Exhibit 1:
SAMPLE CHEMICAL HYGIENE PLAN
U.S. FISH AND WILDLIFE SERVICE

FORWARD

The U.S. Department of the Interior, U.S. Fish and Wildlife Service is committed to providing a safe working environment for all its employees. Employees have a right to know about health hazards associated with their work environment.

We developed the enclosed Chemical Hygiene Plan for _*insert facility name*__ so that employees can make knowledgeable decisions about any personal risks of employment.

This plan:

- Includes our policies, procedures, and responsibilities,
- Is designed to develop employee awareness of potentially hazardous chemicals in their work places, and
- Provides employees with relevant information about appropriate procedures for safe working conditions.

It is important that employees assume responsibility for their own laboratory safety. All employees will have access to pertinent safety information through their supervisory staff. The people who work in the laboratory environment are best able to detect potential hazards in either the facility or in work procedures. When safety and health concerns arise, please contact your immediate supervisor. If you need additional assistance, contact your Regional Safety Office.

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INTRODUCTION

The Chemical Hygiene Plan (CHP):

- Helps manage laboratory related hazards,
- Includes criteria we use to identify and control hazards, and
- Is an accident prevention tool.

To effectively manage our laboratories, we must comply with this CHP, 29 CFR 1910.1450 (also known as the Laboratory Standard), and 242 FW 8, Laboratory Safety.

PURPOSE: The CHP must:

- Describe procedures and policies to ensure that employees are protected from all potentially hazardous chemicals at their work areas, and

- Be easily accessible to employees, to employee representatives, and to the Assistant Secretary for Occupational Safety and Health (OSHA).

KEY ELEMENTS FOR DEVELOPMENT OF YOUR CHP

You (as a Project Leader/Facility Manager/Supervisor) must:

- ***Appoint a Chemical Hygiene Officer (CHO).*** The CHO is responsible for the implementation of the Chemical Hygiene Plan and its day-to-day administration.

- ***Develop a written Chemical Hygiene Plan (CHP).*** The CHP helps to protect employees from health hazards associated with hazardous chemicals in the laboratory and keep all potential hazardous chemical exposures below the OSHA Permissible Exposure Limits (PEL).

    - The CHP includes a written statement addressing the Standard Operating Procedures (SOPs) for all situations common to most laboratories (see section A).

    - The CHP also includes specific information on:

        - Chemical/hazardous waste disposal procedures
        - Medical consultation
        - Compressed gas handling
        - Reporting emergencies
        - Emergency evacuation procedures
        - Segregation of stored chemicals
        - Flammable liquid storage
        - Spill response
        - Glassware handling procedures
        - Training
        - Housekeeping procedures & practices
        - Use of fire extinguisher

- ***Provide Training and Information.*** Employees must receive both hands-on training and information about the CHP (also see section M).

    The training:

    - Will heighten employee awareness of the nature of chemical hazards in the laboratory environment, and

  - Provide employees with the skills to recognize the hazards posed by chemicals and to appropriately protect themselves from those hazards.

- ***Provide Access to Medical Consultation.*** The Project Leader/Facility Manager/Supervisor must also provide for medical consultation at no cost and at reasonable times whenever any of the following three situations occur (also see section L):

  - Whenever an employee develops signs or symptoms associated with any chemical he/she may have been working with,

  - Whenever an employee is exposed above the threshold for medical monitoring established by a substance-specific standard such as benzene, arsenic, or formaldehyde, or

  - After any unforeseen release of a hazardous chemical, such as in a spill or leak that results in employee exposure.

CHEMICAL HYGIENE PLAN

Department of the Interior
U.S. Fish and Wildlife Service

FACILITY NAME: _____

FACILITY ADDRESS: _____

_____

_____

TELEPHONE: _____

STATION PROJECT LEADER: _____

LABORATORY MANAGER (If applicable): _____

CHEMICAL HYGIENE OFFICER: _____

EMERGENCY TELEPHONE NUMBERS

Local Police/Fire/EMS -

Poison Control Center -

Radiation Emergencies (if applicable) -

Utility Failure -

Flood Damage -

Chemical Spills -

Cardiac Emergencies -

Regional Safety Office -

[*Following are general Standard Operating Procedures (SOPs). Each laboratory working with hazardous chemicals should include their own specific SOPs here. You can develop laboratory-specific SOPs by conducting a Job Hazard Analysis of potentially hazardous tasks (See 240 FW 2).]*

A. STANDARD OPERATING PROCEDURES

Few laboratory chemicals are without hazards. Presume that any mixture of hazardous chemicals is more toxic than the most toxic of the individual components of that mixture. Facilities should use best management practices to minimize wastes (see Less is Better, Guide to Minimizing Waste in Laboratories). When working with chemicals, use the following general precautions:

AVOID UNNECESSARY EXPOSURES TO CHEMICALS:

- Never work in an environment where you can smell or taste chemicals. Apparatus that can discharge toxic chemicals (vacuum pumps, distillation columns, etc.) should be vented into local exhaust devices.
- Do not allow the release of toxic substances into any temperature controlled rooms, since these laboratory work areas usually have self-contained re-circulated air.
- Use only those chemicals for which the quality of the available ventilation system is both adequate and appropriate.
- Do not eat, drink, smoke, chew gum, or apply cosmetics or lip balm/gloss in work areas where laboratory chemicals are present. After leaving the laboratory, always wash hands before conducting these activities.
- Avoid storing, handling, or consuming food or beverages in storage areas, refrigerators, glassware, or utensils that are used for laboratory operation.
- Handle and store laboratory glassware with care to avoid damage. Do not use damaged glassware. Use equipment only for its designed purpose.
- Wash areas of exposed skin thoroughly before leaving the laboratory.
- **Do not** use mouth suction for pipetting or starting a siphon.
- Confine long hair and loose clothing.
- Keep the work area clean and uncluttered.
- Always clean up the work area after completing an operation or experiment and at the end of each day or procedure.
- Properly label and store all chemicals and equipment.
- Before beginning any new laboratory operation, seek information and advice about hazards. Plan appropriate protective procedures and positioning of equipment.
- If a utility service fails (such as ventilation exhaust, etc.) in an unattended operation, leave the lights on, place an appropriate sign (DO NOT ENTER/DANGER) on the door, and provide for containment of toxic substances.
- Be aware of all unsafe conditions in the laboratory and try to correct them immediately.

- Ensure that all people, including visitors, wear appropriate eye protection wherever necessary, such as in areas where chemicals are stored or handled.

- Wear appropriate gloves when you might contact toxic materials. Always inspect the gloves before each use and wash them before you take them off. Under normal wear conditions, replace them periodically. Replace them immediately if contaminated or damaged.

- Use any other protective and emergency equipment or apparel as necessary and appropriate.

- Do not wear contact lenses in the laboratory, unless necessary. If you must wear contacts, inform supervisory staff so that special precautions can be taken.

- Remove laboratory coats immediately if contaminated.

- Wear shoes at all times in the laboratory. Do not wear sandals, perforated shoes, sneakers, or shoes made of canvas.

- Use a laboratory hood exhaust system for all operations that may result in the release of toxic chemical vapors or dust.

- Make sure exhaust hoods are performing adequately (80-120 feet per minute airflow at the sash position) before use. Keep hoods closed at all times, except when adjustments to the exhaust ventilation system or the hood itself are being made. Keep materials stored within the hood to a minimum. Do not allow stored materials to block the exhaust vents or airflow.

ACCIDENTS AND SPILLS:

- If splashed on clothing or skin, in the face or eyes, into mouth or swallowed:
    - Identity the chemical,
    - Follow the exposure control instructions that are on the container (e.g., remove contaminated clothing or promptly flush the affected area with water for a minimum of 15 minutes. Use a safety shower when contact is extensive.)
- Seek immediate medical attention, and
- Promptly clean up spills using appropriate personal protective equipment and dispose of all materials properly (also see sections F and G of this CHP).

B. RESPONSIBILIITES

(1) CHEMICAL HYGIENE OFFICER must:

- Receive program-specific support from the Regional Safety Office;

- Work with Project Leader/Facility Manager/Supervisor and employees to develop and implement appropriate chemical hygiene policies and practices;

- Support the use of all personal protective equipment, when required;

- Monitor the procurement, use, and disposal of all chemicals used in the laboratory work place;

- Ensure that the chemical and hazardous waste inventory lists used for the laboratory are updated as needed including material safety data sheets; and

- Continually seek ways to improve the existing chemical hygiene program.

(2) PROJECT LEADER/FACILITY MANAGER/SUPERVISOR must:

- Ensure that all laboratory personnel know and follow the chemical hygiene rules;
- Ensure staff perform/maintain an annual chemical and hazardous waste inventory (see section C);
- Ensure staff dispose of chemical and hazardous waste materials in accordance with local and Federal requirements;
- Determine the required levels of personal protective clothing and equipment necessary for all laboratory operations, make it available, and ensure it is in working order;
- Provide appropriate training;
- Provide regular, formal chemical hygiene and housekeeping inspections, including routine inspections of emergency equipment; and
- Ensure that all equipment, including lab hoods and exhaust systems, is maintained in working order. All lab hoods must be maintained in accordance with NFPA 45, 242 FW 10, or the manufacturer's requirements, whichever is more strict.

(3) EMPLOYEES must:

- Plan and conduct each operation in accordance with the CHP;
- Use good personal chemical hygiene habits;
- Use the appropriate levels of personal protective clothing and equipment for all laboratory operations requiring such protective measures (maintain, clean, store as required); and
- Understand all CHP-related training.

(4) FACILITY SAFETY AND HEALTH COMMITTEE MEMBERS must:

- Include at least one laboratory employee (see 240 FW 1 for committee specifics),
- Meet quarterly, at a minimum, and
- Discuss and resolve safety and chemical hygiene issues.

C. CHEMICAL INVENTORY

Staff will perform an annual chemical inventory that lists all hazardous chemicals in the laboratory. The inventory must list chemicals:

- That are classified as hazardous by:
    - The Hazard Communication Standard (OSHA), Appendices A and B (includes the Department of Transportation's (DOT) and the Environmental Protection Agency's (EPA) classifications), or
    - Displaying a 2 or greater in any section of the National Fire Protection Association (NFPA) diamond.

The chemical inventory's listing must be identical to the annual chemical listing that is performed to comply with the requirements for the Hazard Communication Standard. Use Material Safety Data Sheets (MSDSs) for assistance with this process.

The following tables, color coded to match the NFPA diamond, show the meaning of the numbers in the diamond.

Health Hazard (Blue)	
4	Very short exposure could cause death or serious residual injury even though prompt medical attention is given.
3	Short exposure could cause serious temporary or residual injury even though prompt medical attention is given.
2	Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
1	Exposure could cause irritation but only minor residual injury even if no treatment is given.
0	Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

Flammability (Red)	
4	Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.
3	Liquids and solids that can be ignited under almost all ambient conditions.
2	Must be moderately heated or exposed to relatively high temperature before ignition can occur.
1	Must be preheated before ignition can occur.
0	Materials that will not burn.

Instability (Yellow) [1]	
4	Readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.
3	Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation, or reacts explosively with water.
2	Normally unstable and may readily undergo violent decomposition but does not detonate. Also may react violently with water or may form potentially explosive mixtures with water.
1	Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.
0	Normally stable, even under fire exposure conditions, and is not reactive with water.

Special Hazards (White)	
This section is used to identify special hazards. There are only three NFPA 704 **approved** symbols:	
OX	This denotes an oxidizer, which is a chemical that can greatly increase the rate of combustion/fire.
SA	This denotes gases that are simple asphyxiants. The only gases for which this symbol is permitted are nitrogen, helium, neon, argon, krypton, and xenon. The use of this hazard symbol is optional.
	Unusual reactivity with water. This indicates a potential hazard using water to fight a fire involving this material. When a compound is both water-reactive and an oxidizer, the W/bar symbol should go in this quadrant and the OX warning is placed immediately below the NFPA diamond.

Use the following form to perform the chemical inventory. Once it's complete, you can use it in the required documents for the Hazard Communication Program, the Community Right-to-Know Program, and the Laboratory Standard or Chemical Hygiene Program.

Chemical Inventory Form

Location:			**Name:**		
Department:			**Date:**		
Chemical Name/Manufacture	**Quantity**	**Hazard Class(es)**	**Location**	**Date Received**	**Date Removed**

List chemicals alphabetically by section according to the most commonly used name (e.g., bleach). Include the average quantity in storage on a monthly basis, as well as the physical state (e.g., solid, gas, or liquid). In the "location" column, provide additional information to further identify the chemical's specific location (e.g., under the sink, third shelf in the safety cabinet, etc.).

Use the following abbreviations to identify Hazard Class(es) on the Chemical Inventory Form:

BIO Biohazard	**NON** Non-Hazardous
CARC Carcinogen	**OX** Oxidizer
CG Compressed Gas	**PF** Peroxide-Former
CMB Combustible	**PYR** Pyrophoric
COR-A Corrosive - Acid	**R** Reactive
COR-B Corrosive – Base/Caustic	**RAD** Radioactive
EXP Explosive	**RTX** Reproductive Toxin
F Flammable	**SEN** Sensitizer
HTX Highly Toxic	**TOX** Toxic
IR Irritant	**WR** Water-Reactive

A complete chemical inventory listing is located in the Office of the Chemical Hygiene Officer. If you have an inventory created under the requirements for OSHA's Hazard Communication program, you can use that inventory instead of creating a new one.

In addition, develop a Hazardous Waste Inventory in accordance with 561 FW 6.

D. MATERIAL SAFETY DATA SHEETS (MSDSs)

After the chemical inventory is complete, the CHO must gather MSDSs for each chemical and keep them in the laboratory space so they are available for employees.

E. CHEMICAL STORAGE

Because storing laboratory chemicals presents an ongoing safety issue, minimize chemical storage by keeping on-hand inventories as small as practical. You should limit quantities to no more than 1 year's supply.

- Avoid storing chemicals on bench tops and in exhaust hoods as this practice may cause fire or spills.
- Only use ventilated cabinets and specially monitored refrigerators for chemical storage. Do not store food in these cabinets and refrigerators.
- Do not store incompatible chemicals in the same cabinet or space. Store flammable liquids in flammable liquid storage cabinets with self-closing fire doors and proper ventilation (see NFPA standards).
- Use safety cans with a spring-loaded spout to transport flammable liquids.
- Date chemical containers with the month and year that you received them in the lab.
- Store toxic chemicals, including carcinogens, in ventilated storage areas in unbreakable, chemical-resistant secondary containers. These containers must be labeled "CAUTION: HIGH CHRONIC TOXICITY OR CANCER SUSPECT AGENT." (The CHO maintains a separate inventory list of carcinogens and suspected carcinogens.)
- Strap or chain cylinders of compressed gases to a wall or bench top and cap them when not in use.

F. CHEMICAL SPILL RESPONSE

Contain chemical spills using the following (*CLEAN*) thought process:

- Contain spill
- Leave area
- Emergency: eye wash, shower, medical care
- Access MSDS
- Notify supervisor

Use OSHA guidelines to contain spills. Spill kits are available in the (*insert location*).

G. CHEMICAL AND HAZARDOUS WASTES DISPOSAL

Contact your Regional Environmental Compliance Coordinator (RECC) for guidance on how to collect, segregate, store, and transport chemical wastes. Dispose of chemical wastes in accordance with EPA and State Department of Waste Management regulations. Consider the following when developing your Waste Management Plan:

- Ensure chemical and hazardous wastes are properly identified, managed, and disposed of in accordance with all Federal, State, and local regulations. Contact local and State regulatory agencies for approved disposal options and facilities.

- Store sharps (e.g., non-infectious, broken glass, other sharps) in approved sharps containers and do not dispose of them with other routine solid waste. Commercial vendors sell sharps containers that allow the management and disposal of these items.

- Do not put hazardous chemicals in the sewer or trash without proper clearance from regulatory agencies. Collect, store, and manage hazardous chemicals for disposal.

H. LABELING

The OSHA regulations at 29 CFR 1910.1450 contain specific labeling requirements. We must clearly label all hazardous chemicals that we ship and use. Do not remove or deface labels.

Chemical manufacturers, importers, and distributors should make sure that each container of hazardous chemical leaving the work place is labeled, tagged, or marked with the following information:

- Identity of the hazardous chemical,

- Appropriate hazard warnings, and

- Name and address of the chemical manufacturing company.

Label each hazardous chemical you transfer outside the laboratory that is not in its original container. These labels must contain:

- Identity of the hazardous chemical,

- The exposure route of entry (e.g., eyes, nose, mouth, skin),

- Physical hazards associated with the hazardous chemical, and

- The target organ or organs for the chemical.

I. PERSONAL PROTECTIVE EQUIPMENT

Laboratory workers must:

- Wear gloves whenever there is a potential for direct skin contact with blood, hazardous chemicals, or infectious materials.

- Only wear lab coats in the laboratory area and button them to protect your clothing. The Project Leader/Facility Manager/Supervisor/CHO will provide you with a lab coat.

- Wear an impervious apron in areas where there is a high risk for chemical splashes.

- Remove all personal protective equipment immediately after leaving the work areas (or as soon as possible) and put clothing in the laundry hamper located in the laboratory area or change rooms.

- Wear masks and eye protection or chin-length face shields to prevent contamination from splashes or sprays of blood, infectious materials, or hazardous chemicals whenever there is a potential for eye, nose, or mouth contamination.

You can find necessary personal protective equipment in the (*insert location*).

If you need a respirator to maintain exposure levels below permissible exposure limits (PEL), the Project Leader/Facility Manager/Supervisor/CHO will provide one to you. See 242 FW 14 and 29 CFR 1910.134 (OSHA's Respiratory Protection Standard) for more information about using respirators.

J. EXPOSURE MONITORING

The Project Leader/Facility Manager/Supervisor/CHO is responsible for the safe operation of their laboratory areas. They must conduct a job hazard assessment to assess the risk(s) associated with laboratory operations. If a job hazard assessment indicates a possible exposure greater than any allowable exposure limits, the Project Leader/Facility Manager/Supervisor/CHO must conduct personal exposure monitoring to measure the exposure levels.

Initial baseline exposure monitoring is required in laboratories whenever the following chemicals and minerals are stored or used:

- 1,2-dibromo-3-chloropropane
- ethyleneimine
- 2-acetylaminofluorene
- benzene
- formaldehyde
- 3,3'-dichloro-benzidine
- benzidine
- inorganic arsenic
- 4-aminodiphenyl
- beta-naphthylamine
- lead
- 4-dimethylaminoazo-benzene
- beta-propiolactone
- methyl chloromethyl ether
- 4-nitobiphenyl
- bis-chloromethyl ether
- N-nitrosodim-ethylamine
- acrylonitrile
- coal tar pitch volatiles
- vinyl chloride
- alpha-naphthylamine
- ethylene oxide

You may contact your Regional Safety Office for assistance with personal exposure monitoring.

The Project Leader/Facility Manager/Supervisor/CHO must notify all affected employees in writing of the monitoring results within 15 days of receiving them. They may notify each person individually or post the results so they are available to all employees.

If chemical exposures are greater than applicable exposure levels, the Project Leader/Facility Manager/Supervisor/CHO must continue periodic monitoring in accordance with OSHA standards and evaluate the implementation of hazard abatement through engineering controls.

K. ENGINEERING CONTROLS

The Project Leader/Facility Manager/Supervisor/CHO must ensure that the following engineering control checks occur and maintain associated documentation:

- Eyewash units and safety showers, if present, are inspected and flushed monthly.

- Fire extinguishers are inspected at least quarterly.

- Chemical stockrooms, storerooms, and storage facilities are large enough and have adequate ventilation.
- All chemical hygiene related equipment is monitored continuously and modified if inadequate.
- Chemical spill kits, compatible for the chemicals stored or used, are in an accessible location.

L. MEDICAL CONSULTATIONS

The Project Leader/Facility Manager/Supervisor/CHO must identify a licensed physician or a medical professional under the direct supervision of a licensed physician to perform medical examinations and consultations. These examinations/consultations take place at no cost to the employee, without loss of pay, and at a time and place reasonable to the employee.

The Project Leader/Facility Manager/Supervisor/CHO must send an employee for medical evaluation when:

- The employee develops signs or symptoms associated with a hazardous chemical exposure,
- Exposure monitoring reveals an exposure level routinely above the action level, or
- An event takes place in the work area such as a spill, leak, or an explosion resulting in hazardous chemical exposure.

The Project Leader/Facility Manager/Supervisor/CHO must provide the following information to the attending physician:

- The identity of the hazardous chemicals to which the employee may have been exposed,
- A description of the conditions under which the exposure occurred, including quantitative exposure data, when available,
- A description of the signs and symptoms of the exposure, and
- Copies of MSDSs for the chemicals to which the employee was potentially exposed.

The physician provides a written opinion that includes:

- Any recommendations for further medical follow-up,
- Results of the medical examination and any associated tests,
- Any medical conditions that may be revealed in the course of the examination that may place the employee at increased risk as a result of the exposure to a hazardous chemical found in the work place, and
- A statement by the physician that the employee has been informed of the consultation/examination results and any medical condition that may require further examination or treatment.

The physician will not reveal findings unrelated to the exposure.

M. TRAINING

If you are assigned to a work area where hazardous chemicals are used, you must attend a "Safety and Health Awareness" orientation before you begin work in those areas. Your Project Leader/Facility Manager/Supervisor/CHO will:

- Provide the training and any necessary refresher training sessions, and
- Document your attendance.

To prepare for the training, a lesson plan that outlines the expectations of the program and the time frame for the learning experience will be developed. All training must:

- State the objectives of the training and the CHP Program;
- Include descriptions of hazardous chemical locations, labeling, MSDSs, necessary PPE, and associated items; and
- Include a list of audiovisuals, handout materials, and specialty equipment available.

N. HOUSEKEEPING

Laboratory floors will be cleaned regularly. The Project Leader/Facility Manager/Supervisor/CHO will ensure that the housekeeping staff receives training on the risks associated with working in the laboratory.

The housekeeping managers must conduct periodic inspections of the laboratory areas to assess whether:

- Stairwells and hallways are free of obstructions,
- Waste and debris are deposited in appropriate trash receptacles and then properly removed from the laboratory work areas, and
- Chemical spills are cleaned according to established protocol.

O. RECORDKEEPING and REPORTING

The Project Leader/Facility Manager/Supervisor/CHO must meet requirements in 29 CFR 1910.20:

- For employees:
    - Maintain chemical inventories, MSDSs, hazardous waste inventory, waste disposal manifests, and records.
    - Maintain an accurate record for each employee who undergoes environmental exposure monitoring, medical consultations, and examinations, including all tests and the written opinions of physicians. The servicing Regional Human Resources office must keep employee medical examination information.
    - Maintain training records.
- Maintain exposure monitoring records that are not related to specific employees.

- The immediate supervisor must report accidents or incidents electronically to the https://www.smis.doi.gov (SMIS) within 6 working days.