CHEMICAL HYGIENE PLAN
for
Flora High School

Last Revised 8/14/2017

The general intent of the chemical hygiene plan is to protect laboratory employees from health hazards associated with the use of hazardous chemical in our laboratory and to assure that our laboratory employees are not exposed to substances in excess of the permissible exposure limits as defined by OSHA in 29 CFR 1910 subpart Z. **David Drake** is designated as the Chemical Hygiene Officer. The Chemical Hygiene Officer will keep a copy of the plan and make it available to all employees for review. The plan will be reviewed annually and updated as necessary.

I. **Standard Operating Procedures** to be followed in the laboratory relevant to safety and health when using chemicals.

The standard operating procedures in place for the safe handling of chemicals in our laboratory are attached to this document as Appendix A.

II. Criteria for Use of Control Measures to Reduce Employee Exposure to Hazardous Chemicals

A. The following operations shall be in <u>laboratory fume hoods</u>:
- **Preparation of volatile or gas-producing materials for laboratory use (e.g. dilution or apportioning of acids or other harmful dissolved dissolved gases such as ammonia or chlorine).**
- **Chemical reactions where evolution of harmful gases is expected or likely.**
- **Chemical reactions producing significant amounts of smoke or other aerosolized matter.**
- **Chemical reactions requiring containment.**

B. The following operations shall be performed in <u>biological safety</u> <u>cabinets</u>:
- **Biological safety cabinets will not be required for activities in this laboratory.**

C. The following operations shall be performed in <u>glove boxes</u>**<u>:</u>**
- **Glove boxes will not be required for activities in this laboratory.**

D. The use of respirators will not be necessary in the standard operation of this laboratory. In the event that they are required for non-routine activities, respirators shall be acquired and used in accordance with the OSHA respirator standard 29 CFR 1910.134. Should respirators become necessary, a respirator policy will be drafted and associated documentation will be made available for employee review.

E. Appropriate protective apparel compatible with the required degree of protection for substances handled shall be used. The supervisor will advise employees on glove, gown, eye protection, barrier creams, and etc. use. Permeability charts are available **in Room 2C**.

F. Employees will be instructed on the location and use of eye wash stations and safety showers. The supervisor is responsible for this instruction.

G. Employees will be trained at least annually on the use of fire extinguishers and other fire protection systems.

III. Maintenance of Fume Hoods and Other Protective Equipment

Laboratory equipment will be inspected according to the parameters below. Equipment failing inspection will be taken out of service until suitable repairs have been made and adequate function has been restored.

A. Fume Hoods will be inspected every **six** months by **David Drake**; adequacy of face velocity will be determined by **obtaining airflow measurements at six face regions; average face velocity must be 80-120 fpm**; reports of

hood inspections are filed **in Room 2C** for employee review.

B. Safety Showers will be inspected every **six** months by **David Drake or Addie Dehart** to ensure adequate pressure and volume of flow and appropriate responsiveness of equipment; reports inspections are filed **in Room 2C** for employee review.

C. Eyewash Stations will be inspected every **six** months by **David Drake or Addie Dehart** to ensure adequate pressure and volume of flow and appropriate responsiveness of equipment; reports inspections are filed **in Room 2C** for employee review.

IV. Employee Information and Training

A. Each employee covered by the laboratory standard will be provided with information and training so that they are appraised of the hazards of chemicals present in their work area. This training will be given at the time of initial assignment and prior to new assignments involving different exposure situations. Refresher training will be given **annually**.

B. The training/information sessions shall include:

- The contents of 1910.1450 and its appendices which are always available to employees.
- The availability and location of the written chemical hygiene plan.
- Information on OSHA permissible exposure limits (PELs) where they exist, and other recommended exposure limits.
- Signs and symptoms associated with exposure to hazardous chemicals in laboratories.
- Location of reference materials, including all SDSs received, on the safe handling of chemicals in
- Methods to detect the presence or release of chemicals (i.e. monitoring, odor thresholds, etc).
- The physical and health hazards of chemicals in laboratory work areas.
- Measures to protect employees from these hazards, including: Standard operating procedures; Work practices; Emergency procedures; and Personal protective equipment.
- Details of the chemical hygiene plan.

C. **The Chemical Hygiene Officer (David Drake)** is responsible for conducting the training sessions which will consist of **a slide presentation with supplementary handouts.** An outline of the training program and other training program materials are attached as Appendix B.

D. Each employee will sign a form documenting that they have received training.

E. **The Chemical Hygiene Officer (David Drake)** is responsible for developing standard operating procedures and for training on the procedures.

V. Prior Approval for Specific Laboratory Operations

Laboratory procedures which present a serious chemical hazard (e.g. work with select carcinogens, reproductive hazards, or neurotoxins) require prior approval before work can begin. Our laboratory does not at this time use any chemicals which are sufficiently hazardous to require prior approval before they are used. In the event that use of such chemicals is required, the employee shall obtain approval and guidance for safe handling from the **Chemical Hygiene Officer (David Drake)**.

VI. Medical Consultation and Examination.

We provide to affected employees, medical attention including follow up examinations which the physician determines is necessary under the following circumstances:

A. Whenever an employee develops signs and symptoms associated with a hazardous chemical to which they may have been exposed, the employee shall be provided an opportunity to receive appropriate medical examination. The employee shall contact the **Chemical Hygiene Officer (David Drake)** to initiate the medical program.

B. Where exposure monitoring reveals an exposure level routinely above the OSHA action level (AL) (or in the absence of an action level, exposure above the OSHA permissible exposure level [PEL]) for OSHA regulated substances for which there are medical monitoring and medical surveillance requirements, medical surveillance shall be established for that employee. Currently our laboratory does not routinely use substances that have a separate OSHA standard with medical surveillance requirements.

C. Whenever an event takes place in the work area, such as a spill, leak, explosion or other occurrence resulting in the likelihood of a hazardous exposure, the affected employee, laboratory or custodial, shall be provided an opportunity for a medical consultation. This consultation is for the purpose of determining the need for a medical examination.

D. All medical examinations and consultations are provided by **Clay County Hospital**. All aspects of these examinations are provided by a licensed physician, or supervised by a licensed physician. These examinations are provided without cost to the employee, without loss of pay, and at a reasonable time and place.

E. The Chemical Hygiene Officer will provide the following information to the physician:

- Identity of the hazardous chemical to which the employee may have been exposed.
- A description of the conditions of the exposure including exposure date if available.
- A description of the signs and symptoms of exposure that the employee is experiencing (if any).

F. The written opinion that the company receives from the physician shall include:

- Recommendations for future medical follow up.
- Results of examination and associated tests.
- Any medical condition revealed which may place the employee at increased risk as the result of a chemical exposure.
- A statement that the employee has been informed by the physician of the results of the examination/ consultation and told of any medical conditions that may require additional examination or treatment.

G. The material returned to our company by the physician shall **NOT** include specific findings and diagnosis which are unrelated to occupational exposure.

VII. Responsibilities under the Chemical Hygiene Plan.

The aforementioned Chemical Hygiene Officer will meet with members of the Chemical Hygiene Committee annually to discuss changes to the Chemical Hygiene Plan. Attendance and minutes of these meetings will be filed for employee review. The duties of the members of the Chemical Hygiene Committee are specified below.

Chemical Hygiene Officer (David Drake)

- Establishes, maintains, and revises the Chemical Hygiene Plan.
- Creates and revises safety rules and regulations.
- Monitors procurement, use, storage, and disposal or chemicals.
- Conducts regular inspections of laboratories, preparations rooms, and chemical storage rooms and submits detailed laboratory inspection reports to administration.
- Maintains inspection, personnel training, and inventory records.
- Assists laboratory supervisors in developing and maintaining adequate facilities.
- Seeks ways to improve the Chemical Hygiene Plan.

Administrative Supervisor (Bobby McNeely)

- Assumes responsibility for personnel engaged in the laboratory use of hazardous chemicals.
- Provides the Chemical Hygiene Officer (CHO) with the support necessary to implement and maintain the Chemical Hygiene Plan (CHP).
- After receipt of laboratory inspection report from the CHO, meets with laboratory supervisors to discuss cited violations and to ensure timely actions to protect trained laboratory personnel and facilities and to ensure than the department remains in compliance with all applicable federal, state, and local codes and regulations.

- Provides budgetary arrangements to ensure the health and safety of personnel, visitors, and students.

Laboratory Supervisors (Addie Dehart, Doug Slagley, and David Drake)

- Ensure that laboratory personnel, students, and visitors comply with the CHP and do not operate equipment or handle hazardous chemicals without proper training and authorization.
- Always wear personal protective equipment (PPE) that is compatible to the degree of hazard of the chemical.
- Follow all pertinent safety rules when working in the laboratory to set an example.
- Review laboratory procedures for potential safety problems before implementation.
- Ensure that visitors follow the laboratory rules and assume responsibility for laboratory visitors.
- Ensure than PPE is available and properly used by employees, students, and visitors.
- Maintain and implement safe laboratory practices.
- Provide regular, formal chemical hygiene and housekeeping inspections, including routine inspections of emergency equipment.
- Monitor the facilities and the chemical fume hoods to ensure that they are maintained and function properly.
- Contact the CHO to report problems with the facilities or the chemical fume hoods.

VIII. Additional Protection for Work with Select Carcinogens, Reproductive Toxins, and Chemicals with High Acute Toxicity.

The following chemicals identified as Select Carcinogens, Reproductive Toxins, or Chemicals with High Acute Toxicity are present in the laboratory. With the exception of phenolphthalein, these chemicals are not used routinely.

- Chromium(VI) compounds (IARC Group 1; NTP - Known)
- Cobalt compounds (IARC Group 2B)
- p-Dichlorobenzene (IARC Group 2B; NTP – Reasonably Expected)
- Formaldehyde (IARC Group 1; NTP – Known)
- Lead metal (IARC Group 2B; NTP – Reasonably Expected; RT)
- Lead compounds (IARC Group 2A; NTP – Reasonably Expected; RT)
- Mercury (RT)
- Mercury compounds (RT)
- Mercury(II) dichloride (HAT)
- Naphthalene (IARC Group 2B; NTP – Reasonably Expected)
- Nickel compounds (IARC Group 1; NTP – Reasonably Expected)
- Phenolphthalein (IARC Group 2B; NTP – Reasonably Expected)
- Sulfuric Acid (NTP – Known)

When these chemicals are used, the following provisions shall be employed where appropriate:

A. Establishment of a designated area.
B. Use of containment devices such as fume hoods.
C. Procedures for safe removal of contaminated waste.
D. Decontamination Procedures.

The special procedures used in this laboratory for the use of these chemicals is found in Appendix C.

IX. Emergency Response

Our emergency action plan under 1910.38 and emergency response plan under 1910.120 are attached as Appendices D and E, respectively.