NIST National Institute of Standards and Technology • U.S. Department of Commerce

# CHEMICAL WASTE ACCUMULATION AND DISPOSAL AT NIST-BOULDER

NIST S 7301.07
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## 1. PURPOSE

The purpose of this suborder is to establish the requirements and responsibilities regarding the accumulation and disposal of chemical waste at the NIST-Boulder site and the NIST WWV/WWVB broadcast facility to ensure compliance with applicable federal and state regulations.[2]

## 2. BACKGROUND

a. The Department of Commerce (DoC) Boulder Laboratories is comprised of NIST, the National Oceanic and Atmospheric Administration (NOAA), the National Telecommunications and Information Agency (NTIA), and the General Services Administration (GSA). Under a cross-service agreement, NIST provides chemical waste (*e.g.*, hazardous waste, nonhazardous waste, universal waste, and used oil) collection and disposal services to these agencies.

(1) The Colorado Department of Public Health and Environment (CDPHE) has issued the DoC Boulder Laboratories a unique hazardous waste generator identification number, Environmental Protection Agency Identification Number (EPA ID), CO9131505175, which authorizes the DoC Boulder Labs to generate and accumulate hazardous waste as small quantity generator (SQG) in compliance with the regulations referenced in Section 4 below.

(2) The NIST radio broadcast station, WWV/WWVB, near Fort Collins, CO, is permitted as a very small quantity generator (VSQG) with EPA ID, COR000220723.

[1] For revision history, see Appendix A.
[2] Due to differing regulatory requirements for the NIST-Gaithersburg site, a parallel suborder (NIST S 7301.06) has been prepared to define the chemical waste accumulation/disposal requirements for the Gaithersburg site.

## 3. APPLICABILITY

a. This suborder applies to all activities at the NIST-Boulder and NIST WWV/WWVB facilities that generate chemical wastes.

> **Note:** Under the cross-service agreement, personnel employed by or contracted by covered agencies are required to comply with applicable state and federal regulations and the terms of the cross services agreement.

b. This suborder does not apply to NIST employees or associates performing work on the University of Colorado campus.

c. This suborder does not apply to the NIST WWVH facility located on the Pacific Missile Range Facility, Barking Sands on Kaui, Hawaii.

## 4. REFERENCES

a. 40 CFR 260-279, *Hazardous Waste Management System*

b. 40 CFR 700-766, *Toxic Substances Control Act*

c. 6 CCR 1007-2, *Solid Waste Regulations*

d. 6 CCR 1007-3, Parts 260-273 and 279, *Hazardous Waste Regulations*

e. BRC 11-3, *Industrial and Prohibited Discharges*

f. COR042002, *Municipal Separate Storm Sewer System (MS4) Permit*

g. 2017-2, *Industrial Discharge Permit*

h. "The Risk Management Process for Federal Facilities: An Interagency Security Committee Standard, Appendix B: Countermeasures, 2019

## 5. APPLICABLE NIST OCCUPATIONAL SAFETY AND HEALTH SUBORDERS

a. NIST S 7101.20: *Work and Worker Authorization Based on Hazard Reviews*

b. NIST S 7101.21: *Personal Protective Equipment*

c. NIST S 7101.23: *Safety Education and Training*

d. NIST S 7101.50: *Biosafety*

e. NIST S 7101-51: *Bloodborne Pathogens*

f. NIST S 7101.54: *Dispersible Engineered Nanoparticles*

g. NIST S 7101.60: *Chemical Management*

h. NIST S 7201.02 *Radioactive Materials at NIST Boulder*

i. NIST S 7301.01: *Environmental Management System*

j. NIST S 7301.03: *Air Emissions Management at NIST-Boulder*

k. NIST S 7301.09: *Oil Storage and Handling at NIST-Boulder*

l. NIST S 7301.11: *Stormwater Management at NIST-Boulder*

m. NIST S 7301.13: *Wastewater Management at NIST-Boulder*

## 6. REQUIREMENTS

a. General

(1) NIST shall maintain full and consistent compliance with all regulatory requirements (described in this suborder) regarding the generation, accumulation, and disposal of chemical wastes;

(2) No chemical waste shall be released to sanitary sewer drains or storm water drains without review and approval by the NIST Boulder Safety, Health, and Environment Division (BSHED). Contact BSHED at x5375, option 3 with any questions;

(3) No chemical waste shall be disposed by evaporation. This requirement does not apply to evaporation occurring during the use of the chemical or negligible losses due to evaporation during transfer between containers;

(4) NIST shall maintain the proper controls, equipment, and employee training to prevent or mitigate chemical waste incidents;

(5) NIST shall routinely assess chemical use to identify opportunities to minimize hazardous waste production through reuse, recycling, inventory control, and, as feasible, substitution of non-hazardous alternative chemicals. For laboratory employees and associates, this shall initially be accomplished in the hazard review process (NIST S 7101.20: *Work and Worker Authorization Based on Hazard Reviews*);

(6) During the planning stage of abatement, construction or renovation projects, project managers must ensure that the types of waste that will be generated are identified and handling/disposal is included in the contract; and

(7) Disposal requirements shall be identified prior to bringing new chemicals used for the operations and maintenance of facilities and utilities on site.

b. Chemical Waste Determinations

(1) At the point of generation, all chemical waste produced shall be properly identified by the classification under which it is regulated (See Section 6.d.(5)(e):

(a) Hazardous Waste, which includes dispersible engineered nanomaterials (DENM) that are managed as hazardous waste;

i. Waste materials regulated as hazardous waste under 6 CCR 1007-3 Part 261, unless excluded as scrap metal under 261.4(a)(14);

ii. Waste materials regulated under the Toxic Substances Control Act (TSCA, 40 CFR 700-766), including polychlorinated biphenyls (PCBs) and asbestos-containing material; and/or

iii. Waste materials containing dispersible engineered nanomaterials (DENM).

(b) Universal Waste;

i. Waste materials regulated as universal waste under 6 CCR 1007-3, Part 273, including:

(i) Aerosol Cans;

(ii) Batteries;

(iii) Light bulbs; and

(iv) Mercury-containing devices.

(c) Nonhazardous Waste, including but not limited to:

i. Waste materials excluded under 6 CCR 1007-3, 261(b), not regulated under Parts 261, 273 or 279 or materials identified in 6 CCR 1007-2, including:

(i) Paints;
**Note:** Dehydrated or dried latex or acrylic paint may be disposed in the trash.

(ii) Glycol; and

(iii) Liquid detergents.

(d) Used Oil, Waste materials regulated under 6 CCR 1007-3, Part 279, including but not limited to:

i. Hydraulic oils;

ii. Pump oils;

iii. Lubricating oils; and

iv. Petroleum-based greases.

(e) Materials regulated under the Toxic Substances Control Act:

i. Waste containing polychlorinated biphenyls, as defined under 40 CFR 761.3; and

ii. Asbestos-containing waste from decontaminating equipment, but not from abatement work.[3]

(f) Radiological Waste:

i. Material covered under NIST S 7201.02 Radioactive Materials at NIST Boulder

[3] Large-scale abatement is addressed in NIST Office of Facilities and Property Management (OFPM) programs.

(g) Scrap Metal:

i. Unwanted metals managed for recycling;

ii. Metals regulated as a hazardous waste if not managed for recycling, including chromium, lead and silver;

iii. OFPM manages aluminum, copper and steel for recycling; and

iv. Does not include metal compounds.

(h) Sharps:

i. Materials that may penetrate skin, commonly having a sharp edge or point;

ii. Classified based on material with which the sharp is contaminated:

(i) Municipal solid waste if uncontaminated;

(ii) Biohazardous waste; or

(iii) Hazardous waste.

(i) Biohazardous Waste:

i. Materials identified in NIST S 7101.50 *Biosafety*

(j) Municipal Solid Waste:

i. Waste not containing any wastes listed in 6.b.(1)(a)-(i)

(2) The regulatory status of the waste shall be identified during the hazard review process;

(3) OSHE/BSHED shall provide assistance with completing waste determinations if requested; and

(4) Documentation of waste determinations shall be kept by the person generating the waste and made available during regulatory inspections;

(a) BSHED maintains a database of waste determinations and will provide documentation if requested to assist with the waste determination.

c. Satellite Accumulation

(1) All NIST work areas that accumulate hazardous wastes shall establish Satellite Accumulation Areas (SAA; see Section 7, **Definitions**);[4]

(a) An inventory of SAAs shall be maintained by BSHED.

(2) Chemical waste generated in a work area (*e.g.*, laboratory) shall remain in that work area and be accumulated in an SAA (if regulated as hazardous waste) until picked-up for disposal in compliance with 6 CCR 1007-3, 262.34(g);

(a) Exceptions shall be allowed for SAAs in the clean room tool move-in room and chases in Building 81 with approval by BSHED.

(3) All SAAs shall meet the following requirements:

(a) The location of the SAA shall be identified by signage in the work area (available free from BSHED);

(b) The SAA shall be located within the work area, with the exceptions provided in Section 6.c(2)(a), to facilitate the safe storage of the chemical wastes (*e.g.*, flammable wastes may need to be stored in a flammable cabinet; volatile wastes may need to be stored in a ventilated cabinet). Storage of hazardous waste shall meet the following requirements of the Interagency Security Committee (ISC) document *The Risk Management Process for Federal Facilities: An Interagency Security Committee Standard, Appendix B: Countermeasures 2019*:

i. Waste shall be stored in secured areas with adequate fire protection away from loading docks, entrances and uncontrolled parking;

ii. SAAs shall be located to minimize the risk of tampering or theft;

iii. Waste shall be handled in compliance with applicable Homeland Security and hazardous materials regulations;

[4] "Routine" generation of chemical waste is the consistent production of chemical waste regulated as hazardous waste such that it will need to be turned in for disposal at least once per year.

iv. Waste must be accumulated in manner that minimizes risk to life, health, safety and property; and

v. Emergency contact information for the work area and SAA shall be posted in an accessible location. A template for emergency contact information is provided in Appendix D.

(c) Secondary containment shall be provided for waste containers stored at an SAA to control leaks or spills;

i. The capacity of the secondary containment shall be sufficient to contain the quantity of the largest single container stored in the containment.

(d) Incompatible chemical wastes[5] shall be kept segregated as specified below; and

i. In separate containers;

ii. In separate secondary containment bins; and

iii. When possible, in separate chemical cabinets.

(e) An SAA owner shall be designated for each SAA.

i. The SAA owner shall be the individual responsible for the process generating chemical waste in the work area in which the SAA is located.

(4) The quantity of waste in any SAA shall be limited to:

(a) 55 gallons of hazardous waste; or

(b) 1 quart (liquid) or 1 kg (solid) of acute hazardous waste. See Section 7, Definitions

(5) Spill control materials compatible with the waste in the SAA shall be kept on hand in quantities adequate to clean up a spill from the largest waste container;

(6) Adequate aisle space shall be maintained around the SAA. Fire code requires a minimum aisle width of 28 inches;

[5] Chemical compatibility references are included in NIST S 7101.60: *Chemical Management*.

(7) Satellite accumulation areas shall be inspected by the SAA owner or a person supervised by the SAA owner on a weekly basis;

(8) SAA owners shall maintain inspection checklists for the previous three months or the period of time elapsed since the most recent BSHED inspection whichever is less; and

(9) The accumulation start date shall be added when a container is 90% full.

d. Chemical Waste Containers

(1) Chemical wastes shall be placed in containers made of materials compatible with the wastes;

(2) Chemical waste containers shall be in good condition and have screw-on caps;

(3) Chemical waste containers typically must be sealed with a cap when not actively being filled;

(a) If chemical wastes are reacting in a manner that will cause a sealed container to over pressurize:

i. The waste container shall be left open and in a fume hood until the reaction is complete; or

ii. A pressure relief cap shall be used.

(4) Chemical waste containers shall not be over-filled;

(a) Free space (head space or ullage) of 10 percent shall be left when filling waste containers.

(5) Waste shall be labeled with the information listed below:

(a) A list of the constituents of the waste;

(b) An estimate of the percent volume of each constituent;

(c) A description of the hazards associated with the waste using labels compliant with the Globally Harmonized System of Classification and Labelling of Chemicals.

i. Labels are provided by OSHE/BSHED

(d) The accumulation start date at the time the waste is generated unless the container is placed in a satellite accumulation area; and

(e) The regulatory classification of the waste. See 6.b.(1) for regulatory classifications/definitions of waste.

i. Hazardous waste.

ii. Universal waste.

iii. Non-hazardous waste.

iv. Used oil.

v. Materials regulated under the Toxic Substances Control Act:

(i) Labeled as hazardous waste

vi. Radiological Waste:

(i) Contact the radiation safety officer for labels and assistance with handling or disposing radioactive waste.

vii. Scrap Metal:

(i) Metals regulated as a hazardous waste if not managed for recycling, including chromium, lead and silver. OFPM manages aluminum, copper and steel for recycling, not including metal compounds; and

(ii) A nonhazardous waste label or any other label identifying the material as scrap metal and the specific metal may be used.

viii. Sharps:

(i) Uncontaminated sharps may be disposed as municipal solid waste if properly contained in a rigid container labeled as “sharps”; or

(ii) Contaminated sharps must be managed and labeled as the type of waste contaminating the sharps, typically biohazardous or hazardous.

ix. Biohazardous Waste:

(i) Affix a biohazardous waste label

x. Municipal Solid Waste:

(i) No labeling required.

(6) Reusable containers (*e.g.*, safety cans) may be used to store chemical waste if used to contain compatible wastes.

(a) The owner of a reusable container shall clearly indicate on the container the location to which it shall be returned.

**Note: In some instances, it may not be feasible to return a container due to the nature of the contents.**

e. Empty Chemical Containers[6]

(1) Empty chemical containers shall be handled by the following options:

(a) Containers that previously contained acute hazardous (P-list) waste (6 CCR 1007-3, 261.33) shall be turned in as chemical waste or reused only to contain the original chemical;

(b) Empty chemical containers, other than those that previously contained an acute hazardous waste, may be disposed to municipal solid waste (trash) if the following conditions are met:

i. All contents that may be removed by "typical" methods such as pouring, pumping, aspirating, draining or pipetting are removed;

ii. The label is removed or obscured; and

iii. The container is clearly marked as "empty".

[6] A chemical container is considered empty when no chemical can be removed from the container by normal physical means (e.g. pouring, aspirating, or draining).

(c) Empty containers may be turned in as chemical waste under the conditions listed below:

i. The caps shall be left on the empty containers.

ii. "Empty" shall be written across the container labels using a heavy black marker.

(d) Empty chemical containers may be reused to collect chemical wastes that are compatible with the original contents of the container and the container material; and

i. The containers shall be labeled with the appropriate waste label per Section 6.d.

(e) Empty containers that held non-hazardous materials such as commercial cleaners, polishes, *etc.*, may be disposed with regular trash.

f. Used Personal Protective Equipment (PPE)

(1) Personal protective equipment may be required to be managed as hazardous waste if contaminated with certain hazardous wastes. Under the following conditions, used PPE shall be managed as hazardous waste:

(a) Contaminated with acute hazardous waste as defined under 6 CCR 1007-3, 261.33;

(b) Immersed in or in extended contact with a material regulated as a hazardous waste under 6 CCR 1007-3, Part 261, except solvents regulated as D001 and/or F003 waste if solvents evaporate during use;

(c) Used with material containing DENM; or

(d) Visibly stained with chemicals.

g. Biohazardous Waste

(1) Biohazardous waste is defined in NIST S 7101.50 as:

(a) Waste that includes, but is not limited to, discarded microbiological cultures, stocks and all associated materials, discarded human specimens and all associated materials,

discarded tissue cultures and stocks, discarded live and attenuated vaccines, discarded molecular waste, and contaminated sharps.

(2) Biohazardous waste disposal is also managed through the chemical waste pick request system. For specific information on the requirements for biohazardous waste see NIST S 7101.50.

h. Chemical Waste Storage in and Removal from SAA

(1) Chemical waste pick-up requests shall be submitted via:

(a) The NIST Chemical/Regulated Waste Pickup Request System.

(2) Pick-up requests shall include:

(a) The name of the chemical waste owner;

(b) The location of the chemical waste;

(c) A description of the chemical waste and any significant hazards associated with the waste or container;

(d) The number of containers and total quantity of waste being disposed; and

(e) Entry procedures, if any, required for OSHE to enter the workspace and pick-up the waste.

(3) Chemical waste owners shall schedule waste pick-ups as needed to minimize the risks of accumulating chemical wastes for extended periods of time;[7]

(4) In general, chemical waste should not remain in storage at an SAA for more than one year;

(5) If chemical waste needs to be removed immediately, OSHE shall be contacted at x5375, option 3;

(6) An SAA does not need to be established for the pick-up of non-routine wastes; and

[7] The hazards of a chemical or chemical waste determine the safe storage time, e.g., some peroxide forming chemicals may require disposal after only 3 months of storage.

(7) If an unlabeled container with unknown contents is found, OSHE shall be contacted directly (x5375, option 3) to assist with identifying and disposing of the container.

i. Inspections by Regulatory Agencies

For an announced or unannounced inspection by the Colorado Department of Public Health and Environment (CDPHE) or EPA:

(1) The Chief of BSHED shall be notified whenever CDPHE and/or EPA inspectors request access to NIST facilities;

(a) A BSHED representative shall be assigned to coordinate the inspection process.

(2) The BSHED representative shall:

(a) Notify the affected OU managers of the inspection when permitted by CDPHE and/or EPA;

(b) Accompany the CDPHE and/or EPA inspector(s) while on-site; and

(c) Document the observations of the CDPHE and/or EPA inspectors, including photographing areas photographed by CDPHE and/or EPA.

(3) All NIST Boulder employees and associates shall cooperate fully during any such inspection;

(4) OUs, in coordination with the Boulder Laboratory Operations Director, and BSHED Chief, will abate any negative findings identified during the inspection in accordance with CDPHE and/or EPA instructions and the requirements of this suborder;

(5) The Boulder Laboratory Operations Director and BSHED Chief, in coordination with affected OUs, shall take the lead on all inspection-related correspondence with CDPHE and/or EPA; and

(6) Any fines resulting from a violation identified during an inspection will be paid by the offending OU.

j. Training

(1) All NIST Boulder employees and associates, including those at NIST WWV/WWVB, who generate or handle hazardous or universal waste shall complete the course titled *NIST S 7301.07: Hazardous Waste Generator Training for NIST Boulder*.

(a) Retraining shall be required when the Official First-Level Supervisor identifies inadequacies in the individual's knowledge related to the content found in the training course listed in Section 6.j(1).

(2) NIST Boulder line management and division safety representatives who have staff who generate or handle hazardous or universal waste should complete the suborder training for this program.

k. Recordkeeping

(1) Checklists documenting weekly inspections of SAAs by the SAA owner shall be kept by the owner of the SAA for whichever is less:

(a) Three months; or

(b) The period of time elapsed since the SAA was most recently inspected by BSHED.

(2) Hazardous waste manifests shall be retained by OSHE for at least twenty years from the date on which a representative of the treatment, storage and disposal facility (TSDF) signed the manifest;[8]

(3) The following records will be maintained by OSHE for at least five years after inspection:

(a) Inspection Reports issued by CDPHE or EPA;

(b) Notices of findings issued by CDPHE or EPA;

(c) Corrective action plans, when required;

(d) Description of corrective action taken, when required; and

[8] NIST took over hazardous waste management from NOAA in 2000 so records currently date back to the time at which NIST assumed responsibility for hazardous waste management.

(e) Date corrective action was completed.

(4) Records described above will be made available to regulators upon request.

l. Emergency Response

(1) Any NIST employee or covered associate who discovers an emergency situation (e.g., significant spill or release, over-pressurized container) associated with chemicals or chemical waste shall immediately report it to:

(a) Supervisor; and

(b) OSHE at x5375, option 3; or

(c) NIST Police at x7777 (outside of normal business hours).

m. Summary Reports

(1) The manager of this program shall report significant findings of noncompliance to the BSHED Chief, for elevation to the Chief Safety Officer (CSO) and Executive Safety Committee (ESC), as needed. Instances of significant noncompliance include open waste containers, lack of documentation of inspections, unlabeled waste and waste accumulating outside of SAAs. Reports shall include:

(a) Specific instances of noncompliance with applicable regulations or NIST policy;

(b) Required corrective actions; and

(c) Follow up reports if corrective actions have not been implemented;

(2) The manager of this program shall compile, analyze, and report inspection data periodically at the direction of the CSO.

## 7. DEFINITIONS

Definitions common to all NIST Environmental Management or Compliance suborders can be found in Section 6 of NIST O 7301-00. The definitions specific to this suborder are as follows:

a. Acute Hazardous Waste – Category of hazardous wastes identified under 6 CCR 1007-3, Part 261.33.

b. Biohazardous Waste – Waste that includes, but is not limited to, discarded microbiological cultures, stocks and all associated materials, discarded human specimens and all associated materials, discarded tissue cultures and stocks, discarded live and attenuated vaccines, discarded molecular waste, and contaminated sharps.

c. Chemical Waste – A general term used for both hazardous (*e.g.*, acids, solvents) and non-hazardous (*e.g.*, oils, coolants) wastes.

d. Designated Facility – A permitted hazardous waste treatment, storage and disposal facility identified on a hazardous waste manifest as the recipient of the hazardous waste listed on the manifest.

e. Dispersible Engineered Nanomaterial – Intentionally-produced materials with one or more dimensions between approximately 1 nanometer (nm) and 100 nm that can be dispersed into (or onto) liquid or solid compounds or aerosolized (suspended in a gas). Also referred to as *nanomaterial*.

f. Empty Container – A container from which the contents have been removed so that no more material may be removed by methods including aspirating, draining, pipetting, pumping and pouring.

g. EPA Identification Number – The number assigned to each hazardous waste generator, hazardous waste transporter and hazardous waste treatment, storage or disposal facility (TSDF).

h. Episodic Large Quantity Generator – A hazardous waste generator generating more than 1000 kg of hazardous waste or more than 1 kg of acute hazardous waste in four or fewer calendar months out of a calendar year.

i. Hazardous Waste – A waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Strict regulatory criteria that define a hazardous waste are included in 40 CFR 261 or listed under 6 CCR 1007-3, Part 261.

j. Hazardous Waste Generator – Any entity that produces a waste identified or listed under 6 CCR 1007-3, Part 261. The DoC Boulder Labs and NIST WWV/WWVB are identified as generators for the purposes of this suborder.

k. Large Quantity Generator – A hazardous waste generator of more than 1000kg of hazardous waste or more than 1 kg of acute hazardous waste in any calendar month.

l. Nanomaterial – A material with any external dimensions in the nanoscale or having internal structure or surface structure in the nanoscale (approximately 1 nm to 100nm).

m. Nonhazardous Waste – Wastes not listed or having the characteristics of hazardous waste as defined under 6 CCR 1007-3, Part 261.

n. Recycler – Facility that engages in the recovery of materials from universal waste or scrap metal.

o. Satellite Accumulation Area – An area designated for the accumulation of hazardous waste that is located at, or near, the point of the waste generation, and is under the control of an individual responsible for the waste.

p. Satellite Accumulation Area Owner – The OU-assigned individual responsible for maintaining a Satellite Accumulation Area (SAA). The SAA owner shall be an individual responsible for the process that generates chemical waste in the work area in which the SAA is located

q. Sharp – An object that can penetrate the skin. A sharp is often a tool, device, or material that typically has a sharp edge or point such as a needle, scalpel, blade, razor, broken glass, broken capillary tube, or an exposed end of a wire.

r. Small Quantity Generator – A hazardous waste generator generating less than 1000 kg of hazardous waste and less than 1 kg of acute hazardous waste in any calendar month.

s. Transporter – Person engaged in the offsite transportation of hazardous waste by air, rail, highway or water.

t. Treatment, Storage and Disposal Facility (TSDF) – A location at which hazardous waste is subjected to treatment, storage, or disposal. See *designated facility* for more information on regulatory requirements.

u. TSCA-Regulated Waste – Waste composed of materials regulated under the Toxic Substances Control Act (TSCA).

v. Universal Waste – Hazardous wastes managed under the universal waste requirements of 6 CCR 1007-3, Part 273, including:

(1) Batteries;

(2) Pesticides;

(3) Mercury-containing devices;

(4) Aerosol cans;

(5) Lamps (light bulbs); and

(6) Electronic devices.

w. Universal Waste Handler – For the purposes of this suborder, a generator of universal waste.

x. Used Oil – Engine, hydraulic, lubricating or pump oils that are no longer wanted or have been rendered unusable following use for the purposes listed above.

y. Very Small Quantity Generator – A hazardous waste generator generating less than 100 kg of hazardous waste and less than 1 kg of acute hazardous waste in any calendar month, formerly identified as a conditionally-exempt small quantity generator;

z. WWV/WWVB – NIST broadcast facility near Fort Collins, Colorado

**8. ACRONYMS**

Acronyms common to all NIST Environmental suborders can be found in Section 7 of NIST O 7301-00. The acronyms specific to this suborder are as follows:

a. BRC – Boulder Revised Code

b. BSHED – Boulder Safety, Health, and Environment Division

c. CCR – Code of Colorado Regulations

d. CDPHE – Colorado Department of Public Health and Environment

e. CFR – Code of Federal Regulations

f. CSO – Chief Safety Officer

g. DENM – Dispersible Engineered Nanomaterial

h. DoC – United States Department of Commerce

i. EPA – United States Environmental Protection Agency

j. ESC – Executive Safety Committee

k. GSA – General Services Administration

l. kg – kilogram

m. LQG – Large Quantity Generator

n. nm – nanometer

o. NIST – National Institute of Standards and Technology

p. NOAA – National Oceanic and Atmospheric Administration

q. NTIA – National Telecommunications and Information Agency

r. OFPM – NIST Office of Facilities and Property Management

s. OSHE – Office of Safety, Health, and Environment

t. OU – Organizational Unit

u. PCB – Polychlorinated Biphenyl

v. RCRA – Resource Conservation and Recovery Act

w. SAA – Satellite Accumulation Area

x. SQG – Small Quantity Generator

y. TSCA – Toxic Substances Control Act

z. TSDF – Treatment, Storage or Disposal Facility

aa. VSQG – Very Small Quantity Generator, previously identified as Conditionally-Exempt Small Quantity Generator

## 9. RESPONSIBILITIES

Roles and responsibilities common to all NIST OSH suborders can be found in Section 8 of NIST O 7301-00. The roles and responsibilities specific to this suborder are as follows:

a. Chief Safety Officer is responsible for:

As NIST's designated Environmental Manager, the CSO is responsible for overseeing NIST's efforts in complying with the requirements identified in this suborder.

b. OU Directors are responsible for:

(1) Establishing implementing policies and procedures, as needed, for the requirements of this suborder to be met;

(2) Ensuring subordinate managers have the authority, resources, and training needed to implement OU-established policies and procedures; and

(3) Using OU funds to pay any civil penalties identified in regulatory inspections and resulting from regulatory violations in their respective OUs.

c. Division Chiefs and Group Leaders are responsible for:

(1) Implementing this suborder as it applies to activities involving their employees and associates and space in accordance with any applicable OU-established policies and procedures;

(2) Ensure that hazardous, universal, TSCA, used oil and other waste covered under this suborder are generated are handled in compliance with 6 CCR 1007-3 via compliance with this suborder;

(3) Ensure that all SAAs owned by the division or group are inspected on a weekly basis;

(4) Ensure that regulatory inspectors are provided access to areas under their supervision;

(5) Upon receiving inspection reports on their respective workplaces, ensure that corrective actions are performed;

(6) Make available to inspectors all relevant information which pertains to the generation and management of hazardous waste in the workplace to be inspected; and

(7) Ensure that deficiencies or violations resulting from regulatory inspections of areas operated by that OU are addressed in the timeframe required by the regulatory agency.

d. Satellite Accumulation Area Owners are responsible for:

(1) Ensuring that all individuals that use the SAA are properly trained;

(2) Ensuring that SAAs owned by that SAA owner are inspected on a weekly basis;

(3) Take corrective actions to address inspection findings;

(4) Ensure that requests for waste pickup are submitted when containers are full; and

(5) Directing any questions regarding the hazards of a waste or proper handling of a chemical waste during the generation and accumulation to OSHE.

e. Employees and Associates Handling or Generating Hazardous Waste are responsible for:

(1) Completing the training required by this program and their OUs/divisions and working in accordance with that training;

(2) Ensure that hazardous, universal, TSCA-regulated wastes and used oil generated are handled in compliance with their training, this suborder and 6 CCR 1007-3;

(3) Knowing the hazards of the chemical waste in their work area;

(4) Request assistance from OSHE with waste determinations, handling procedures, satellite accumulation area management;

(5) Request disposal of waste when containers in a SAA are 90% full or when a container is declared to be waste if not in a SAA;

(6) Notify their supervisor and the appropriate SAA Owner of any conditions which are unsafe or not in compliance with 6 CCR 1007-3;

(7) Report releases of chemicals in accordance with NIST Boulder Accidental Hazardous Material Release Reporting Procedure;

(8) Cooperate fully during the conduct of SAA and regulatory inspections; and

(8) Correct deficiencies identified in SAA or regulatory inspections.

f. Emergency Coordinator is responsible for:

(1) Ensure that Occupant Emergency Plan is followed during any emergency response;

(2) Inform the DoC Boulder Labs Boulder Board of Directors of the emergency and the nature of the response; and

(3) Review reports of releases submitted to regulatory agencies.

g. NIST Chief Facilities Management Officer (CFMO)

(1) Ensure that excess property and OFPM-owned equipment containing universal waste is managed in a manner that complies with this suborder, including:

(a) Electronic equipment handled as excess property is handled to prevent releases to the environment or other hazards and transferred to the General Services Administration;

(b) Fluorescent light tubes used in overhead fixtures (4', 6' and 8' tubes) are managed for return to the vendor;

(c) Batteries are removed from excess equipment and managed as universal waste; and

(d) Collection of batteries removed from excess property or OFPM-owned equipment is requested using the Chemical Waste Pickup Request System.

g. BSHED Chemical Waste Accumulation and Disposal Program Manager is responsible for:

(1) Serve as the contracting officer representative for the contract providing hazardous waste management, accumulation and disposal services;

(2) Provide support to DoC Boulder Laboratories employees and associates, including:

(a) Waste determinations;

(b) Providing waste labels;

(c) Providing templates for SAA signage and related materials;

(d) Guidance related to the handling of hazardous wastes;

(e) Assisting DoC Boulder Laboratories employees and associates with locating waste containers suitable for containing the waste that has been generated;

(f) Bringing issues with the web-based pickup request system to the attention of the OSHE Web Development Team;

(g) Providing printed waste pickup requests to contractor employees and associates; and

(h) Ensuring that BSHED has adequate waste containers and spill control materials on hand.

(3) Develop and maintain SAA signage, emergency contact list templates and inspection checklists. Templates are provided in Appendices B through E;

(4) Perform periodic inspections of SAAs to verify compliance with applicable regulations;

(5) Track inspection results;

(6) Report inspection findings to the BSHED Chief;

(7) Compile, analyze, and report inspection data periodically at the direction of the CSO; and

(8) Accompany regulatory agency representatives during inspections.

## 10. AUTHORITIES

Authorities common to all NIST OSH suborders can be found in Section 9 of NIST O 7301-00. The authorities specific to this suborder are as follows:

a. The BSHED Chemical Waste Accumulation and Disposal Program Manager is authorized to:

(1) Inspect SAAs during regular working hours and at other reasonable times, and within reasonable limits and in a reasonable manner;

(2) Consult with a reasonable number of employees during the SAA inspection;

(3) Question privately any worker, supervisor, or manager in charge of the workspace; and

(4) Deny the right of accompaniment to any person whose participation interferes with a fair and orderly inspection.

## 11. DIRECTIVE OWNER

Chief Safety Officer

## 12. APPENDICES

a. Revision History

b. SAA Owner Inspection Checklist

c. SAA Signage

d. Emergency Contact Sheet

e. BSHED SAA Inspection Checklist

962 **Appendix A. Revision History**

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| Revision | Approval Date | Effective Date | Description of Change |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 0 | 01/12/2021 | NA | None – Initial document |
| 1 | 02/06/2022 | 06/30/2023 | • Numerous locations – "Personnel" changed to "employees and associates".<br>• Section 5 – Added references for NIST S 7201.02 and NIST S 7301.03.<br>• Section 6.b(1)(a) through (j) – updated content for classifying chemical waste.<br>• Section 6.c(3)(b) – Added v. for requirement to post emergency contact information at SAA locations.<br>• Section 6.c(3)(e) – Added i. indicating the SAA owner is the person responsible for generating the waste.<br>• Section 6.c(4)(b) – Modified the limits from "1 liter" to "1 quart (liquid" or 1 kg (solid)".<br>• Section 6.c(6) – Added requirement for minimum distance around SAA.<br>• Section 6.d(5)(e) – Added that section 6.b(1) should be reviewed for classifications/definitions of waste.<br>• Section 6.h – Removed the option to email for waste pick-up.<br>• Section 6.j – Added requirement for line management and DSRs who have staff generating or handling waste should complete the suborder training.<br>• Section 6.l – Added requirement to contact supervisor in the event of spill or release.<br>• Section 7 – Added definitions for biohazardous waste and sharps.<br>• Section 9 – Added to responsibilities for SAA Owner (d), Employees and Associates (e), Emergency Coordinator (f), and NIST CFMO (g).<br>• NOTE: Effective date was originally TBD due to the COVID-19 pandemic. It was updated on 4/17/23. |

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966 **Appendix B. SAA Owner Inspection Checklist**

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SAA owner
inspection checklist.

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971 **Appendix C. SAA Signage**

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SAA Signage.pptx

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## Appendix D. Emergency Contact Sheet

Boulder Chemical
Release Emergency (

## Appendix E. BSHED SAA Inspection Checklist

BSHED SAA
Inspection Checklist