TOWSON UNIVERSITY

CONFINED SPACE ENTRY PROGRAM

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REVISED MARCH 2015

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Towson University
CONFINED SPACE ENTRY PROGRAM

I. Scope

This procedure applies to all employees of Towson University. Whenever non-university contractors are working on campus engaging in activities covered by the scope and application of this procedure they must directly coordinate with the Department of Facilities Management. The Department of Facilities Management will ensure that all contractors comply with this policy unless their policy meets or exceeds the requirements presented in this document and is in full compliance with current OSHA/MOSH regulations. A copy of the contractors Confined Space Entry Policy will be provided to the Department of Environmental Health & Safety (EHS) for review at least 48 hours prior to work commencement. Otherwise the contractor will comply with this policy. This standard does not apply to Confined Spaces in new construction areas, agricultural areas or shipyards.

II. Purpose

The purpose of this policy is to prevent injury to TU employees. It establishes minimum requirements and standards for safely entering confined spaces on campus. This procedure shall be used whenever a worker (TU employee or contractor) enters any space identified as being a confined space.

III. Responsibilities

A. **Employee/Authorized Entrant**: It is the responsibility of each employee to:

1. Comply with the procedures in this policy.
2. Report all unsafe or potentially dangerous conditions to their supervisor.
3. Know space hazards, including information on mode of exposure, signs and symptoms and consequences of exposure.
4. Use appropriate personal protective equipment.
5. As necessary, maintain communications with attendants to enable attendant to monitor entrants status as well as alert entrant to evacuate.
6. Exit from the confined space as soon as possible when ordered by an authorized person, when the entrant recognizes the warning signs or symptoms of exposure, when a prohibited condition exists or when an automatic alarm is activated.
7. Alert the attendant when a prohibited condition exists or when warning signs or symptoms exist.

B. **Attendant:** It is the responsibility of each attendant to:

1. Comply with procedures in this policy.
2. Report all unsafe or potentially unsafe conditions to their Entry Supervisor.
3. Be present at all times outside of a permit required confined space when someone is inside the permit confined space unless relieved by another authorized attendant.
4. Keep all unauthorized entrants out of the permit required confined space.
5. Notify entrants of any changes in conditions which might create a new hazard or require entrants to exit the space.
6. Know existing and potential hazards, including information on the mode of exposure, signs or symptoms, consequences of the exposure and their physiological effects.
7. Maintain communications with and keep an accurate account of those workers entering the permit required confined space.
8. Order evacuation of the space when a prohibited condition exists, when a worker show signs of physiological effects of hazard exposure, when an emergency outside the space exists, and when the attendant cannot effectively and safely perform his required duties.

9. Summon rescue personnel during an emergency.
10. Inform authorized entrants and entry supervisors of entry by unauthorized persons.
11. Perform no other duties that interfere with the attendant's primary duties.

C. **Entry Supervisor**: It is the responsibility of each supervisor to know the hazards that entrants may facing , including symptoms and consequences of exposure, and:

1. Maintain a safe and healthy work environment (including supervising environmental monitoring in permit required confined spaces).
2. Ensure that employees are aware of, are properly trained in, and follow the procedures for working in confined spaces as contained in this policy.
3. Comply with the procedures in this policy.
4. Report all unsafe or potentially dangerous conditions to their supervisor.
5. Verify emergency plans and specified entry conditions such as permits, test, procedures, and equipment before allowing entry.
6. Terminate entry and cancel permits when entry operations are completed or if a new condition exists.
7. Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained.

D. **Department of Facilities Management (DFM)**: It is the responsibility of the Department of Facilities Management to:

1. Maintain a safe and healthy work environment.
2. Identify those DFM employees who could be potentially required to enter a confined space as a requirement of their job and provide a list to EHS. Provide EHS with changes to the list as often as they occur.
3. Identify Entry Supervisors and/or "Authorized Entrants" who will be responsible for ensuring safe permit required confined space work practices are being followed and who will be permitted to sign "Confined Space Entry Permits" (CSEP) and provide a list of those individuals to EHS.
4. Ensure the procedures in this policy are complied with by all DFM and contractor supervisors and employees.
5. Ensure that all confined space entry employees are physically qualified to work in permit required confined spaces and certify in writing that they are adequately trained. DFM employee physicals shall be scheduled by EHS.
6. Identify and post warning signs at all **Permit Required** Confined Spaces on campus and provide a list of all confined spaces to EHS.
7. Purchase all safety and atmospheric monitoring equipment necessary for safe worker entry into confined spaces.
8. Immediately report all unsafe or potentially dangerous conditions to EHS.
9. Conduct an annual review of all permit required confined spaces to determine if there were any: 1) changes in reported hazards; 2) unauthorized entries; 3) any injuries or "near misses".
10. Maintain all completed entry permits on record for one (1) year from the date of entry & provide a copy to EHS.
11. Maintain all personal training records, supervisory reviews, environmental testing results and environmental monitoring equipment calibration results for three (3) years.

D. **Department of Environmental Health & Safety (EHS)**: It is the responsibility of EHS to:

1. To assist the campus community in maintaining a safe and healthy work environment
2. Review and update this policy so that it is current with all regulations and technologies.
3. Conduct periodic audits to ensure that the procedures in this policy are being complied with.
4. Train identified TU employees in confined space entry procedures.
5. Develop in coordination with the DFM specific hazard awareness and monitoring instrumentation training.

6. When requested, evaluate all unsafe or potentially dangerous conditions existing within confined spaces.
7. Conduct an annual review of all permit required confined spaces to determine if there were any: 1) changes in reported hazards; 2) unauthorized entries; and 3) any injuries or a near miss.
8. Coordinate medical monitoring for all TU employees to ensure that all who enter campus confined spaces are medically qualified to do so.

IV. DEFINITIONS

Atmosphere- The gases, vapors, mists, fumes and dusts contained within a confined space.

Attendant- A person trained in emergency rescue procedures and CPR and assigned to remain on the outside of the confined space and to be in constant contact with those working inside.

Authorized Entrant/ Qualified Person- A person designated by the DFM (or contractor), in writing, as capable (by education and/or specialized training) of anticipating, recognizing and evaluating employee exposure to hazardous substances or other unsafe conditions in a permit required confined space.

Confined Space- Refers to a space which by design has limited openings for entry and exit and has adequate size and configuration for employee entry; unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupation. These include, but are not limited to, storage tanks, boilers or water tanks, tank cars or vehicle mounted tanks, pits, holes or excavations deeper than 4 feet, silos, vats, process vessels, degreasers, ventilation and exhaust ducts, sewers, utility tunnels and vaults, pipelines, kilns, furnaces, heat exchangers, ovens, transformers, oil circuit breakers, and condensers.

Emergency- A sudden and unexpected condition which could endanger entrants and requires immediate action.

Engulfment- The surrounding and/or effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction or crushing.

Entry- The act by which a person intentionally passes through an opening into a permit required confined space. The entrant is considered to have entered as soon as any part of the entrants face breaks the plane of an opening into the space.

Entry Permit- A written or printed document that has been provided by the employer to allow and control entry into a permit space and that contains the required information.

Hot Work- Any work involving burning, welding, cutting, riveting or similar fire producing operation, as well as work which produces a source of ignition such as drilling, abrasive blasting and space heating.

Immediately Dangerous To Life and Health, (IDLH)- Any condition which poses an immediate threat of loss of life; may result in irreversible or immediate severe health effects; may result in eye damage; irritation or other conditions which could impair escape from the confined space.

Isolation- A process whereby the confined space is removed from service and completely protected against the accidental release of material by the following: blanking off (use of skillet type metal blanks between flanges), misaligning sections of all lines and pipes, a double block and bleed system, electrical lockout of all sources of power, and locking or disconnecting all mechanical linkages.

Lower Flammability Limit (LFL)- The minimum concentration of a combustible gas or vapor in air (usually expressed in percent by volume at sea level), which will ignite if any ignition source is present.

Oxygen Deficiency- Refers to an atmosphere containing less than 19.5% oxygen at normal atmospheric pressure. Normal air contains 21% oxygen.

Oxygen Enriched Atmosphere- Refers to an atmosphere containing 25% or more oxygen at normal atmospheric pressure.

Permissible Exposure Limit (PEL)- The maximum 8 hour time weighted average of any airborne contaminant to which an employee may be exposed. At no time shall the exposure level exceed the ceiling concentration for that contaminant as listed in the OSHA Regulations (29 CFR 1910 Subpart Z).

Permit Required Confined Space- Any confined space that exhibits one or more of the following characteristics:

1. Contains, or has the potential to contain, a hazardous atmosphere.
2. Contains, or has the potential to contain, a material that has the potential to engulf an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
4. Contains any other recognized serious safety or health hazard.

Purging- The method which gases, vapors, or other airborne impurities are displaced from a confined space.

Qualified Person- (Authorized Entrant)- A person designated by the DFM (or a contractor), in writing, as capable (by education and/or specialized training) of anticipating, recognizing and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space.

Respirator- An approved respiratory device which meets NIOSH requirements and is designed to protect the wearer from inhalation of harmful atmospheres.

Retrieval System- Equipment (including a retrieval line, chest or full body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from confined spaces. In permit required confined spaces greater than 5 -feet deep, a mechanical lifting device (hoist) must be used.

Toxic Substances/ Toxic Contaminants- Any air contaminants regulated by the Occupational Health and Safety

Administration (29 CFR 1910 Subpart Z) or American Conference of Governmental Industrial Hygienists as being hazardous to health and having designated standards for occupational exposures to which no worker should be exposed.

V. CLASSIFICATION CRITERIA

Procedures to be followed for entry into a confined space are dependent upon the hazards identified and/or anticipated to be present in the space. Each confined space has specific combinations of potentially hazardous situations which must be evaluated before the space may be entered and work begun. It is extremely important that each space is properly assessed and classified for hazards. Classification of the degree of hazard shall be based upon the levels of oxygen, combustible gas or vapors and toxic substances according to the following:

A. **Permit Required Confined Space-**

A confined space that has one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential of engulfing an entrant.
3. Has an internal configuration such that the entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
4. Contains any other recognized serious safety or health hazard.

B. Non-Permit Required Confined Space-

Any space which meets the definition of a confined space and does not meet any of the four characteristics listed above.

VI. TU PERMIT REQUIRED CONFINED SPACES

The following is a list of the currently identified permit required confined spaces at TU. **This list is not complete.** There may be other permit required confined spaces which have not yet been identified. If additional confined spaces are identified, **prior to entry**, the space must be examined and properly classified. For additional guidance, see ATTACHMENT 1, Permit Required Confined Space Decision Flow Chart. If desired, EHS can provide assistance in the investigation and classification process.

This hazard classification of known permit required confined spaces on the TU campus is conservative and was made based upon the best available information and may be re-classified upon re-evaluation.

LOCATION	DESCRIPTION (Quantity)
Power Plant	Boilers (3) Underground Storage Tanks (2) Exhaust Stack Surge Tank (1) De-aerator Tank (1)
Towson Center	Underground Storage Tanks (2) Hot Water Tanks (2)
Glen Towers	Hot Water Tanks (8)
Johnny Unitas Stadium	Underground Storage Tank (1)
Burdick Hall	Hot Water Tanks (1)

Smith Hall	Hot Water Tanks (1) Crawl Space
Stephens Hall	Hot Water Tank (1)
Hawkins Hall	Hot Water Tank (1)
Newell Hall	Hot Water Tank (1)
Linthicum Hall	Hot Water Tank (1)
Prettyman Hall	Hot Water Tank (1)
The Burkshire	Hot Water Tanks (all)
Campus Wide	ALL Steam Tunnels ALL Steam Manholes ALL Water Manholes ALL Sanitary Sewer Manholes ALL Storm Water Manholes ALL Electrical Manholes (~41) ALL Communication Manholes (~24) Confined Spaces Which Contain Damaged ACM
Potential Confined Space Areas:	See Appendix H

VII. ATMOSPHERIC MONITORING

When continuous, forced ventilation is necessary to achieve and maintain safe levels of oxygen, combustible gases and/or toxic substances, continuous monitoring for the hazardous condition shall be performed throughout the time the confined space is occupied. Monitoring instrumentation should be approved in advance by EHS and shall be equipped with audible alarms.

Where continuous ventilation is not possible, prior to entry, the atmosphere shall be tested until the initial ventilation achieves safe conditions. The following tests will be performed in sequence:

1. Monitor for the presence of oxygen at concentrations between 19.5% and 23.5%. Concentrations of oxygen less than 19.5 % or greater than 23.5% are dangerous and spaces will not be entered while these conditions exist.

2. Monitor for the presence of combustible gases and or vapors at less than 10% of the LFL (Lower Flammability Limit). Spaces with combustible gases/vapors at concentrations greater than or equal to 10% of the LFL will not be entered while these conditions exist.

3. Monitor for the presence of toxic vapors and/or gases such as hydrogen sulfide (H2S), carbon monoxide (CO), and any other contaminants which may be already in the space or may be introduced into the space by the entrants. Both hydrogen sulfide and carbon monoxide are toxic gases. Spaces which contain greater than 35 parts per million (ppm) of carbon monoxide or greater than 10 ppm of hydrogen sulfide will not be entered while these conditions exist. Other potentially toxic gases will be monitored on an individual basis. Under no conditions will spaces be entered when concentrations of toxic materials are greater than or equal to the American Governmental Industrial Hygienists (ACGIH) threshold limit value (TVL) or the

Occupational Health & Safety Administration (OSHA) permissible exposure limit (PEL), whichever is lower.

4. Spaces which contain damaged asbestos or asbestos containing materials will only be entered by trained Level II employees wearing the appropriate personal protective equipment. (See Section VIII, Asbestos Containing Materials in Appendix A).

Entry shall be made after the safe conditions are maintained for three (3) tests conducted at five (5)minute intervals. Thereafter, monitoring shall be of a continuous nature.

If there are any questions concerning potentially toxic environmental conditions within a permit required confined space, EHS is available to assist. If there are any questions during normal duty hours, contact EHS at 410-296-7593. At all other times, EHS personnel may be paged through the TU Police (4-4444).

All environmental monitoring test results must be recorded on the confined space entry permit posted at the entrance to the confined space. In addition, all environmental test results must be recorded on a daily log that will be made available for inspection by State or Federal agencies.

VIII. VENTILATION

The classification of confined spaces is based upon the assessment of hazardous conditions including hazardous atmospheres, which must be ventilated if possible. Only ventilation equipment approved for use in potentially explosive atmospheres may be used when combustible gases are detected. Exhaust systems shall be designed to protect workers in the surrounding area from contaminated air. The method used for purging and ventilation will be determined by the potential hazards that arise due to the product stored or produced, suspected contaminants, the nature of the work to be performed, and the size, shape, and number of entrances into the confined space.

Gasoline powered ventilation blowers must use either remote clean air intakes or remote engine exhausts to prevent the accidental introduction of carbon monoxide into the confined space from blower motors. Ventilation blowers should be positioned such that the engine exhaust is downwind from the remote clean air intake. Care should be taken in positioning the clean intake so that other potentially toxic contaminants are not accidentally introduced into the Confined Space.

General forced ventilation shall be maintained where toxic atmospheres are produced as a part of a work procedure, or where a toxic atmosphere may develop due to the nature of the confined space, as in the case of desorption from walls, evaporation from residual chemicals, welding, dust producing operations, high ambient temperature and humidity or other operations which utilize materials regulated under the Maryland Hazard Communication Standard. General ventilation is an effective procedure for distributing contaminants from a local generation point throughout the work space to obtain maximum dilution. **FORCED VENTILATION WILL NOT BE USED IN THE PRESENCE OF ANY DAMAGED ACM EXCEPT IN STEAM TUNNELS/MANHOLES ONLY FOR THE PURPOSE OF REDUCING THE AMBIENT ENVIRONMENTAL TEMPERATURE PRIOR TO ENTRY.** Contact EHS for guidance.

Special precautions shall be taken if the ventilating system partially blocks the exit opening. These precautions include a means of supplying "breathable air" (Grade D, Compressed Gas Association Commodity Specification G-7.1-1966) to each worker for the time necessary to exit the space and a method for maintaining communication. This may be accomplished by using either approved Self Contained Breathing Apparatus or other form of approved supplied air respiratory protection device.

Local exhaust ventilation shall be provided when general ventilation is not effective due to restrictions in the confined space or when concentrations of contaminants occur in the breathing zone of the worker. Local high concentrations of contaminants may occur during the work activities such as welding, painting and chemical cleaning.

IX. HOT WORK

A. When open flames are used in a confined space the following precautions shall be taken to protect the workers against the accumulation of toxic or combustible gases:

1. A test for combustible gas shall be made immediately before using the open flame device, and at least once per hour while using the device.

2. The fuel tank shall not be taken into the confined space. Unless part of a respiratory protection device (i.e., self-contained breathing apparatus, etc.), compressed gas cylinders shall not be taken into confined spaces.

3. Remove all combustible materials from floor and/or surrounding area.

4. Combustible materials that cannot be moved must be protected with a noncombustible material or non-asbestos fire retardant cover.

5. All openings to lower level spaces will be tightly covered to prevent accumulation of "heavy" flammable gases and/or vapors. Ventilation hoses should be located to minimize accumulation of these gases in low areas. (**NOTE**: Use only approved explosion proof ventilation equipment when ventilating flammable gases and vapors.)

6. A worker must be assigned the specific responsibility of watching for sparks and associated fires in and around the work area and sounding the alarm in the event of an emergency. A responsible individual with a reliable means of communication (i.e. 2 way radio) will remain on site with an approved dry chemical fire extinguisher for 30 minutes after completion of the work to ensure there are no smoldering fires present. In the event of a fire, dial 911. At the emergency blue-light and yellow phones located around campus, press the emergency button to be connected to the University Police who can contact 911 for you, or dial 911 on the key pad to be connected directly to the 911 Center. Give the dispatcher all of the requested information.

7. An approved dry chemical fire extinguisher will be on site at all times.

8. All flame/spark producing equipment that is to be utilized in the confined space will be inspected by the workers and not utilized if unserviceable.

9. The sprinkler system in the space, if so equipped, is in service and functioning properly.

10. Appropriate coordination has been made with EHS if there is the possibility of false alarming of smoke or heat detectors in the area, if present.

11. There are no flammable liquids or vapors, explosive dusts or lint, or any containers or equipment that previously contained these materials in the confined space.

B. Prior to the beginning of <u>any</u> "hot work" in a confined space a "Hot Works Permit" will be issued. The supervisor and/or "qualified person" will ensure the items listed have been accomplished and both the job foreman and the DFM Supervisor and/or "qualified person" will sign the form. (See example in Appendix B) The intent of this permit is not to impede work but to serve as a checklist to ensure all safety precautions are being followed during this potentially dangerous procedure. The top copy of this form will be retained on the job site and the bottom copy will be forwarded to EHS.

X. **TRAINING**

The DFM will identify those employees who could potentially have to enter any confined space as a requirement of their job and ensure that the employees are aware of, are properly trained in, and will follow the procedures for working in confined spaces as outlined in this publication. A list of those trained employees will be provided to EHS and updated whenever there is a change. If requested, EHS is available to assist in providing confined space training to DFM employees.

The DFM will ensure that the persons responsible for monitoring for oxygen, combustible gases and/or toxic substances are trained in hazard awareness and in the use and field calibration of all monitoring equipment.

The DFM will ensure that all workers involved in confined space work must be trained and certified annually in cardiopulmonary resuscitation (CPR) and are trained in how to summon emergency assistance and in the use of emergency communications equipment. If requested, EHS is available to assist in providing CPR training to DFM employees.

The DFM will also ensure that all workers involved in confined spaces and trained in CPR will be trained annually on the University's Bloodborne Pathogens Program (BBP) through EHS.

XI. PERSONAL PROTECTIVE EQUIPMENT

At a minimum, powered air purifying respirators (PAPR's) with high efficiency particulate (HEPA) cartridges and "Tyvek" (or approved equivalent) protective clothing will be utilized when entering all confined spaces containing, or suspected of containing, damaged ACM. If other toxic contaminants/substances are present in harmful concentrations, supplied air respirators approved by EHS be utilized. As long as safe, non-hazardous breathing atmospheres are maintained in **permit required** confined spaces through the use of local exhaust or natural ventilation there is no need for respiratory protection devices. However, workers may be allowed to wear respiratory protection devices (RPD) at their discretion for protection against nuisance dusts (other than ACM) and odors. Irregardless, any individual wearing any type of RPD must be enrolled in the TU Respiratory Protection Program coordinated by EHS.

If localized areas of toxic dusts, fumes, mists, gases or vapors are created when welding, burning or painting, the appropriate RPD must be worn in the space unless local exhaust ventilation is used to remove the contaminant at the point of generation.

If noise producing powered equipment such as drills, jack hammers, etc. are to be utilized in a confined spaces all employees must wear Environmental Protection Agency (EPA) approved hearing protection devices with an Noise Reduction Rating (NRR) of at least 25 and ANSI approved impact resistant eye protection. Workers exposed to high noise levels in the work area will be enrolled in the TU Hearing Conservation Program which is coordinated by DEHS. Approved hard hats will be worn when entering all confined spaces.

Authorized entrants must use a chest or full-body harness with a retrieval line attached at the center of the entrant=s back (near shoulder level) or above the entrant’s head. Wristlets may be used in place of the chest or full-body harness if it can be demonstrated that harness use creates a greater hazard, and that wristlets are the safest and most effective alternate. The other end of the retrieval line must be attached to a mechanical device or fixed point outside the permit space so that rescue efforts may begin as soon as possible. In spaces greater than 5 feet, a mechanical retrieval device (i.e., tripod & hoist) must be utilized.

XII. LABELLING, POSTING & BARRICADING

All openings to **permit required** confined spaces shall be covered to prevent accidental entry and prominently posted/labeled as follows:

DANGER
PERMIT REQUIRED
CONFINED SPACE
DO NOT ENTER

All uncovered openings to **permit required** confined spaces shall be barricaded and prominently posted as above. Warning signs will be constructed in accordance with OSHA 1910.145.

Barricades will be highly visible, 42" tall and capable of withstanding a minimum load of 200 pounds applied in any direction. Additional requirements pertaining to Barricades as outlined in OSHA 1926.500 will be complied with. In addition, Confined Spaces which contain ACM will be barricaded in accordance with Section VIII., **ASBESTOS CONTAINING MATERIALS** in Appendix A.

XIII. EMERGENCY PROCEDURES

All persons should be familiar with procedures for emergency escape and rescuing a disabled individual from a confined space. Life lines must be available at all times and shall not be used for any non-rescue purposes.

Employees working in confined spaces shall have a direct, reliable means of summoning emergency assistance (i.e. intrinsically safe 2 way radio) at all times.

In the event of any potentially life threatening emergency in a **Class A** or **Class B** confined space dial 911. At the emergency blue-light and yellow phones located around campus, press the emergency button to be connected to the University Police who can contact 911 for you, or dial 911 on the key pad to be connected directly to the 911 Center. Give the dispatcher all of the requested information. The Baltimore County Fire Department is the primary rescue team for all **permit required** confined spaces on campus. The TU Police Department will immediately notify EHS of any confined space emergencies (the 911 Center will notify the TU Police Department).

XVII. MEDICAL MONITORING

The DFM shall provide DEHS with a current list of all employees who have the potential to enter any confined space as a requirement of their job.

EHS is responsible for scheduling all medical monitoring. Presently, the only requirement for medical monitoring of employees working in confined spaces pertains to the use of respiratory protection equipment.

Employees who are not qualified to wear respiratory protection equipment are not qualified to work in permit required confined spaces which contain toxic substances/contaminants that cannot be corrected by ventilation or which contain damaged ACM. They may only work in non-permit required (i.e., non-hazardous) confined spaces.

Employees who are exposed to high noise levels while working in confined spaces will be enrolled in the TU Hearing Conservation Program which is coordinated by EHS.

XV. SUPERVISORY REVIEW

Before permitting work in permit required confined spaces, a DFM Supervisor and/or a "Qualified Person" will review with employees the specific guidelines for safe entry and exit. The Supervisor will allow no employee to work in a confined space until they are sure the employee is familiar with all the procedures. It is recommended that Supervisors maintain a log listing the date, time and names of workers present for the review.

XVI. ISOLATION/LOCKOUT/TAGOUT

Prior to entering any confined space, lockout/tag out procedures must be completed as specified in the TU Lockout/Tag Out Policy in Appendix F, **The Control of Hazardous Energy (Lockout/Tag Out)**.

XVII. CLEANING CONFINED SPACES, BOILERS & TANKS

Procedures and processes used by either TU employees or contractors for cleaning Confined Spaces or the inside of storage tanks shall be reviewed and approved by EHS prior to the commencement of any work. The method shall be based on the contents of the space or tank. Initial cleaning shall be done from the outside of the space or tank if possible. **Requests for approval must be provided to EHS at least 48 hours in advance.**

Special procedures shall be adopted to handle the hazards created by the cleaning process itself. For example: If the Confined Space is a tank and it is to be steam cleaned, it should:

1. Be allowed to cool prior to entry;

2. Be ventilated during neutralization procedures to prevent the buildup of toxic materials;

3. Not be steam cleaned if the original contents were liquids with an auto-ignition temperature of 120^{o}F, or less than the temperature of the steam; and

4. Be grounded to the nozzle or pipe to decrease the generation of static electricity that could accumulate in the tank as a result of the steam cleaning process.

XVIII. EQUIPMENT & TOOLS

Any tools or equipment used in a confined space shall be carefully inspected and shall meet the requirements set forth by OSHA Standard 29 CFR 1910.241 thru .246. As a minimum:

1. Matches or other open flame devices shall not be utilized in confined spaces as illumination.

2. Compressed gas cylinders shall not be taken into a **permit required** confined space. They shall be turned off at the cylinder valve when not in use. Cylinders that are a part of a respiratory protection device are exempt from this requirement.

3. All equipment that may be used in a flammable atmosphere shall be approved as explosion proof or intrinsically safe for the atmosphere involved by a recognized testing laboratory such as United Laboratories (UL) or Factory Mutual (FM).

4. Wherever possible, intrinsically safe low voltage (12 volt) lights and power tools will be used in confined spaces. If this is not possible or practicable, approved ground fault interrupters (GFCI) will be utilized on all extension cords and power lines brought into the confined space where water or detectable moisture is present. (National Electric Code, Article 305-6; OSHA 1926.404)

XIX. RECORDKEEPING

A written record of all personnel training, supervisory reviews, environmental testing results and monitoring instrument calibration shall be maintained for three (3) years from the date trained or calibrated. In the event of separation of the employee or disposal of the equipment, records may be disposed of after one (1) year. Records shall be immediately available for inspection at all times.

Where atmospheric testing indicates the presence of a toxic substance, records will be maintained by EHS in accordance with existing Federal and/or State regulations. These records shall include, as a minimum:

1. Date/time/location of measurement
2. Names and duties of employees in the confined space

3. Sampling and analytical methods used
4. Number, duration and results of samples taken
5. Types of personal protective equipment used, if any
6. Other comments as required

XX. CONTRACTORS

When non-university workers are required to enter or work in TU confined spaces, they shall comply with this policy. It shall be the responsibility of the DFM to coordinate with contractor personnel to inform them of TU's Confined Space Entry Procedures, any known hazards, any past experiences with the space, precautions and entry procedures to be followed, and actions to be taken in case of an emergency. The DFM will also ensure contractor personnel comply with these procedures.

The **only exception** to this requirement is if the contractor has their own confined space policy in effect and it has been reviewed and approved by EHS in advance. Any delays in work resulting from non-compliance with this policy shall be the contractors responsibility.
In the event of an emergency which requires rescue, fire or medical assistance, contractor personnel shall dial 911. At the emergency blue-light and yellow phones located around campus, press the emergency button to be connected to the University Police who can contact 911 for you, or dial 911 on the key pad to be connected directly to the 911 Center. Give the dispatcher all of the requested information. For police or other emergencies immediately contact the TU Police Department at x4-4444 from any campus phone. From public phones, dial (410) 704-4444. The TU Police Department will immediately dispatch the required assistance.

APPENDIX A

Entry into Permit Required Confined Spaces

I. Entry Precautions

Entry into a permit required confined space is prohibited until Department of Facilities Management (DFM) and EHS supervisory personnel have been notified. Entry procedures are summarized on the Confined Space Decision Flowchart enclosed as Attachment 1.

II. Confined Space Entry Permit (CSEP)

A CSEP shall be completed by a DFM Supervisor prior to entering any **permit required** confined space and prior to re-entry after two or more hours of non-occupancy. The CSEP is a checklist that will be used to ensure that all precautions have been observed prior to entry. This CSEP will include all considerations for entry, working in and exiting from **permit required** confined spaces. A sample CSEP may be found in Appendix C.

The CSEP shall be posted in a conspicuous place near the portal of entry used for entering the confined space. Where this is not practicable, the CSEP shall be in immediate possession of the on-site Attendant, with the stipulation that the Attendant not enter the confined space.

This CSEP shall be kept on file in the DFM for a minimum of 1 year from the date of issue and shall be made available to EHS or other authorized Federal or State agencies upon request. A copy shall be provided to EHS.

III. Monitoring

Continuous monitoring for combustible gases shall be employed whenever combustible gas levels exceed 10% LFL or if conditions exist which may cause the 10% LFL to be exceeded during employee occupancy of the space. Continuous monitoring for oxygen shall be employed whenever oxygen concentrations are below 19.5% or above 23.5%. If oxygen concentrations are initially acceptable but the possibility of oxygen content falling below 19.5% or rising above 23.5% exists during work in the confined space, continuous monitoring for oxygen shall also be employed. Only approved continuous monitoring equipment shall be employed.

IV. Personal Protective Equipment

Where the oxygen concentration is less than 19.5%, entry will not be permitted except where a self-contained breathing apparatus (SCBA) or airline respirator with escape provisions is used. Entry into a confined space with concentrations of toxic substances exceeding those limits prescribes by OSHA requires the use of respiratory protection. In most cases, this will necessitate the use of air supplied respirators (air-line) or, in the worst case, a pressure-demand, open circuit self-contained breathing apparatus or positive-pressure air-line respirator with escape provisions. Where the concentration of the toxic material is suspected to be low enough to permit respiratory protection with lower protection factors, EHS must be consulted to approve the use of such respirators in each specific case.

Entry into an atmosphere where there exists the potential for explosion and/or fire (concentrations of combustible gases exceeding 10% LEL) will be attempted only by persons equipped with self-contained breathing apparatus only in case of emergency. These persons shall not enter until after all possible precautions have been taken to minimize ignition sources. Firefighting equipment must be immediately available.

All use of respiratory protection shall be in strict accordance with EHS's Respiratory Protection Program.

Retrieval/life lines and full body harnesses will be used by all workers working in **permit required** confined spaces. In spaces greater than 5 feet deep, a mechanical retrieval device (i.e., tripod & hoist) must be utilized. A designated attendant with a means of emergency communication will be present at all times when workers are in the confined space. If the attendant must leave, even momentarily, all workers must leave the confined space. A means of mechanical ventilation that is approved for use in flammable atmospheres will be installed 30 minutes prior to entry to ventilate the space and will be used continuously while the confined space is occupied. If the ventilation system malfunctions, all workers must immediately leave the confined space. All

electrical tools and/or lighting devices used in the confined space will be explosion proof and either be low voltage (12 volts) or connected to a UL listed ground fault interrupter device.

Approved hard hats will be worn when entering all confined spaces. Confined spaces which contain ACM or suspected ACM will only be entered by trained Level II workers wearing "tyvek" (or equivalent) suits and PAPR's. (See Section VIII. Asbestos Containing Materials)

V. Training

All persons working in **permit required** confined spaces shall be trained by DFM supervisory personnel for work in that particular type of confined space by use of practice drills. Work to be performed in the confined space is to be reviewed and practiced outside the space before entry may occur. Included in this review will be practice in all non-verbal communication (hand signals) to be used inside the space as well as review of rescue procedures to be implemented in case of emergency.

A written record of confined space training must be on file for each employee who enters into a Confined space, attends an occupied confined space or supervises workers who enter or function as attendants in confined spaces.

VI. Labeling and Posting

All temporarily open permit required confined spaces must be clearly barricaded to exclude all unauthorized personnel. Attached to the barricade must be signs, clearly visible, which read the following:

DANGER
PERMIT REQUIRED CONFINED SPACE
DO NOT ENTER
TU DEPARTMENT OF FACILITIES MANAGEMENT
(410) 704-2481

VII. Rescue and Emergency Procedures

All employees entering **permit required** confined spaces shall be equipped with a body harness and/or safety belt with life-line. Safety belts may be used as the primary means of suspension for the life line only when rescue may be made by keeping the disabled body in a position which maintain access through exits of the confined space. Wristlets may be used if appropriate. In spaces greater than 5 feet deep, a mechanical retrieval device (i.e., tripod & hoist) must be used.

For all work in **permit required** confined spaces, an attendant must remain outside the space at all times for rescue purposes. This person shall maintain constant contact (visual, or verbal, etc.) with persons working inside the space and must not leave the site even momentarily. They must keep unauthorized entrants out of the permit required confined space. They must notify entrants of any changes in entry conditions which may create a new hazard, or require the entrants to leave the space. Emergency procedures including rescue and evacuation should be considered at the same time that work in **permit required** confined spaces is planned and should be reviewed prior to entry. Additionally, a means of emergency communication must be immediately available to the attendant and the attendant will be trained in how to summon emergency assistance.

In the event of any potentially life threatening emergency in a **Class A** or **Class B** confined space dial 911. At the emergency blue-light and yellow phones located around campus, press the emergency button to be connected to the University Police who can contact 911 for you, or dial 911 on the key pad to be connected directly to the 911 Center. Give the dispatcher all of the requested information. The Baltimore County Fire Department is the primary rescue team for all **permit required** confined spaces on campus. The TU Police Department will immediately notify EHS of any confined space emergencies (the 911 Center will notify the TU Police Department).

VIII. Asbestos Containing Materials

No areas with "damaged" (<10% localized or <25% total area) or "significantly damaged" (>10% localized or >25% total area) asbestos containing materials (ACM), **other than steam manholes/tunnels**, shall be ventilated until the damaged ACM is abated (removed or repaired).

For steam manholes where the ACM is either "damaged" or "significantly damaged" a barricade shall be erected at least 15 feet away in all directions around the manhole and/or other openings to prevent accidental entry by non-Level II personnel.

Appropriate personal protective equipment must be worn within the barricaded work area as specified in the State of Maryland Asbestos Safety and Health Program Policy & Procedures Manual (ASHPPM) until such time as the ACM is either removed and/or repaired. Copies of the ASHPPM are available for review in EHS.

If other toxic contaminants/substances are present in the damaged ACM containing workspace above allowable concentrations supplied air respirators must be worn.

IX. Other Requirements

Despite the assumption that a **permit required** confined space is hazardous because ventilation cannot correct the hazardous condition, every attempt to reduce the hazard by mechanical ventilation must be made. In this way, concentrations of explosive or toxic materials may be reduced to their lowest feasible level prior to entry. Entry into confined spaces with combustible gas or vapor concentrations in excess of 25% of the LFL is prohibited, except by trained and experienced emergency response personnel.

Appendix B

Sample Hot Works Permit

Hot Works Permit

PERMIT #:_____

Section 1:

Project Start Date:__/_____/_____ **Estimated Completion Date:**___/_____/_____

Start Time:_____**AM/PM** **Stop Time:**_____**AM/PM**

Building:_____ **Room #/Floor:**_____

Work To Be Accomplished:_____

Section 2:

I certify that I will personally inspect the job site daily to ensure that Items 1 through 6 below have been completed and that arrangements for Item 7 have been made. I will immediately contact TU's Environmental Health & Safety at (410) 704-2949 of any unsafe job site work conditions.

Signed:_____**Project Manager/Job Foreman Date:**_____

Section 3:

DO NOT CUT, WELD, SOLDER, GRIND OR USE ANY OTHER FLAME OR SPARK PRODUCING EQUIPMENT UNTIL THE FOLLOWING PRECAUTIONS HAVE BEEN TAKEN.

CHECK EACH ITEM:

_____***1. a.*** ***Floors and surrounding areas are swept clear of all combustible materials.***

b. ***Materials that are combustible and can't be moved are covered with a non-combustible fire retardant cover or are thoroughly wetted down with water.***

c. ***All wall or floor openings and other holes within 35 feet are tightly covered. Covers are suspended beneath overhead work to catch sparks, hot slag, etc.***

d. ***A responsible fire watch has been assigned to watch for sparks & fires in the work area as well as on the floors above and below.***

_____***2.*** ***A serviceable dry chemical fire extinguisher is on site, immediately accessible, and employees are trained with its use and limitations. employees are trained with procedures for sounding TU fire alarm.***

_____***3.*** ***All flame or spark producing equipment has been inspected and is in good repair.***

_____***4.*** ***The fire sprinkler system, where present, is in service and fully operational.***

_____***5.*** ***Appropriate arrangements have been made with TU's EH&S to prevent the accidental initiation of fire detection and alarm systems.***

_____***6.*** ***There are no flammable liquids, vapors, dusts, lints or equipment previously containing such materials in the work area.***

_____***7.*** ***A responsible fire watch will remain at the job site for 60 minutes after the completion of any hot work to ensure no smoldering fires are present.***

IN CASE OF FIRE OR EMERGENCY – IMMEDIATELY CALL 911

Section 4:

Approved:_____**Date:**_____

TU Environmental Health & Safety

Section 5:

Permit Closeout

Job Completed at_____AM/PM on _____/_____/_____. Signed:_____

(Time) (Date) (Project Manager/Job Foreman)

TOP COPY – Display At Job Site & Return to EHS upon Job Completion **BOTTOM COPY – EHS**

06/12

Appendix C

SAMPLE Confined Space Entry Permit

CONFINED SPACE ENTRY PERMIT

GENERAL INFORMATION

Permit No.

Space to be Entered: _____

Purpose of Entry: _____

Location/Building: _____

Authorized Duration of Permit: Date: _____ to _____

Time: _____ to _____

PERMIT SPACE HAZARDS (Indicate specific hazards with initials.)

_____ **Oxygen deficiency** (less than 19.5%)
_____ **Oxygen enrichment** (greater than 23.5%)
_____ **Flammable gases or vapors** (greater than 10% of LFL)
_____ **Airborne combustible dust** (meets or exceeds LFL)
_____ **Toxic gases or vapors** (greater than PEL)
_____ **Mechanical hazards**
_____ **Electrical shock**
_____ **Materials harmful to skin**
_____ **Engulfment**
_____ **Other:** _____

PREPARATION FOR ENTRY (Check after steps have been taken.)

❑ **Notification** of affected departments of service interruption.
❑ **Isolation Methods:** ❑ Lockout/tagout ❑ Blank/blind
❑ Purge/clean ❑ Inert ❑ Ventilate
❑ Atmospheric test ❑ Barriers ❑ Other: _____
❑ **Personnel Awareness:**
❑ Pre-entry briefing on specific hazards and control methods
❑ Notify contractors of permit and hazard conditions
❑ Other: _____
❑ **Additional permits** required and/or attached:
❑ Hotwork ❑ Line breaking ❑ Other: _____

EMERGENCY SERVICE

Name of Service	Phone Number	Method of Contact

EQUIPMENT REQUIRED FOR ENTRY AND WORK

Specify as required:

Personal Protective Equipment: _____

Respiratory Protection: _____

Atmospheric Testing/Monitoring: _____

Communication: _____

Rescue Equipment: _____

Other: _____

COMMUNICATION PROCEDURES

To be used by attendants and entrants:

AUTHORIZED ENTRANTS (List by name or attach roster.)

AUTHORIZED ATTENDANTS (List by name.)

TESTING RECORD

Time	Acceptable Conditions	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM	Result : AM/PM
Oxygen-min.	> 19.5%							
Oxygen-max.	< 23.5%							
Flammability	< 10% LEL/LFL							
H_2S	< 10 ppm							
Toxic (specify)								
Cl_2	< 0.5 ppm							
CO	< 35 ppm							
SO_2	< 2 ppm							
Heat	°F/°C							
Other								
Tester Initials								

AUTHORIZATION BY ENTRY SUPERVISORS

I certify that all required precautions have been taken and necessary equipment is provided for safe entry and work in this confined space.

Printed Name	Signature	Date	Time

THIS PERMIT MUST BE POSTED ON JOB SITE · GOOD ONLY ON INDICATED DATE

Appendix D

State of Maryland Confined Space Regulations - COMAR 09.12.35

Links:

http://www.dsd.state.md.us/comar/09/09.12.35.01.htm
http://www.dsd.state.md.us/comar/09/09.12.35.02.htm
http://www.dsd.state.md.us/comar/09/09.12.35.03.htm
http://www.dsd.state.md.us/comar/09/09.12.35.04.htm
http://www.dsd.state.md.us/comar/09/09.12.35.05.htm
http://www.dsd.state.md.us/comar/09/09.12.35.9999.htm

Appendix E

Federal Confined Space Regulations – OSHA 29 CFR 1910.146

Link:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9797&p_text_version=FALSE

Appendix F

Safety Requirements for Confined Spaces – ANSI Z117.1-1989

Note: This document available in paper form only. Not available online.

Appendix G

Steam Tunnel Entry Procedures

Steam Tunnel Entry Procedures

I. Alternate Plan for Entry into Steam Tunnels

The following alternative plan developed by EHS is being included to illustrate how Towson University is addressing the steam distribution tunnel system. Departments with similar situations may be able to use this as a guide to develop alternative procedures for their areas.

Alternative procedures must include justification for the plan, entry procedures, emergency procedures, and monitoring and inspection data to support their use. EHS will assist with the development of alternative procedures as necessary.

Justification: The Towson University steam distribution tunnel system presents a unique situation in regards to confined space entry procedures and compliance with 29 CFR 1910.146.

The steam tunnel system falls within a regulatory gray area. It is difficult to define the entire system as a confined space; and it is equally difficult to identify specific areas or passages as confined spaces. Furthermore, and more importantly, normal confined space entry procedures are both impractical and do little to protect the health and safety of employees entering the steam tunnel system.

Significant factors that were identified and evaluated in the development of this alternate plan include:

1. The steam tunnel system is a controlled access work area. Authorization is required to enter the steam tunnel system. Specific steam tunnel entry procedures have been developed and implemented.

2. A considerable portion of the main tunnel system is designed for employees to enter through building equipment room doors, walk through the tunnel passages and perform equipment maintenance.

3. Two means of egress (through doors or manholes) exist in the main tunnel system except for blind ends.

4. Identifying areas within the tunnels that truly meet the criteria of a confined space as defined in 29 CFR 1910.146 (b) would be difficult and confusing.

5. There is little possibility for a hazardous atmosphere as defined in 29 CFR 1910.146 (b) to develop under normal operating conditions.

6. Although means of egress are restricted or limited, entrapment hazards as defined in 29 CFR 1910.146 (b) do not exist in the main steam tunnel system.

7. Under normal operating conditions, engulfment hazards as defined in 29 CFR 1910.146 (b) do not exist in the steam tunnel system.

8. Other serious hazards (exposed electrical conductors, moving machinery or lines that discharge hazardous materials in the space) as defined in 29 CFR 1910.146 (b) do not exist in the main steam tunnel system under normal operating conditions.

9. Normal confined space entry procedures (the use of an attendant, retrieval equipment and air monitoring devices) are not practical and do not protect employees, in fact, they may hinder self-rescue, from the most significant potential hazard, a steam line rupture.

10. The use of the "buddy system" and requiring all entrants to carry two-way radios is a more effective method to protect employee health and safety.

After carefully considering all factors involved, and soliciting employee input, EHS has adopted the following alternate plan to protect the health and safety of employees entering the steam distribution tunnel

system.

II. Pre-Planning for Work in Steam Tunnels

1. The Chief Engineer of the Power Plant shall be notified prior to the entry of any individual into the steam tunnel system.

2. The Chief Engineer of the Power Plant shall be included in the work pre-planning of non-Power Plant employees.

3. EHS shall be notified prior to the entry of any individual into the steam tunnel system.

4. EHS shall be included in the work pre-planning of all employees entering the tunnel system.

5. Prior to entering steam tunnels, the supervisor and workers shall discuss the scope and sequence of the work.

6. Pre-planning shall include a discussion of all potential hazards, means and methods of hazard control and emergency pre-plans:

    a. Identities and locations of energized steam lines
    b. Identities and locations of energized compressed air lines
    c. Identities and locations of energized high-voltage electrical conductors
    d. Identities and known locations of asbestos containing thermal insulting material (TSI) such as pipe fittings or insulation.
    e. Locations of exposed hot surfaces
    f. Signs and symptoms of heat exhaustion and heat stroke
    g. Lighting
    h. Means of communication
    i. Means of entry and egress
    j. Hazards created by work activity (chemical products and welding/cutting)
    k. External hazards (work in roadways, walkways)
    l. Identities of any job-site specific hazards
    m. Means to control hazards (personal protective equipment, ventilation/local exhaust, lockout/tagout)
    n. Steam line de-energization and lockout procedures
    o. Potential emergency situations and pre-plans

7. The locations of entry and egress from potentially dangerous work conditions will be identified to all personnel working in the tunnel. When deemed appropriate and prudent, multiple accesses shall be opened to provide alternative means of egress.

8. The "buddy system" will be used by employees entering the steam tunnel system.

9. All employees entering the steam tunnel should be CPR certified and must be confined space certified. The company’s specific Confined Space Program and training records will be forwarded to EHS for review.

10. Employees working in the tunnel system shall carry a portable flashlight and two-way radio at all times. (Ensure they have direct communication to the outside (i.e. radio to someone on top or cell phone) and ensure the radios receive a signal and operate properly in the tunnel before entry and work begins.)

11. Someone shall notify the Towson University Police Department (TUPD) that employees will be working in the tunnel over the weekend in case something happens - that way the TUPD can be prepared if an emergency arises.

12. Protective leather gloves and hard hats shall be worn when working in steam tunnels.

13. Other items of personal protective equipment, required to control job-specific hazards, shall be identified in job planning and worn by all personnel.

14. Supervisor and workers shall discuss job-specific emergency procedures.

15. Hot work (welding, cutting, brazing) requires authorization by the Department of Environmental Health & Safety. When hot work is performed, forced ventilation shall be provided and the atmosphere shall be monitored for flammable gases, oxygen content and carbon monoxide. Standard size welding gas cylinders shall not be taken into steam tunnels.

III. Procedures for Steam Tunnel Emergencies

1. If an acute threat to safety and health is observed or perceived, all personnel shall immediately exit the tunnel by the nearest means of egress.

    a. Assist injured in escape
    b. Do not re-enter tunnel until hazard is identified and evaluated
    c. Secure jobsite
    d. Contact supervisor/manager

2. If emergency assistance is required, use either the nearest telephone to call 911 or contact the TUPD (i.e. "Towson") on the two-way radio to summon emergency assistance. Clearly state to the dispatcher that it is an emergency and provide the following information:

    a. Location of the emergency
    b. Telephone number from where the call is being made (if telephone is used)
    c. Your name
    d. What happened
    e. What assistance is needed
    f. Help or first aid that is being provided

    If a telephone is used, let the person you contacted hang up first.

3. Station someone at a highly visible location along the street to flag down and direct the emergency response vehicle to the scene of the emergency.

4. If required, render appropriate and prudent first aid until EMS personnel arrive on scene.

Appendix H

Storm Water
And
Underground Stream Diversion Culverts

Welcome to Towson University

A parking permit is required

To park anywhere on campus (except at metered spaces)
from 6 a.m. – 8 p.m. Monday – Thursday and 6 a.m. – 3 p.m. Friday.

Please note: University Village parking permits are not valid on campus, and TU parking permits are not valid for parking at the Towson University Marriott Conference Hotel.

University Admissions is located in 7800 York Road (YR), suite 216.

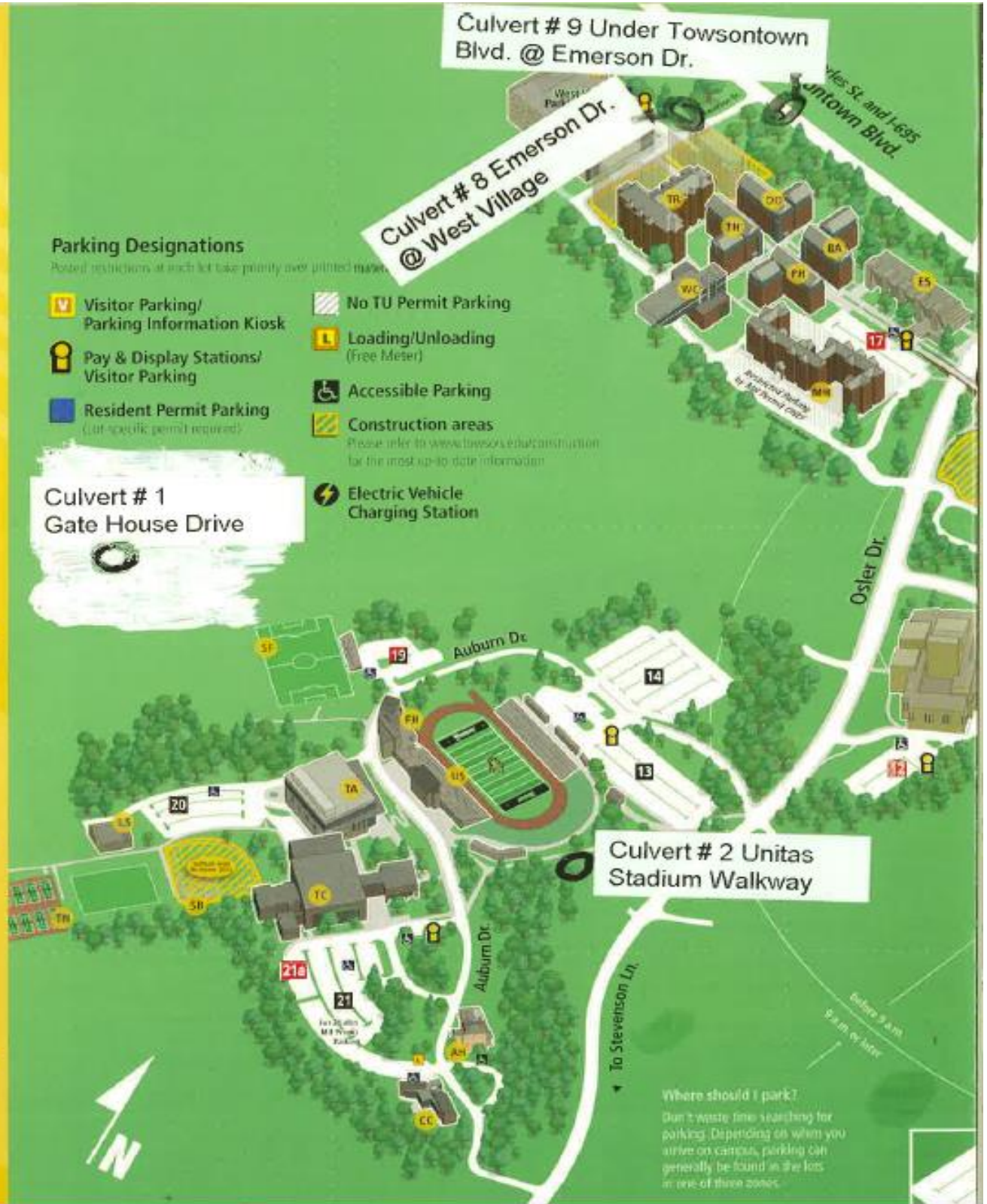
Parking for campus tours is in the visitor section of the West Village Parking Garage. Tours begin at the West Village Commons (WC) Building.

Academic and Administrative Buildings

AD Administration Building - E6
AH Auburn House - E2
BU Burdick Hall - B5
CA Center for the Arts - C4
CC Child Care Center - E2
CK Cook Library - D7
ES Enrollment Services Center - A4
FH Field House - C2
GS General Services - A5
HH Hawkins Hall - C6
LH Lecture Hall - C6
LA College of Liberal Arts - C6
LI Linthicum Hall - C7
LS Landscape Services - D1
MC Media Center - D7
OP Towson City Center - E8
(One Olympic Plaza – leased space)
PP Power Plant - C7
PS Public Safety - B6
PY Psychology Building - C6
SA Stephens Annex - D7
SB Softball Field - D1
SF Soccer Field - C1
SM Smith Hall - C6
SP Schuetholz Park - B5
ST Stephens Hall - D7
TA SECU Arena - D1
TC Towson Center - D2
TD Terrace Dale - E7
(leased space)
TM Towson University Marriott Conference Hotel - C8
TN Tennis Courts - D1
US Johnny Unitas® Stadium - D2
UU University Union - C5
VH Van Bokkelen Hall - D6
WC West Village Commons - A3
WW Health and Counseling Centers at Ward & West - C7
YR 7800 York Road - E6
Y2 7400 York Road - E4

Residence Buildings

AT Glen Complex (A Building) - C5
BA Barton House - A4
BT Glen Complex (B Building) - C5
CT Glen Complex (C Building) - D5
DO Douglass House - A3
DT Glen Complex (D Building) - D5
GD Glen Dining Hall - C5
MH Millennium Hall - B4
NE Newell Hall - D7
ND Newell Dining Hall - D7
PH Paca House - A4
PR Prettyman Hall - D8
RT Residence Tower - C7
RI Richmond Hall - D7
SC Scarborough Hall - D8
TH Tubman House - A3
TR Towson Run Apartments - A3



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- **FH Field House - C2**
- GS General Services - A5
- HH Hawkins Hall - C6
- LH Lecture Hall - C6
- LA College of Liberal Arts - C6
- LI Linthicum Hall - C7
- LS Landscape Services - D1
- MC Media Center - D7
- OP Towson City Center - E8 (One Olympic Place – leased space)
- PP Power Plant - C7
- PS Public Safety - B6
- PY Psychology Building - C6
- SA Stephens Annex - D7
- SB Softball Field - D1
- SF Soccer Field - C1
- SM Smith Hall - C6
- SP Schuerholz Park - B5
- ST Stephens Hall - D7
- TA SECU Arena - D1
- TC Towson Center - D2
- TD Terrace Dale - E7 (leased space)
- TM Towson University Marriott Conference Hotel - C8
- TN Tennis Courts - D1
- US Johnny Unitas® Stadium - D2
- UU University Union - C5
- VB Van Bokkelen Hall - D6
- WC West Village Commons - A3
- WW Health and Counseling Centers at Ward & West - C7
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- Y2 7400 York Road - E4

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- MH Millennium Hall - B4
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- ND Newell Dining Hall - D7
- PH Paca House - A4
- PR Prettyman Hall - D8
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- RI Richmond Hall - D7
- SC Scarborough Hall - D8
- TH Tubman House - A3
- TR Towson Run Apartments - A3