TAKE FIVE for Safety- Liquid Effluents; ASE Violation

Frank Craner

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Liquid Effluent Primer

- A Liquid Effluent is…“Any treated or untreated aqueous waste that is discharged to the environment (e.g., process wastewater, cooling tower blowdown, parts/equipment cleaning wastewater, air compressor condensate).”
- BNL (and Nassau/Suffolk Counties) obtain drinking water from groundwater sources (Sole Source Aquifer)
- BNL discharges wastewaters to recharge basins onsite.
- Effluents are subject to regulatory limits that protect water from contaminants.
- Uncontrolled effluents have the potential to contaminate groundwater.

C-AD Wastewater Sources/Contaminants of Concern

- Sources:
  - Cooling Towers
  - Cleaning Systems (912, 905 (future))
  - Miscellaneous (i.e., use of sinks, leaked or spilled materials, etc.)
  - Stormwater
- Contaminants of highest risk:
  - Metals,
  - Oil and Grease,
  - Radionuclides,
  - Water Treatment Chemicals.

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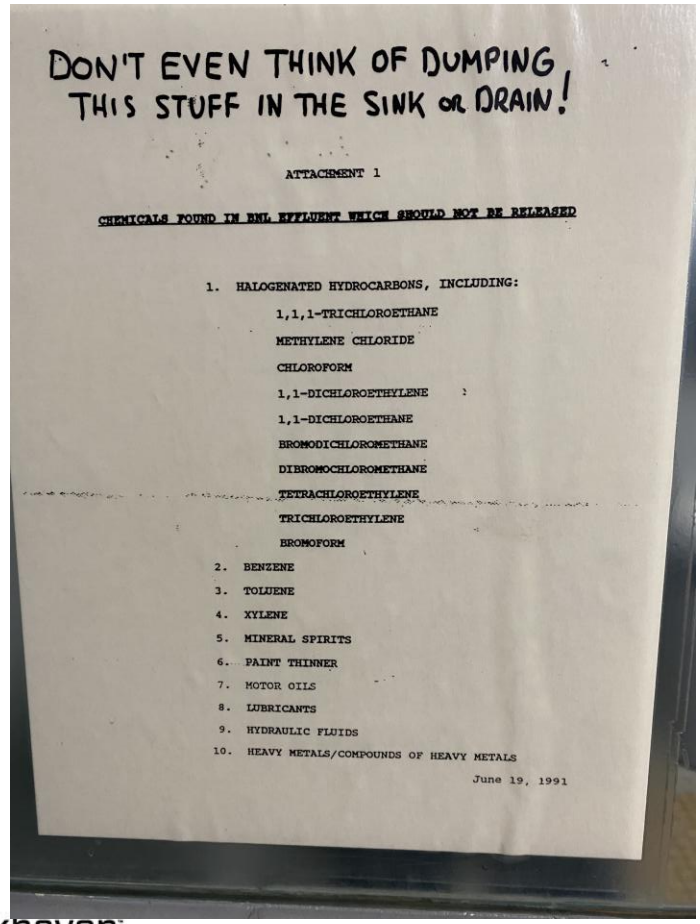
Key SBMS Subject Areas

Subject Area	Synopsis
Liquid Effluents	Requires characterization and approval of discharges
Storage and Transfer of Hazardous and Non-Hazardous Materials	Requires control of storage facilities to prevent spills and releases
Spill Response	Requires cleanup/reporting of spills
Waste	Requires characterization and proper accumulation of wastes
Cross Connection Control	Protects drinking water systems from contamination

Rules of Thumb:
Properly store all materials and waste; Cleanup/Report all spills; All discharges require characterization and approval; Contact Environmental Compliance Representative with any questions.

Can I use this material in a sink?



DON'T EVEN THINK OF DUMPING THIS STUFF IN THE SINK OR DRAIN!

ATTACHMENT 1

CHEMICALS FOUND IN BNL EFFLUENT WHICH SHOULD NOT BE RELEASED

1. HALOGENATED HYDROCARBONS, INCLUDING:
   - 1,1,1-TRICHLOROETHANE
   - METHYLENE CHLORIDE
   - CHLOROFORM
   - 1,1-DICHLOROETHYLENE
   - 1,1-DICHLOROETHANE
   - BROMODICHLOROMETHANE
   - DIBROMOCHLOROMETHANE
   - TETRACHLOROETHYLENE
   - TRICHLOROETHYLENE
   - BROMOFORM
2. BENZENE
3. TOLUENE
4. XYLENE
5. MINERAL SPIRITS
6. PAINT THINNER
7. MOTOR OILS
8. LUBRICANTS
9. HYDRAULIC FLUIDS
10. HEAVY METALS/COMPOUNDS OF HEAVY METALS

June 19, 1991

Note: This sink discharges to the Sewage Treatment Plant (STP),which discharges to groundwater, Long Island's sole source of drinking water.

Source: SBMS Liquid Effluents Subject Area

SINK RELEASABLE CHEMICAL LIST

Small quantities of dilute solutions containing these previously evaluated chemicals can be released to the sink with running water. A comprehensive list of evaluated chemicals is available in the Expanded Sink Releasable Chemical List via QR Code above.

The Environmental Protection Division must evaluate all other liquids before discharging to the STP. Contact your organization's Environmental Compliance Representative (ECR) for guidance.

ORGANIC CHEMICALS

- Acetates: Ca, K, Na & NH_4
- Acetic, boric, and oxalic acids
- Amino acids and their salts
- Citric acid and its salts: Ca, K, Mg, Na & NH_4
- Lactic acid and its salts: Ca, K, Mg, Na & NH_4
- Sugars and sugar alcohol (ethanol)

BIOLOGICAL BUFFERS

- HEPES
- MES
- Phosphate Buffered Saline (PBS)
- Saline Sodium Chloride (SSC)
- Tris EDTA (TE)
- Tris Acetic Acid EDTA (TAE)
- Tris Borate EDTA (TBE)

INORGANIC CHEMICALS

- Bicarbonates: Ca, K, Mg & Na
- Borates: Ca, K, Mg & Na
- Bromides: K & Na
- Carbonates: Ca, K, Mg & Na
- Chlorides: Ca, K, Mg, Na & NH_4
- Fluorides: Ca
- Hypochlorite: 10% solution (bleach)
- Iodides: K & Na
- Oxides: Al, Ca, Fe, Mg & Si
- Phosphates: Ca, K, Mg, Na & NH_4

All effluent releases must have a pH of between 6 and 9 to be discharged to the STP.

2.14/0d04e011.pdf (11/2023)

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Operation of Beam Without Valid Checklist

SCBNL: E-02262 **Date: 05 Jan 2025**

Description & Categorization Level:

On Monday, January 5, at 11:45 a.m., the NASA Space Radiation Laboratory (NSRL) operated the facility beamline for approximately ten minutes before it was identified that the operational readiness checklist had expired on December 31. This constituted a violation of the Accelerator Safety Envelope (ASE). Upon discovery, the beam was immediately shut down, and an extent-of-condition review is currently being conducted for all other operational readiness checklists within the facility.

Immediate/Containment Actions:

- Beam to NSRL stopped and Operations Lockout Applied
- New Checklist being prepared.
- USI Evaluation being prepared.

Point of Contact: Raymond Fliller

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ASE Violations in the last year at BNL

- EBIS Operating with an Expired Operational Readiness Checklist
- NSLS-II Declares Accelerator Safety Envelope Configuration Management Violation
- Operation of Beam without Valid Checklist

NSRL Check-Off List

(NSRL Runs 25AB and 25C, 1 January – 31 December 2025)

Version 1.0

- All three involve a checklist.
  - In the CAD cases they expired.
  - NSLS-II case the checklist said a lock to a PPS cabinet was locked when it was not.

- A checklist is more than a piece of paper!

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Importance of Checklists

- Checklists are an important part of performing work.
- They are a tool for experts and novices alike.
- They serve as reminders of tasks that need to be performed to ensure that the job is done correctly.
- They communicate to others what the tasks are and that they are complete.
- Performing work without a properly filled out checklist:
  - Tells others you may be operating without the necessary controls in place.
  - Shows inattention to detail – detail that is important to stakeholders
  - May develop into an unsafe situation if controls are not in place when they are required.
  - May lead to jobs not getting performed correctly.