A. Purpose
Columbia University utilizes silver recovery units in processing the wastewater effluent generated in the processing of films and use “scrap film” collection containers for capturing silver-containing solid waste. All dark rooms and image/photo processing installations using “wet chemistry” methods must be equipped with silver recovery equipment prior to use.

B. Applicability/scope
This policy is applicable to Columbia University departments who own and operate wet chemistry photo processing systems, either mechanically or manually driven. Additionally, this policy is applicable to EH&S staff and service vendor who manage quarterly service of silver recovery systems and disposal of scrap film from such activities.

C. Definitions
N/A

D. Responsibilities
1. Department
   a. Notifies EH&S in advance of installing any wet chemistry photo processing systems in dark rooms or other designated areas (“dark rooms”).
   b. Designates an “owner” who will be responsible for maintenance of the photo processing system.
   c. Maintains records ensuring the photo processing system is properly maintained as per equipment specifications.
   d. Ensures that a silver recovery system is made available to by EH&S prior to any use of photo processing systems.
   e. Ensures that required Dark Room Logs are completed every time a photo processing event takes place.
   f. Maintains dark room cleanliness and ensures scrap film is placed in container designated for collection of such.
   g. Provides quarterly access to darkrooms for EH&S and the service vendor.
   h. Informs EH&S if a silver recovery unit appears to be damaged.
   i. Informs EH&S if photo processing activities will cease in the darkroom in writing and will schedule for the removal of the silver recovery unit.

2. EH&S
   a. Provides silver recovery unit to Department through vendor.
   b. Arranges and manages installation of new silver recovery units through service vendor.
   c. Arranges and manages quarterly and emergency service to ensure all darkrooms have working silver recover system.
   d. Accompanies service vendor on quarterly and emergency service events.
   e. Maintains records ensuring quarterly service was performed.
   f. Maintains records ensuring dark rooms are properly maintained, including inspection of dark room logs for the prior quarter, housekeeping, and scrap film removal records.
   g. Removes scrap film from dark rooms on a quarterly basis and as needed.
   h. Responds to spills related to dark rooms.
   i. Arranges for removal of silver recovery systems when Department ceases photo processing activities.
3. Service Vendor
   a. Provides silver recovery systems in accordance with University contract.
   b. Provides quarterly service to Columbia University to ensure all installed silver recovery units are maintained and replaces units as necessary.
   c. Provides records of quarterly service to EH&S upon completion of service.
   d. Provides emergency service as requested by EH&S.

E. Procedures
   Quarterly Service
   The EH&S Hazardous Materials Specialist (HMS) will perform the following activities during Quarterly Service:
   1. Create a new service worksheet within the existing workbook for the upcoming service, using the service date as the name for that worksheet.
   2. Print the worksheet and record any pertinent information for updates during the routine service.
   3. Bring the service spreadsheet, blank copies of dark room logs, copies of the dark room procedures for the service visits.
   4. Ensure items pertaining to vendor service are maintained in the service worksheet.
   5. Ensure that the Dark Room Log is filled out by the users in each Dark Room location. If it has not been filled out within the last quarter, indicate such in the “Log Used” column. Leave a new log behind in the dark room.
   6. Ensure that scrap film kept in a labeled scrap film collection container provided by EH&S.
   7. Note whether scrap film is required to be removed on the service worksheet.
   8. Ensure that silver recovery units and the associated work areas maintained free of debris, sharps and gels.
   9. If the darkroom no longer process film, schedule with the vendor for the removal of the silver recovery unit and move that row of information to the “inactive” worksheet within the workbook.
   10. Update the service spreadsheet no later than three business days after onsite service. All locations that are not completing dark room logs must be notified in writing via email with a cc: to Hazardous Materials Manager and Sr. Environmental and Occupational Safety Specialist that they must complete the log every time film is chemically processed.

Collection and Storage of Scrap Film
   1. Scrap film must be removed from the Dark Room no later than 7 days from service. It must be labeled with a Non Hazardous Waste Label with the date of removal from the dark room.
   2. At MS, the scrap film must be brought to the Chandler Hazardous Waste storage room (labeled as above).
   3. At CUMC, the scrap film must be brought to the P&S UW Lamp Storage Room.

Shipping Scrap Film
   Upon completion of the scrap film pickups, the HMS will schedule the vendor for scrap film removal service. Scrap film must be shipped quarterly for recycling. Shipping papers must be stored as below.

Reporting/Recordkeeping
1. Service sheets from the onsite service, invoices and scrap film pickup receipt must be placed in the first section of the EH&S Greymart binder with the latest date appearing on the top.

2. If the weight of the silver collected is listed on the invoice no further information is necessary. If that information is missing on the invoice, this must be requested immediately upon receipt of the invoice.

EH&S Office Coordinator

1. The HMS leading the project must schedule Greymart no later than one month from the expected service month and is responsible for informing the Hazardous Materials Team of the scheduled service dates. Service is scheduled quarterly and is expected to be scheduled in the following months:
   a. October
   b. January
   c. April
   d. July

2. These months are chosen to coincide with the purchase order(s) for silver recovery, which expires each year on July 31.

3. The vendor must be escorted by a HMS throughout their service at each campus.

4. The HMS is responsible for ensuring access to all locations with silvery recovery equipment and ensures that the vendor checks each location during the quarterly service.

5. The HMS is responsible for receiving all invoices and processing within 2 business days of receiving. “Processing” shall mean that each invoice is compared to the service receipts given by the vendor at the end of the service visit. If the service receipts match the invoices, the HMS must initial, date, and indicate which campus service was performed for in ink on the original invoice. A copy of the signed invoice must be placed in the campus specific silver recovery binder and the original should be delivered to the EH&S Office Coordinator.

Environmental Safety Specialist

The Environmental Safety Specialist will prepare the letter for the purchase order for the vendor no later than June 1 from the vendor. This will include:

1. Soliciting annual letters indicating the itemized and total cost of service for each campus.

2. Assisting in the preparation of any technical paperwork required in submitting the purchase order

3. Acting as the primary liaison between the vendor and EH&S

Special Service Visits

On occasion, the vendor may be called in to install new silver recovery units or to service units that are not properly operating. In this case, the HMS will arrange for service with the vendor, provide access of the location(s) to be visited by the vendor, and provide updates to EH&S staff, if required to do so, in writing. These updates should include the expected date and time of the special service visit and a follow up communication indicating that the required service was performed must be sent. Finally, the campus specific service worksheet must be updated by the HMS to include any additions or changes.

F. Emergency contact

Morningside & Nevis EH&S: 212-854-8749
G. Medical Surveillance
N/A

H. Recordkeeping
Silver recovery units are installed at multiple locations at the Morningside Campus and Medical Center. Each darkroom known to perform chemical photo-processing on film has a silver recovery unit and a container for the collection of scrap film. The locations are stored in the following spreadsheets:
P:\Hazardous Materials\Silver Recovery\CUMC
P:\Hazardous Materials\Silver Recovery\MS

I. Appendices
N/A

J. Forms
N/A

K. References
NYC DEP Title 15, chapter 19, subchapter 07

L. Acknowledgements
N/A