

# **CONFINED SPACE ENTRY PROGRAM**

## **COUNTY COLLEGE OF MORRIS (CCM)**

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## Table of Contents

1.0	PURPOSE .....	1
2.0	SCOPE .....	1
3.0	DEFINITIONS.....	1
4.0	RESPONSIBILITIES .....	4
5.0	ASSESSMENT OF CONFINED SPACES .....	4
5.1	Reclassification of Permit-Required Confined Spaces .....	5
6.0	PROCEDURES.....	5
6.1	Permit Procedure .....	5
6.2	Entry Permit System.....	5
6.2.1	Special Entry Permit for Duration of Job .....	6
6.2.2	Pre-Entry Procedures .....	6
6.3	Evaluation of Confined Space Atmospheric Conditions.....	7
6.3.1	Initial Testing of Atmospheric Conditions .....	7
6.3.2	Periodic Testing of Atmospheric Conditions.....	8
6.3.3	Entry into Confined Spaces Having Unacceptable Environmental Conditions.....	9
6.4	Work Activities in Permit-Required Confined Spaces .....	9
6.5	Duties of the Entry Supervisor .....	10
6.6	Duties of the Attendant .....	10
6.7	Duties of Entrants.....	11
7.0	TRAINING .....	11
8.0	RESCUE AND EMERGENCY SERVICES.....	12
9.0	EMERGENCY PROCEDURES.....	13
9.1	Non-Entry Rescue .....	13
10.0	ENTRY OPERATIONS BY MORE THAN ONE EMPLOYER .....	14
11.0	WORKING WITH CONTRACTORS .....	14
12.0	CONCLUDING ENTRY OPERATIONS.....	16
12.1	Reviewing Entry Operation .....	16
13.0	REVIEW OF THE PERMIT-REQUIRED CONFINED SPACE PROGRAM .....	16
	APPENDIX A – Permit Required Confined Spaces at CCM.....	17
	APPENDIX B - CCM Confined Space Assessments .....	27
	APPENDIX C - Sample Entry Permit .....	33
	APPENDIX D – Sample Hot-Work Permit.....	36
	APPENDIX E – Emergency Telephone Numbers.....	38

# County of Morris NJ

## Confined Space Entry Program

### 1.0 PURPOSE

This program identifies and assesses the hazards associated with confined spaces and permit-required confined spaces at the County College of Morris (CCM).

This program establishes the minimum requirements, including a permit system, for safe entry and work in permit-required confined spaces in accordance with the requirements of The Occupational Safety and Health Administration (OSHA) Permit-Required Confined Spaces Standard for General Industry (29 CFR 1910.146), and Confined Space Standard in Construction (29 CFR 1926 Subpart AA), as adopted by NJSA 34:6A-30(a).

This program also identifies requirements for contractors who enter permit-required spaces within CCM facilities.

### 2.0 SCOPE

This program will apply to all external support personnel (i.e., contractors) who are required to enter, attend, or conduct air sampling in any permit-required confined space within the CCM campus.

CCM employees will not enter nor perform work in permit required confined spaces, unless the spaces are able to be reclassified in accordance with Section 5.1.

CCM will hire contractors with adequate training, knowledge and experience to perform all aspects of permit required confined space work.

### 3.0 DEFINITIONS

As part of the final Permit-Required Confined Spaces Standard, OSHA has defined certain terms that are crucial to understanding the Standard. The following are just a few of the key terms, along with their definitions, that will help to understand this Confined Space Entry Program.

**Acceptable Entry Conditions** are the conditions that must exist in a permit-required space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

**Attendant** is an individual stationed outside one or more permit-required spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit-required space program.

**Authorized Entrant** is an employee who is authorized by the employer to enter a permit-required space.

# CCM

## Confined Space Entry Plan

**Confined Space** is a space that:

1. Is large enough and so configured that an employee can enter and perform assigned work;
2. Has limited or restricted means for entry or exit (for example tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited entry); and
3. Is not designed for continuous employee occupancy.

**Engulfment** is the surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance.

**Entry** is the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

**Entry Permit (permit)** is the written or printed document that is provided by the employer to allow and control entry into a permit-required space.

**Entry Supervisor** is the person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present in a permit-required space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

**Hazardous Atmosphere** is an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

1. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
2. Airborne combustible dust at a concentration that meets or exceeds its LFL (vision obscured at 5 feet or less);
3. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
4. Atmospheric concentration of any substance which exceeds OSHA's Permissible Exposure Limit (PEL); and
5. Any other atmospheric condition that is immediately dangerous to life or health (IDLH).

**Hot-Work Permit** is the employer's written authorization to perform operations (i.e., riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

**Immediately Dangerous to Life or Health (IDLH)** is any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit-required space.

# CCM

## Confined Space Entry Plan

**Isolation** is the process by which a permit-required space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes or ducts; a double block or bleed system; lock-out or tag-out of all sources of energy; or blocking or disconnecting all mechanical linkages.

**Non Permit-Confined Space** is a confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

**Oxygen Deficient Atmosphere** is an atmosphere containing less than 19.5 percent oxygen by volume.

**Oxygen Enriched Atmosphere** is an atmosphere containing more than 23.5 percent oxygen by volume.

**Permit-Required Confined Space (or permit-required space)** is a confined space that has one or more of the following characteristics:

1. Contains or has potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing 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; or
4. Contains any other recognized serious safety or health hazard.

(See **Appendix A** for a list of identified confined spaces)

**Permit-Required Confined Space Program** is the employer's overall program for controlling, and, where appropriate, for protecting employees from permit-required space hazards and for regulating employee entry into permit-required spaces.

**Permit System** is the employer's written procedure for preparing and issuing permits for entry and for returning the permit-required space to service following termination of entry.

**Prohibited Condition** is any condition in a permit-required space that is not allowed by the permit during the period when entry is authorized.

**Rescue Services** are the personnel designated to rescue employees from permit-required spaces.

**Retrieval System** is the 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 permit-required spaces.

**Testing** is the process by which the hazards that may confront entrants of a permit-required space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit-required space.

# CCM

## Confined Space Entry Plan

### 4.0 RESPONSIBILITIES

**Risk Management** for the County of Morris is responsible for the compliance of this written Confined Space Entry Program with applicable standards and evaluating implementation at the facility, including completion of assessments, audits, and providing worker training.

**The Compliance Officer** is responsible for compliance with the written Confined Space Entry Program, and coordinating required awareness training.

**Department Managers/Supervisors** shall assist the Compliance Officer in implementing the Confined Space Entry Program, and ensuring that employees attend awareness training. Department Managers/Supervisors are responsible for informing contractors of the existence of permit required confined spaces, ensuring the contractor completes a hazard assessment prior to entry, and ensuring the contractor has the proper training and equipment to safely enter permit-required confined spaces.

**Department Employees** shall attend awareness training as scheduled and shall not enter permit required confined spaces unless the spaces can be reclassified as outlined in Section 5.1.

### 5.0 ASSESSMENT OF CONFINED SPACES

Appendix A of this Program identifies confined spaces at CCM. CCM has designated many of the confined spaces as “permit-required” either through knowledge of the configuration and hazards of the space, or as a safety measure for those spaces CCM has not opened for evaluation. CCM informs all potentially exposed employees, by posting danger signs or by any other equally effective means (e.g. Confined Space awareness training and Appendices A and B), of the existence, location of, and the danger posed by permit-required spaces.

Some assessments are included in Appendix B of this Program, and include the following:

- The location and/or description;
- designation as a confined space or permit space;
- location of entry points;
- a list of hazards;
- a list of controls for each hazard for reclassification, if applicable;
- ventilation requirements;
- PPE requirements.

Contractors will be required to complete assessments for those permit-required spaces for which assessments are not available in Appendix B prior to scheduling entry or work within the permit-required spaces.

# CCM

## Confined Space Entry Plan

### 5.1 Reclassification of Permit-Required Confined Spaces

Permit required confined spaces may be reclassified to allow for work without the requirement of a permit under the following conditions:

- The Confined Space Assessment allows for reclassification;
- There is no actual or potential for an atmospheric hazard; (control of atmospheric hazards through forced air ventilation does not constitute elimination)
- All hazards are eliminated and controlled without requiring entry into the space;
- Activities in the space do not create or introduce a hazard (i.e. hot work)
- The reclassification is authorized by the Compliance Officer, or designee in their absence.

## 6.0 PROCEDURES

No person is permitted to enter a permit-required confined space unless a confined space entry permit has been completed and signed by a qualified Entry Supervisor.

### 6.1 Permit Procedure

The Entry Supervisor shall be responsible for completing a confined space entry permit. The entry permit will specify acceptable entry conditions for each permit-required space in CCM.

The Entry Supervisor must ensure that the atmospheric conditions are acceptable in accordance with the entry permit, follow the pre-entry isolation procedures required by the entry permit, and ensure that the protective clothing, ventilation equipment, and any other equipment required by the permit are available at the entry site (see **Appendix C for an example of an entry permit**).

### 6.2 Entry Permit System

Before entry into permit-required confined spaces, the Entry Supervisor shall document the completion of the measures required for entry. The Entry Supervisor identified on the permit shall sign the entry permit to authorize entry.

The completed permit shall be made available at the time of entry to all authorized entrants, by posting it at the entry portal so that the entrants can confirm that pre-entry preparations have been completed.

The Entry Supervisor shall terminate entry and cancel the entry permit when the entry operations specified in the permit have been completed, or when unacceptable conditions not specified on the entry permit arise in or near the space.

# CCM

## Confined Space Entry Plan

The duration of entry permits shall not exceed a single continuous shift as specified on the actual permit, unless a special entry permit is issued for the duration of the job.

### 6.2.1 Special Entry Permit for Duration of Job

The procedures described in this section are for the special entry permit for the duration of the job. These procedures are applicable only for the restricted circumstances and conditions described below.

Any entry permit for the duration of the job may be issued and used for the duration of a job (i.e., boiler cleanout) provided that:

1. Conditions in the permit-required space have no known potential for presenting either an immediately dangerous to life or health atmosphere or an engulfing condition;
2. Inspection of the permit-required space and atmospheric testing, performed at least at the beginning of each work shift, confirms that acceptable conditions for entry exist, and that the periodic atmospheric testing conducted during the course of the work shift, as specified in the permit, also confirms that conditions remain acceptable as work progresses;
3. Only operations, processes, or procedures that are specifically authorized by the permit, and which could not increase or be the source of a hazard to employees, are used in the confined space;
4. Any process or procedure, such as welding, which is not addressed by the original permit shall not be conducted until the employer either issues a new entry permit or appends a special purpose permit to the original permit; and
5. All employees shall be immediately withdrawn from the permit-required space and the special permits shall be void if: atmospheric testing or inspection indicates that a non-permitted condition exists, or that conditions outside the permit-required space could pose a hazard to entrants. The employer shall correct the hazardous condition before a new special permit may be issued.

### 6.2.2 Pre-Entry Procedures

Prior to entry into any confined space the Entry Supervisor shall:

1. Complete sections A and B of the entry permit (Appendix C).
2. If a non permit-required space and atmospheric conditions are acceptable, space may be entered.
3. If a permit-required space, the Supervisor will complete the rest of the permit.
  1. Ensure that the confined space is isolated and locked out/tagged out in accordance with



# CCM

## Confined Space Entry Plan

OSHA's Control of Hazardous Energy (Lock-out/Tag-out) Standard (29 CFR 1910.147).

2. Ensure that no significant pressure differential exists across the opening, no dangerous spillage occurs, and no harm to personnel occurs when the confined space is opened.
3. When entrance covers are removed, the opening shall be promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that will protect each employee when working in the space from foreign objects entering the space.
4. Ensure that emergency communication equipment or personnel are readily available for the attendant.
5. Ensure that all requirements identified in Part C of the entry permit are implemented prior to the initial atmospheric testing of the space.
6. Implement atmospheric testing and monitoring procedures in accordance with Part C of the entry permit.

### 6.3 Evaluation of Confined Space Atmospheric Conditions

The following procedures will be followed to evaluate atmospheric conditions in all confined spaces before entry operations are conducted:

Test conditions in the confined space to determine if acceptable entry conditions exist before entry is authorized to begin, and before ventilation equipment is installed, except that, if isolation of the space is infeasible because the space is large or part of a continuous system (such as sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions shall be continuously monitored in the areas where authorized entrants are working.

Test and monitor the space as necessary (continuously) to determine if acceptable entry conditions are being maintained during the course of entry operations. See procedures for testing and monitoring of atmospheric conditions in confined spaces below.

When testing for atmospheric hazards, first test for oxygen, then for combustible gases and vapors, and then for toxic gases or vapors.

#### 6.3.1 Initial Testing of Atmospheric Conditions

1. Air sampling shall be performed by a qualified individual.
2. All appropriate procedures shall be followed when using air sampling equipment.
3. Air sampling shall be performed so as to obtain a representative sample of the space. This may be accomplished by using an approved extension hose or probe to obtain samples from the

# CCM

## Confined Space Entry Plan

various levels/areas of the space.

4. If entry is required to obtain a representative sample, the entry must not be made by employees of CCM.
5. The date, time, instrument number, air quality sample results, and initials of the individual conducting sampling shall be recorded in the appropriate boxes on the entry permit (Part C).
6. If all conditions are acceptable based on the limits specified on the entry permit, the “Yes” box should be checked under the “Acceptable Environmental Conditions” section of the entry permit.
7. If all conditions are not acceptable based on the limits specified on the entry permit, the “No” box should be checked under the “Acceptable Environment Conditions” section of the entry permit.
8. If the “No” box has been checked under the “Acceptable Environmental Conditions” section of the entry permit, the following steps shall be taken:
  - Notify the Entry Supervisor of the monitoring results.
  - An attendant shall be posted at the opening of the space to prevent unauthorized entry. If no attendant is available, a sign shall be posted with the following warning, “Danger--Do Not Enter--Unacceptable Atmosphere”.
  - If air sample results showed unacceptable flammability hazards, a sign shall also be posted with the following warning, “Danger--No Open Flames, Sparks, or Spark-Generating Equipment within 50 feet”.
  - If the space must be purged and ventilated, the Supervisor must ensure that the requirements for ventilation of confined spaces are met (see “Work Activities in Confined Spaces”).
9. When air sampling meets acceptable entry conditions, the Supervisor shall post a copy of the permit at the opening of the space, and provide a copy of the permit to the entry attendant.

### 6.3.2 Periodic Testing of Atmospheric Conditions

Upon initial entry into a permit-required space, atmospheric conditions must be continuously monitored to ensure acceptable conditions.

Procedures for periodic/continuous testing of the atmospheric conditions in confined spaces include the following:

1. Continuous air monitoring will be performed until completion of any confined space entry.
2. The continuous monitoring results shall be recorded on the entry permit at the intervals specified on the permit.
3. If at any time continuous monitoring results exceed the acceptable environmental conditions specified on the entry permit, the Supervisor or attendant shall instruct all entrants to exit the space immediately.

# CCM

## Confined Space Entry Plan

### 6.3.3 Entry into Confined Spaces Having Unacceptable Environmental Conditions

Employees will not enter permit-required confined spaces which exhibit unacceptable environmental conditions. The entry permit shall determine acceptable entry conditions for each specific permit-required space.

If conditions in a permit-required space change during entry operations and conditions become unacceptable in accordance with the entry permit, entrants will be ordered to exit the space immediately. The cause of the unacceptable environmental conditions will then be determined by the Entry Supervisor, and the procedures outlined in the plan for “reviewing entry operations” will be utilized.

### 6.4 Work Activities in Permit-Required Confined Spaces

1. The Entry Supervisor shall ensure that the entry permit is posted at the opening of the permit-required confined space.
2. Prior to entry into a confined space, the attendant and all entrants shall read all sections of the permit.
3. The attendant and all entrants shall verify that the requirements identified in Parts B & C of the permit have been implemented.
4. The attendant and all entrants shall ensure that the air quality has been tested within the periods specified on the permit and that the “Yes” box under “Acceptable Environmental Conditions” has been checked. There shall be no hazardous atmosphere within the space whenever employees are in the space.
5. Hot-work will be performed in confined spaces only upon completion of a Hot-Work Permit
6. When electric power tools or equipment are used in confined spaces, the following guidelines apply:
  - Electric power tools or equipment shall not be used in a potentially flammable atmosphere unless approved for such use.
  - Electric power tools shall not be used in wet confined spaces unless equipped with a ground-fault circuit interrupter (GFCI).
7. When ventilation is required in permit-required spaces, the following requirements will be followed:
  - Continuous forced air ventilation shall be used until the forced air ventilation has removed any hazardous atmosphere.
  - The forced air ventilation shall be so directed as to ventilate the immediate area where an employee is or may be present within the space and shall continue until all employees have left the space.
  - The air supply for the forced air ventilation shall be from a clean source and may not increase hazards in the space.

# CCM

## Confined Space Entry Plan

### 6.5 Duties of the Entry Supervisor

Each Entry Supervisor shall:

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
2. Verify, by making sure that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.
3. Terminate the entry and cancel the permits in accordance with the requirements of this program.
4. Verify that rescue services are available and that the means for summoning them are operable.
5. Remove unauthorized individuals who enter or who attempt to enter the permit-required space during entry operations.
6. Determine, whenever responsibility for a permit-required space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

### 6.6 Duties of the Attendant

At least one attendant shall remain outside the permit-required space into which entry is authorized for the duration of entry operations. There shall be a minimum of one attendant provided for each permitted entry operation, and an attendant may only monitor one permit-required space at a time.

The attendant shall also:

1. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure.
2. Be aware of the possible behavioral effects of hazard exposure in authorized entrants.
3. Continuously maintain an accurate count of authorized entrants in the permit-required space.
4. Maintain constant communication with the entrant(s) through visual, verbal, signal, or other equivalent means.
5. Remain outside the confined space at all times unless replaced by another authorized attendant.
6. Monitor activities inside and outside of the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit-required space immediately under any of the following conditions:
  - If the attendant detects a prohibited condition;
  - If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;
  - If the attendant detects a situation outside of the space that could endanger an authorized entrant, or;
  - If the attendant cannot effectively and safely perform all of the duties required by this program.

# CCM

## Confined Space Entry Plan

7. Summon Rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit-required space hazards.
8. Take the following precautions when unauthorized persons approach or enter a permit-required space while entry is underway:
  - Warn the unauthorized persons that they must stay away from the permit-required space;
  - Advise the unauthorized persons that they must exit immediately if they have entered the permit-required space; and
  - Inform the authorized entrants and the Entry Supervisor if unauthorized persons have entered the space.
9. Perform non-entry rescue as specified by established rescue procedures.
10. Perform no other duties that may interfere with the attendant's primary duty to monitor and protect the authorized entrants.

### 6.7 Duties of Entrants

In addition to the requirements for attendants and entrants outlined in "Work Activities in Permit-Required Confined Spaces", entrants shall:

1. Know the hazard that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure.
2. Properly use all required equipment.
3. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to alert entrants of the need to evacuate the space.
4. Alert the attendant whenever:
  - The entrant recognizes any warning signs or symptoms of exposure to a dangerous situation; or
  - The entrant detects a prohibited condition.
5. Exit from the permit-required space as quickly as possible whenever:
  - An order to evacuate is given by the attendant or the Entry Supervisor;
  - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
  - The entrant detects a prohibited condition; and
  - An evacuation alarm is activated.
6. Not enter a permit-required space without a valid permit.
7. Not enter a permit-required space identified as having unacceptable environmental conditions.
8. Not enter a permit-required space without conducting initial and continuous atmospheric monitoring.
9. Conduct work activities safely in accordance with established guidelines, permits, and procedures.

### 7.0 TRAINING

Each individual serving as authorized entrant, attendant, or Entry Supervisor, during any type of confined space operation, shall be trained so that they have the understanding, knowledge, and skills necessary for the safe performance of their duties. This training shall include the following:

# CCM

## Confined Space Entry Plan

1. The operation of the permit system.
2. The specific duties of each person involved in permit-required space operations.
3. The hazards of confined spaces including information on the mode, signs or symptoms, and consequences of exposure.
4. The proper use of equipment required during permit-required space operations including: testing and monitoring equipment, ventilation equipment, communication equipment, personal protective equipment, lighting equipment, barriers and shields, ingress/egress equipment, rescue and emergency equipment used for non-entry rescue, and any other equipment necessary for safe entry into and rescue from permit-required spaces.
5. The importance of communication between entrants and attendants.
6. The conditions under which a confined space should be evacuated.
7. The procedures for summoning rescuers.
8. The procedures to be used for rescue.

Training shall also be provided to each affected individual:

1. Before the person is first assigned permit-required space operations duty.
2. Before there is a change in assigned duties.
3. Whenever there is a change in permit-required space operations that presents a hazard about which an employee has not previously been trained.
4. Whenever the facility has reason to believe either that there are deviations from the permit-required space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.

The training shall establish proficiency in the duties required of authorized entrants, attendants, and Entry Supervisors and shall introduce new or revised procedures, as necessary.

## 8.0 RESCUE AND EMERGENCY SERVICES

Before any entry into a permit-required space, the Supervisor shall verify that immediate contact is available between the entry team and a designated Rescue Team. The Rescue Team must be nearby and available to respond within a timely manner of an emergency call from the entry team. This may require the Rescue Team to be on-site while the entry is being conducted. No permit-required confined space entry may be conducted if a Rescue Team is not available or is not able to respond within a timely manner.

**Under no circumstance is the attendant to attempt to enter the space to conduct rescue, nor is the attendant to leave his designated post, except for self preservation, until relief arrives.**

# CCM

## Confined Space Entry Plan

*Note: What will be considered timely will vary according to the specific hazards involved in each entry. For example, the Respiratory Protection Standard 1910.134 requires that employers provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH atmospheres.*

### 9.0 EMERGENCY PROCEDURES

1. All entrants shall immediately exit the confined space at the first indication of any hazard to their safety. These indications include, but are not limited to, the following:
  1. Dizziness, fatigue, confusion, headaches, nausea, etc.
  2. Chemical spills or discharges in the space
  3. Fire or explosion
  4. Alarms
  5. Any other serious safety or health hazard
2. All entrants shall immediately exit the space if instructed to do so by the attendant or the Entry Supervisor.
3. If an entrant becomes incapacitated in the confined space, other entrants exposed to similar hazards in the space shall exit the space immediately.
4. In the event of an emergency, the attendant shall:
  1. Report the emergency by telephone or radio to 9-1-1 and CCM Public Safety at 973-328-5551.
  2. Provide all information necessary for appropriate response organizations (i.e., EMS).
5. Under no circumstance shall any CCM employee attempt to enter a confined space to perform a rescue. The Rescue Team shall handle all rescue operations that require entry into the confined space.

### 9.1 Non-Entry Rescue

To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit-required space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements:

1. Each authorized entrant shall use a 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 or anklets may be used in lieu of the full body harness if the Supervisor can demonstrate that the use of a full body

## **CCM**

### **Confined Space Entry Plan**

harness is not feasible or creates a greater hazard and that use of wristlets or anklets is the safest and most effective alternative. Wristlets or anklets may be most effective during entries into horizontal spaces.

2. The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit-required space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical permit-required spaces more than 5 feet deep.

If during the course of a permit-required space entry, an attendant becomes aware that an entrant needs assistance escaping from permit-required space hazards, the attendant shall:

1. Summon rescue and emergency services, and;
2. Begin non-entry rescue procedures, if possible.

#### **10.0 ENTRY OPERATIONS BY MORE THAN ONE EMPLOYER**

Occasionally, simultaneous entry by employees of different employers may be necessary at CCM. When employees (of more than one employer) are working simultaneously as authorized entrants in a permit-required space, procedures will be followed to coordinate entry operations. Each employer will supply their own authorized entrants and attendants who will be responsible for their own entry operations. Each employer must coordinate their entry with the other employers, but will conduct their operations as a separate entry with separate permits, equipment, personnel and Rescue Team.

If employees of more than one employer are to perform entry operations in a permit-required space, all other employees who will be conducting work in the area of that permit-required space shall be made aware that permit entry is occurring, and that precautions may need to be taken to protect authorized entrants.

#### **11.0 WORKING WITH CONTRACTORS**

The Compliance Officer shall be notified when a contractor is hired by CCM to perform work that involves permit-required space entry. The Compliance Officer and the Department Head securing the contract will:

1. Inform the contractor that the campus contains permit-required spaces and that permit-required space entry is allowed only through a written confined space entry program which fulfills the requirements of 29 CFR 1910.146, Permit-Required Confined Spaces.



## **CCM**

### **Confined Space Entry Plan**

2. Apprise the contractor of the hazards posed by the confined spaces (if the spaces have been assessed) which make the space a permit-required space.
3. Apprise the contractor of any precautions or procedures that the facility has implemented for the protection of employees in or near permit-required spaces where contractor personnel will be working.
4. Ensure that the contractor assesses the confined space and understands and follows all confined space entry procedures.
5. Meet with the contractor after entry operations regarding the entry, and regarding any hazards confronted or created in permit-required spaces during entry operations.
6. Coordinate entry operations when employees of more than one contractor are working simultaneously as authorized entrants in or near a permit-required space (i.e., two or more contractors), so employees of one employer do not endanger the employees of any other employer.

Contractors who perform permit-required space entry operations shall:

1. Comply with the requirements for confined space entry outlined in the OSHA Permit-Required Confined Spaces Standard, 29 CFR 1910.146. This includes providing documentation that employees have received education and training for entry into confined spaces, a written confined space entry program, and a permit system.
2. Obtain any available information regarding the permit-required space hazards and entry operations from CCM.
3. Coordinate entry operations when CCM employees and contractor personnel will be working in or near permit-required spaces.
4. Provide personnel, or make arrangements to provide rescue and emergency response services. If the contractor will perform rescue and emergency services, he or she must provide documentation that employees have been trained to perform confined spaces rescue and emergency operations, and the contractor must physically provide all necessary equipment that may be required in the event of an emergency rescue situation before entry operations begin.
5. Inform CCM of the permit-required space program that the contractor will follow and of any hazards confronted or created in permit-required spaces.
6. If any unexpected, non-permitted hazards arise during entry operations, the contractor shall stop entry operations and exit the space. CCM supervisory personnel shall be made aware of the situation immediately.

# **CCM**

## **Confined Space Entry Plan**

### **12.0 CONCLUDING ENTRY OPERATIONS**

When entry operations are complete, all appropriate steps will be taken to close off the permit-required space. The Supervisor shall ensure that all debris, tools and chemicals are cleaned up and removed from the confined space.

All permits shall be canceled by the Entry Supervisor upon completion of entry operations and closing off the permit-required space.

A copy of the canceled permit(s) shall be kept on file for a minimum of one year at CCM by the Compliance Officer.

### **12.1 Reviewing Entry Operation**

When reason exists to believe that the measures taken under the permit-required space program may not protect employees, CCM shall review this program and all permit-required space entry procedures. This review should include a review of all canceled permits, a review of all entry and pre-entry procedures, and interviews with authorized entrants and Supervisors.

Circumstances which may require the review of the permit-required confined space entry program include, but are not limited to, unauthorized entry of a permit-required space, detection of a permit-required space hazard not covered by the permit, detection of a condition prohibited by the permit, the occurrence of an injury or near-miss during entry operations, a change in the use or configuration of a permit-required space, and employee complaints about the effectiveness of this program.

### **13.0 REVIEW OF THE PERMIT-REQUIRED CONFINED SPACE PROGRAM**

At least once a year, CCM will conduct a review of the permit-required confined space program to ensure that employees have appropriately declassified any permit required spaces and to ensure employees are protected from permit-required space hazards. The canceled permits that are retained by the Compliance Officer shall be used to assist in the review of the program.

# CCM

## Confined Space Entry Plan

### APPENDIX A – Permit Required Confined Spaces at CCM

1. HPE water meter pit
2. HPE surge tank (Aquatic facility)
3. Air Handler pits (6)
4. Storm water catch basins
5. Air Handler intakes in penthouses (fan side)
6. Acid neutralization vault – Sheffield Hall
7. Acid neutralization tank (inside vault) – Sheffield Hall
8. Sewer, electric, phone/data manholes
9. Septic tank – Darymple House
10. Septic tank – LHT
11. Miscellaneous Manholes/Vaults – see photos on pages 18-25

# CCM Confined Space Entry Plan



Electrical vault heading from Lot 1

**CCM**  
**Confined Space Entry Plan**



Electrical vault (close-up of previous photo)

# CCM Confined Space Entry Plan



Electrical vault

# CCM Confined Space Entry Plan



Water system vault for LHT and Darymple House

# CCM Confined Space Entry Plan



Baseball water system shutoff  
Driveway to tennis courts from HPE



## CCM Confined Space Entry Plan



Abandoned water system feeding pavilion located along the driveway to the pavilion and tennis courts from the HPE.

# CCM Confined Space Entry Plan



Sewer/Water system manhole

# CCM Confined Space Entry Plan



Sewer/Water system manhole

**CCM  
Confined Space Entry Plan**



Manhole right of driveway to HPE from Pavilion

# CCM Confined Space Entry Plan

## APPENDIX B - CCM Confined Space Assessments

<b>PRCS #34: AIR HANDLER PITS (6)</b>	
<b>LOCATION: COUNTY COLLEGE OF MORRIS –VARIOUS LOCATIONS</b>	
<b>SIZE: 5 FEET x 15 FEET x 10 FEET DEEP –OPEN GRATE TOP</b>	
<b>Potential for Hazardous Atmosphere?</b>	<b>YES</b> <ul style="list-style-type: none"><li>• Toxic (Hydrogen Sulfide)</li></ul>
<b>Material with the potential to entrap or engulf an entrant?</b>	<b>NO</b>
<b>Internal configuration that may trap or asphyxiate an entrant?</b>	<b>NO</b>
<b>Any other serious safety or health hazard?</b>	<b>NO</b>



# CCM Confined Space Entry Plan

<b>PRCS #35: CATCH BASINS</b> <b>LOCATION: COUNTY COLLEGE OF MORRIS –VARIOUS LOCATIONS</b> <b>SIZE: VARIOUS</b>	
<b>Potential for Hazardous Atmosphere?</b>	<b>YES</b> <ul style="list-style-type: none"> <li>• Low Oxygen</li> <li>• Flammable</li> <li>• Toxic</li> </ul>
<b>Material with the potential to entrap or engulf an entrant?</b>	<b>YES</b> <ul style="list-style-type: none"> <li>• Water</li> </ul>
<b>Internal configuration that may trap or asphyxiate an entrant?</b>	<b>YES</b> <ul style="list-style-type: none"> <li>• Pipes</li> </ul>
<b>Any other serious safety or health hazard?</b>	<b>NO</b>



# CCM Confined Space Entry Plan

## Confined Space Hazard Assessment

Confined Space ID: Air Handler Fan Side  
CCM all buildings

Initial Assessment Date: 10/25/18

Revised Assessment Date:  

Confined Space (Must meet all criteria in blue)		Permit Required Confined Space (Must be a confined space and meet at least 1 of the below criteria)		Assessed Space Type Class Determination	
Y	Is large enough & so configured that an employee can bodily enter & perform work; AND	N	Contains or has the potential to contain a hazardous atmosphere; OR		CS-Non-Permit Rqd
Y	Has limited or restricted means for entry or exit; AND	N	Contains a material that has a potential for engulfing an entrant; OR	Y	CS-Permit Rqd -Reclass OK
Y	Is not designed for continuous human occupancy.	N	Has an internal configuration such that an entrant could be trapped or asphyxiated by inward converging walls or by a floor which slopes downwards & tapers to a smaller cross section; OR		CS Permit Rqd - No Reclass
		Y	Contains any other recognized serious safety or health hazard.		

Authorized Entry Points				
Top	<input checked="" type="checkbox"/>	Side	<input type="checkbox"/>	Bottom

Ventilation Requirements	
<input checked="" type="checkbox"/>	Natural Circulation – No atmospheric Hazards
<input type="checkbox"/>	Mechanical Ventilation –

Hazard	Description & Controls
Flammable/Combustible	
Electrical	Electrical Energy is present and LOTO is required prior to entry to de-energize the equipment.
Toxics	
Thermal	
Radiation	UV light is present but is interlocked with the door. UV light will shut off when door is opened.
Pipe inlets	
Machinery	Rotating moving parts.
Engulfment/Entrapment	
Other	

# CCM Confined Space Entry Plan

Work to be performed:

Confined space entry

Personal Protective Equipment			
<input type="checkbox"/>	APR	CPC(Type)	X Safety Glasses
<input type="checkbox"/>	ASR	FRC	Other:
<input type="checkbox"/>	Dust Mask	Hard Hat	
<input type="checkbox"/>	Hearing protection	Face shield	
<input type="checkbox"/>	Gloves (Type)	Goggles	

Safety Equipment		
<input type="checkbox"/>	Radios	Radiation Detector
<input type="checkbox"/>	Wristlets	Other:
<input type="checkbox"/>	Harness	
<input type="checkbox"/>	Combustible Gas/O <sup>2</sup> Meter	
<input type="checkbox"/>	Toxic Detector	

Rescue Equipment			
<input type="checkbox"/>	Tripod	APR	# of rescuers/entrant
<input type="checkbox"/>	Ropes	ALR	
<input type="checkbox"/>	Mechanical Assist	SCBA	
<input type="checkbox"/>	Wristlets	First Aid Kit	
<input type="checkbox"/>		AED	

Comments:

Refer to the LOTO procedure specific to CCM's HVAC units to de-energize the equipment.

Dimensions 3 x 5 feet entry.

Assessment Completed by:

David Park, Safety Consultant, Garden State Environmental, Inc.



# CCM Confined Space Entry Plan

## Confined Space Hazard Assessment

Confined Space ID: Air Handler Filter Side  
CCM All Buildings

Initial Assessment Date: 10/25/18

Revised Assessment Date:

Confined Space (Must meet all criteria in blue)		Permit Required Confined Space (Must be a confined space and meet at least 1 of the below criteria)	Assessed Space Type Class Determination		
Y	Is large enough & so configured that an employee can bodily enter & perform work; <b>AND</b>	N	Contains or has the potential to contain a hazardous atmosphere; <b>OR</b>	N	CS-Non-Permit Rqd
Y	Has limited or restricted means for entry or exit; <b>AND</b>				CS-Permit Rqd -Reclass OK
Y	Is not designed for continuous human occupancy.	N	Contains a material that has a potential for engulfing an entrant; <b>OR</b>		CS Permit Rqd - No Reclass
		N	Has an internal configuration such that an entrant could be trapped or asphyxiated by inward converging walls or by a floor which slopes downwards & tapers to a smaller cross section; <b>OR</b>		
		N	Contains any other recognized serious safety or health hazard.		

Authorized Entry Points				
Top	<input checked="" type="checkbox"/>	Side		Bottom

Ventilation Requirements	
<input checked="" type="checkbox"/>	Natural Circulation – No atmospheric Hazards
<input type="checkbox"/>	Mechanical Ventilation –

Hazard	Description & Controls
Flammable/Combustible	
Electrical	
Toxics	
Thermal	
Radiation	
Pipe inlets	
Machinery	
Engulfment/Entrapment	
Other	

# CCM Confined Space Entry Plan

Work to be performed:

Confined space entry

Personal Protective Equipment			
APR	CPC(Type)	Safety Glasses	
ASR	FRC	Other:	
Dust Mask	Hard Hat		
Hearing protection	Face shield		
Gloves (Type)	Goggles		

Safety Equipment	
Radios	Radiation Detector
Wristlets	Other: Scaffold
Harness	
Combustible Gas/O <sup>2</sup> Meter	
Toxic Detector	

Rescue Equipment			
Tripod	APR	# of rescuers/entrant	
Ropes	ALR		
Mechanical Assist	SCBA		
Wristlets	First Aid Kit		
	AED		

Comments:

Dimensions 3 x 5 feet entry.

Assessment Completed by:

John Letso, OHST Garden State Environmental, Inc.

# CCM Confined Space Entry Plan

## APPENDIX C - Sample Entry Permit

### PART A: Description of Confined Space

<b>Space Description:</b>	<b>Permit #:</b>
<b>Space Location:</b>	<b>Date:</b>
	<b>Time Out:</b>

### PART B: Type of Confined Space – Non-Permit or Permit?

**IF SPACE IS NOT A PERMIT-REQUIRED SPACE, OR IS A PERMIT-REQUIRED SPACE IN WHICH ALL HAZARDS HAVE BEEN ELIMINATED – Test atmosphere and record readings below. If safe, continue with non-permit entry unless conditions change.**

Test Parameter	Acceptable Conditions	Initial Results	Time of Initial Results
Oxygen	19.5% - 23%		
Flammable Atmosphere	<10% LEL		
CO	<35 ppm		
H <sub>2</sub> S	<10 ppm		
Acceptable Environmental Conditions?			Yes
			No

**IF SPACE IS A PERMIT-REQUIRED SPACE – *potential for hazardous atmosphere; potential for engulfment; internal configuration which could trap or asphyxiate; any other recognized serious hazard.***

**Continue to fill out permit and conduct permit-required entry.**

### PART C: PERMIT

<b>Entry Supervisor:</b>					
<b>Authorized Entrants:</b>					
<b>Attendant:</b>					
<b>Description of Work/Purpose of Entry:</b>					
<b><u>Hazards:</u></b>					
Oxygen Levels	YES	NO	Engulfment Water	YES	NO
Flammable Atmosphere	YES	NO	Engulfment Other	YES	NO
Toxic Atmosphere	YES	NO	(Specify)		
Electrical	YES	NO			

# CCM Confined Space Entry Plan

## Preparation/Isolation Check List

YES	N/A		YES	N/A	
		Notify Affected Department of Entry			Locked & Tagged – Electrical/Mechanical
		Secure Area: (barriers/barricades)			Locked & Tagged –Valves, Pipes, etc.
		Cleaned, Drained, Washed & Purged			Locked & Tagged –Other
		Employees Informed of Procedures & Hazards			Ventilated to Provide Fresh Air
		Atmospheric Test for Compliance			Low Voltage/Explosion Proof Lighting
		Ground Fault Circuit Interrupters			Slip/Trip/Fall Hazards Eliminated
		First Response Team Contacted			Non Sparking Tools
		Fire Extinguisher Available			Other:
<b>Description of Entrant/Attendant Communications Systems:</b> Verbal      Radio      Telephone <b>Other: (Specify)</b>					

## Personal Protection Equipment Check List

YES	N/A		YES	N/A	
		Safety Glasses			Hard Hat
		Face Shield			Safety Goggles
		Gloves			Hearing Protection
		Protective Footwear			Protective Clothing
		Safety Harness/Tripod			Other: (Specify)

## Air Testing

Test Parameter	Acceptable Conditions	Perform Test	Initial Results	Time of Initial Results	1 Hour Results	2 Hour Results	3 Hour Results	4 Hour Results
Oxygen	19.5% - 23%							
Flammable Atmosphere	<10% LEL							
<b>Toxic Atmosphere</b>								
CO	<35 ppm							
H <sub>2</sub> S	<10 ppm							
Heat/Cold								

# CCM Confined Space Entry Plan

<b>Acceptable Environmental Conditions</b>	<b>Yes</b>					
	<b>No</b>					

**\*\*\*Continuous monitoring is required for all categories/record every hour\*\*\***

**NOTE: IF AIR MONITORING LEVELS EXCEED “ACCEPTABLE CONDITIONS” AT ANY TIME, ENTRANTS MUST EXIT THE SPACE IMMEDIATELY AND THE PERMIT CANCELLED.**

**PERSON CONDUCTING AIR MONITORING:**

(Name, Title & Initials)

<b>Date:</b>	<b>Time In:</b>	<b>Time Out:</b>
--------------	-----------------	------------------

**Instrument Used:**

<b>Entry Supervisor:</b>	<b>I certify all precautions have been taken and the necessary equipment has been provided for safe entry and work in this confined space area.</b>
<b>Date:</b>	<b>Time:</b>
<b>Name:</b>	
<b>Signature:</b>	

**NOTE: THIS FORM MUST BE KEPT AND PRODUCED WHEN REQUIRED**

# CCM Confined Space Entry Plan

## APPENDIX D – Sample Hot-Work Permit

PERMIT# \_\_\_\_\_

<b>SPACE DESCRIPTION:</b>	<b>DATE:</b>
<b>SPACE LOCATION:</b>	<b>TIME:</b>
<b>SUPERVISOR:</b>	<b>EXPIRATION:</b>
<p>Hot -Work to be performed:</p> <p><input type="checkbox"/> Grinding</p> <p><input type="checkbox"/> Electrical Spark-Producing Equipment –Specify Type: _____</p> <p><input type="checkbox"/> Cutting</p> <p><input type="checkbox"/> Heating</p> <p><input type="checkbox"/> Welding (Locate Cylinders Outside of the Permit-Required Space)</p> <p><input type="checkbox"/> Brazing or Soldering</p> <p><input type="checkbox"/> Space Heater (Note: Space Heaters must not be taken into permit-required spaces. Fresh warm air should be blown in as needed)</p> <p><input type="checkbox"/> Other Source of Ignition –Specify Type: _____</p>	
<b>Specify nature of work to be performed:</b>	

### HOT-WORK PERMIT PRE-ENTRY CHECKLIST

YES	N/A	ITEM	YES	N/A	ITEM
		<b>Pre-Entry Atmosphere Testing</b>			<b>Employees Trained on use of Fire-Fighting Equipment</b>
		<b>Flammable/Combustible Gas or Liquid Present</b>			<b>Employees Have Received Additional Training on “Hot Work” Duties</b>
		<b>Flammable/Combustible Residue Present</b>			<b>Welding Operations (4 items below)</b>
		<b>Combustible Dust Present</b>			<b>Welding Electrodes and Welding Torch Removed During Suspension of Welding Operations</b>
		<b>Ventilation to Provide Fresh Air (General or Local)</b>			<b>Compressed Gas Cylinders Always Outside of Space</b>

## CCM Confined Space Entry Plan

		<b>Ventilation Equipment Intrinsically Safe</b>			<b>Portable Equipment Secured</b>
		<b>Space Isolated</b>			<b>Emergency Procedures in Place (i.e., lifeline, rescue procedures, etc.)</b>
		<b>Fire-Fighting Equipment Available (Inside or Outside Space): Specify Type_____</b>			<b>Other:</b>
<p><b>An evaluation of the permit-required space has been conducted with respect to performing “Hot-Work” activities. I certify that conditions are acceptable for the “Hot Work” to be conducted.</b></p>					
<b>Signature of Entry Supervisor</b>			<b>Date</b>		<b>Time</b>

# CCM Confined Space Entry Plan

## APPENDIX E – Emergency Telephone Numbers

<u>Department</u>	<u>Phone Numbers</u>
County of Morris	973-584-5503
NJ Poison Control Center	1-800-222-1222
NJDEP Hotline	1-800-927-6337