in II.B.2. shall be BMS Cat's cost thereof plus a mark-up of ten and ten percent (10% and 10%).

C. Small Tools

Items such as shovels, ladders, extension cords, small hand tools, etc., which are not included in the Schedules above, will be compensated to BMS Cat by an application of a small tool charge in the amount of three percent (3%) of total labor billings. Any items purchased specifically for the job, will be charged per the "Other Charges" section listed in the Rate Schedule.

III. Material Rates - * - represents a proprietary BMS Cat product

A. Material Rates

CLASSIFICATION	RATE	uom
Absorbent Pad	\$ 11.50	each
Antigel	17.00	quart
Anti-Microbial Sealer	120.00	gallon
Adhesive Remover	15.00	can
Alcohol - Isopropyl	55.00	gallon
Applicators - 6" Cotton	25.00	m
Biocides/Disinfectants	64.00	gallon
Blades - Kett Saw	13.50	each
Bleach	9.00	gallon
Boots - Rubber	50.00	pair
Box - Book	4.50	each
Box - Dish	7.50	each
Box - Freeze Dry	4.75	each
Brush, Grout	5.25	each
Brush, Scrub, Long Handle.	14.00	each
Brush, Wire	8.75	each
Carpet Deodorizer*	42.00	gallon
Carpet Mask	125.00	roll
Cartridge - Respirator	20.00	each
Coil Cleaner* or equivalent	45.00	gallon

CLASSIFICATION	RATE	uom
Cotton Cleaning Cloths	7.95	/ lb
Desudser	55.00	/ gallon
Dry Solvent Stain Remover* or equivalent	48.00	/ gallon
EDP - Corrosion Control Lubricant #1* or equivalent	75.00	/ gallon
EDP - Corrosion Control Lubricant #2* or equivalent	72.00	/ gallon
Emulsifier - Powder* or equivalent	11.25	/ lb
Emulsifier - Liquid* or equivalent	49.50	/ gallon
Exxpert Formula 828 Concentrate* or equivalent	39.00	/ gallon
Filter - Carbon	49.75	/ each
Filter - HEPA for Air Filtration Unit	295.00	/ each
Filter - HEPA for Vacuum	495.00	/ each
Filter - Primary	4.00	/ each
Filter - Secondary 24 x 24 x 2	12.00	/ each
Filter - Secondary 15 x 18 x 2	13.00	/ each
Filter - Dehumidification	10.00	/ each
Floor Dry	25.00	/ bag
Floor Protection - Ram Board	120.00	/ roll
Furniture Blocks	90.00	/ box
Furniture Pads	110.00	/ box
Furniture Polish	12.00	/ can
Glass Cleaner* or equivalent	15.00	/ gallon
Glass Cleaner	8.25	/ can
Gloves - Cotton	2.80	/ pair
Gloves - Kevlar (Cut Resistant)	11.00	/ pair
Gloves - Latex	2.25	/ pair
Gloves - Leather	7.50	/ pair
Gloves - Mechanics	18.50	/ pair
Gloves - Nimble Finger (N-Dex)	1.25	/ pair
Goggles	9.00	/ each
Grid Clips	5.25	/ each
Hand Cleaning Wipes	50.00	/ tub
HEPA Vac Bonnets	20.00	/ each
Ice	6.25	/ bag
Inventory Tags	80.00	/ box
Lemon Oil	48.00	/ gallon
Lin-Aire Liquid Spray Concentrate* or equivalent	80.00	/ gallon
Lin-Aire Absorption Gel* or equivalent	14.30	/ lb.
Lin-Set D-1* or equivalent	82.00	/ gallon
Lin-Set Duct Seal* or equivalent	90.00	/ gallon
Mask - N95	84.00	/ box
Mask - Particulate	40.00	/ box
Mats - Sticky, Wak-off	105.00	/ case
Metal Flashing	60.00	/ roll
Mop Heads	12.00	/ each
Odormatic* or equivalent	57.00	/ gallon
Painters Plastic .75 mil	60.00	/ roll
Paper - Corrugated	170.00	/ roll
Paper - Craft	75.00	/ roll
Pigmented Sealer	55.00	/ gallon
Polishing Pads	50.25	/ box of 20
Polyester Filter Material	184.00	/ roll
Polyethylene Bags - 3-6 mil	134.00	/ roll
Poly. Sheeting (20'x100' roll)(4 mil)	118.00	/ roll
Poly. Sheeting (20'x100' roll)(6 mil)	160.00	/ roll

CLASSIFICATION	RATE	uom
Poly. Sheeting (20'x100' roll)(4 mil)-fire ret.	170.00	/ roll
Poly. Sheeting (20'x100' roll)(6 mil)-fire ret.	215.00	/ roll
Pump - Barrel Syphon	33.00	/ each
Reodorant* or equivalent	97.00	/ gallon
Restoration Sponge	2.40	/ each
Roof Felt - 15 lb.	45.00	/ roll
Roof Felt - 30 lb.	47.00	/ roll
Roofing Cement, Black Tar	27.00	/ gallon
Safety Glasses	6.60	/ each
Service Kit - Generator up to 99 KW	495.00	/ each
Service Kit - Generator 100 to 199 KW	895.00	/ each
Service Kit - Generator 200 to 299 KW	1,295.00	/ each
Service Kit - Generator 300 to 399 KW	1,695.00	/ each
Shrink Wrap	59.00	/ roll
Shockwave	85.00	/ gallon
Spray Adhesive	8.00	/ can
Spray Bottle with Trigger	4.75	/ each
Stainless Steel Polish	15.00	/ can
Suit - Tyvek	14.00	/ each
Tape - Boxing	4.95	/ roll
Tape- Builder Board	20.00	/ roll
Tape - Duct	10.55	/ roll
Tape - Masking	6.75	/ roll
Tape - Blue Remediation	13.58	/ roll
Tape - Painters	15.75	/ roll
Tape - Barricade	24.00	/ roll
Tape - HVAC, Aluminum	40.00	/ roll
Tape - Layflat	65.00	/ roll
Tarp Material	0.40	/ sq. ft.
ThermoFog spray	116.00	/ gallon
Trash Bages - Disposable	45.00	/ roll
Tubing - Lay Flat	325.00	/ roll
Tubing - Lay Flat	1.30	/ LF
Vinyl & Leather Conditioner* or equivalent	36.00	/ quart
Vacuum Bags	6.50	/ each
Water - Bottle	9.50	/ 24 pack
Wipes - Lint free, anti-static	65.00	/ case
Wrap - Bubble, anti-static	100.00	/ roll
Zippers - containment	16.75	/ each

B. Other Material Rate Provisions

1. The foregoing prices shall be applied to all materials on the schedules above which are utilized in the performance of the work, whether shipped to the site from BMS Cat Inventory, shipped directly to the site from BMS Cat's sources or purchased locally by BMS Cat from either an affiliated or non-affiliated entity.
2. During the course of performance of the work, BMS Cat may add additional materials to the schedule above at rates to be determined by BMS Cat.
3. Materials utilized in the performance of the work not listed in III.A. or added as provided in III.B.2. shall be BMS Cat's cost thereof plus a mark-up of ten and ten percent (10% and 10%).

IV. Document Remediation

Specific freeze drying costs will be determined per job, based on the factors relevant to each job and pricing will fall in the range of \$40.00 - \$74.00 per cubic foot.

These factors include, but are not limited to:

- Nature of Damage
- Moisture Saturation
- Degree of Char / Soot Residue
- Mold / Mildew Infestation
- Smoke Odor
- Deodorization Requirements
- Contamination Factors - Debris, Sewage, Silt and / or Hazardous Materials

The above rates represent the charges for freeze drying only. Labor, equipment, materials, transportation and other costs incurred in connection with document remediation will be billed in accordance with the appropriate schedules and provisions contained in this Rate Schedule.

V. Dehumidification, Stabilization and Conditioned Air

Specific costs for Dehumidification, Stabilization and Conditioned Air services. will be determined per job, based on the factors relevant to each job and pricing will fall in the ranges indicated below.

These factors include, but are not limited to:

- Nature of Damage
- Moisture Saturation
- Height of Buildings, Ceilings and Affected Space
- Length of Job and / or Time Constraints
- Other Contamination Factors
- Local Weather Conditions
- Other pertinent conditions or situations as they may apply

These and other factors can cause the cost to provide such services to vary widely. The standard practice is to extend pricing on a firm unit price basis when there are no extenuating circumstances. Under normal conditions, pricing will generally fall in the following ranges depending on the above referenced factors.

Normal Range:

Dehumidification - \$1.95 to \$3.00 per square foot during a 10 to 20 day timeframe

Stabilization - \$0.35 to \$0.65 per square foot per week

Conditioned Air - \$0.35 to \$0.65 per square foot per week

The above rates represent the charges for dehumidification, stabilization and conditioned air and for their related dehumidification services for the area specified in the contract, work authorization or scope of work. Transportation, generators and peripherals, electrical power, propane, fuel and other costs incurred in connection with dehumidification, stabilization and conditioned air services will be billed in accordance with the schedules and provisions contained in this Rate Schedule.

VI. Area Wide Catastrophic Events

Community wide events to include hurricanes, tornadoes and regional flooding.

BMS Cat shall reserve the right to charge a catastrophe surcharge not to exceed six percent (6%) of the total amount invoiced excluding vendor or subcontractor totals for all projects as part of any area wide catastrophe. The fee will cover freight, warehousing and delivery charges.

VII. Reimbursables

A. Travel, Lodging and Per Diem

BMS Cat shall be compensated for costs incurred for travel, lodging and per diem for BMS Cat employees, for BMS Cat employees, whether regular full time employees of BMS Cat or temporary hires employed directly by BMS Cat or hired through a labor service or subcontractor assigned to the work on the basis of BMS Cat's cost for such charges plus a ten and ten percent (10% and 10%) mark-up on such costs.

B. Other Services, Freight / Transportation and Other Charges

The costs incurred by BMS Cat for all services such as Industrial Hygienist, Rental Equipment, Water, Fuel, Dumpsters, Freight / Transportation of materials, supplies or equipment to and from the site of work or a BMS Cat temporary local warehouse and other services / charges which are not identified in sections I through V above, but are utilized in the performance of the contract shall be billed at BMS Cat's cost plus a ten and ten percent (10% and 10%) mark-up on such costs.

C. Taxes and Permits

The rates contained in this schedule are exclusive of federal, state and local sales or use taxes and any applicable federal, states or local approvals, consent, permits, licenses and orders incidental to performance of the work. BMS Cat shall be compensated for all costs incurred which are described above on the basis of BMS Cat's actual cost incurred for such items.

Specific Requirements Section XIII Section B Item #6.

BMS CAT responses are in Bold after each item.

- A. Are you and/or your subcontractor currently involved in litigation with any party? **No**
- B. Please list any investigation or action from any state, local, federal, or other regulatory body (OSHA, IRS, DOL, etc.) related to your firm or any subcontractor in the last three years. **No**
- C. Please list all lawsuits that involved your firm or any subcontractor in the last three years. **N/A**
- D. In the past ten (10) years has your firm's name changed? If so, please provide a reason for the change **N/A**

ATTACHMENT A
SMALL BUSINESS SUBCONTRACTING PLAN
TO BE COMPLETED BY OFFEROR

Offerors must advise any portion of this contract that will be subcontracted. All potential offerors are required to include this document with their proposal in order to be considered responsive.

Small Business: "Small business (including micro)" means a business which holds a certification as such by the Virginia Department of Small Business and Supplier Diversity (DSBSD) on the due date and time for proposals. This shall also include DSBSD certified women- owned and minority-owned businesses and businesses with DSBSD service disabled veteran owned status when they also hold a DSBSD certification as a small business on the proposal due date. Currently, DSBSD offers small business certification and micro business designation to firms that qualify.

Certification applications are available through DSBSD online at www.SBSD.virginia.gov (Customer Service).

Offeror Name: BMS CAT of Maryland LLC

Preparer Name: Hal W. Hocking **Date:** 10-30-23

Who will be doing the work: **I plan to use subcontractors** **I plan to complete all work**

Instructions

- A. If you are certified by the DSBSD as a micro/small business, complete Section A of this form.
- B. If the "I plan to use subcontractors" box is checked, complete Section B of this form. For the proposal to be considered and the offeror to be declared responsive, the offeror shall identify the portions of the contract that will be subcontracted to any subcontractor, to include DSBSD certified small business for the initial contract period in relation to the offeror's total price for the initial contract period in Section B.

Section A

If your firm is certified by the DSBSD provide your certification number and the date of certification.

Certification Number: _____ Certification Date: _____

Section B

If the "I plan to use subcontractors" box is checked, populate the requested information below, per subcontractor to show your firm's plans for utilization of any subcontractor, to include DSBSD-certified small businesses, in the performance of this contract for the initial contract period in relation to the offeror's total price for the initial contract period. Certified small businesses include but are not limited to DSBSD-certified women-owned and minority-owned businesses and businesses with DSBSD service disabled veteran-owned status that have also received the DSBSD small business certification. Include plans to utilize small businesses as part of joint ventures, partnerships, subcontractors, suppliers, etc. It is important to note that these proposed participation will be incorporated into the subsequent contract and will be a requirement of the contract. Failure to obtain the proposed participation dollar value or percentages may result in breach of the contract.

Plans for Utilization of Any subcontractor, to include DSBSD-Certified Small Businesses, for this Procurement

Subcontract #1

Company Name: And Construction & Cleaning SBSBD Cert #: 072562006
 Contact Name: Jose Andrade SBSBD Certification: MBE
 Contact Phone: 240-507-2025 Contact Email: info@andradeconstruction.com
 Value % or \$ (Initial Term): TBD Contact Address: 7418 Longbranch Drive New Carrollton, MD 20784
 Description of Work: Labor (As needed)

Subcontract #2

Company Name: _____ SBSBD Cert #: _____
 Contact Name: _____ SBSBD Certification: _____
 Contact Phone: _____ Contact Email: _____
 Value % or \$ (Initial Term): _____ Contact Address: _____
 Description of Work: _____

Subcontract #3

Company Name: _____ SBSB Cert #: _____
Contact Name: _____ SBSB Certification: _____
Contact Phone: _____ Contact Email: _____
Value % or \$ (Initial Term): _____ Contact Address: _____
Description of Work: _____

Subcontract #4

Company Name: _____ SBSB Cert #: _____
Contact Name: _____ SBSB Certification: _____
Contact Phone: _____ Contact Email: _____
Value % or \$ (Initial Term): _____ Contact Address: _____
Description of Work: _____

Subcontract #5

Company Name: _____ SBSB Cert #: _____
Contact Name: _____ SBSB Certification: _____
Contact Phone: _____ Contact Email: _____
Value % or \$ (Initial Term): _____ Contact Address: _____
Description of Work: _____