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Confined Space Policy and Procedure

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Table of Contents:

1. Purpose
2. Scope
3. Policy
4. Definitions
5. Responsibilities
6. Entry Supervisor
7. Entry Attendant
8. Entrant
9. Procedure
   a. Permit-Required Confined Space Procedure
   b. Procedure for Confined Space Entry
   c. Procedure for Downgrading a Confined Space
   d. Immediate Evacuation of a Confined Space
   e. Returning the Confined Space to Operation
   f. Sewer Entry
10. Summary
11. Distribution
12. Appendix A: Atmospheric Testing and Monitoring
13. Appendix B. Ventilation of Confined Spaces
14. Appendix C: Filling out a Confined Space Permit SOP
15. Appendix D: Downgrading a Confined Space

1. Purpose

To ensure the best possible safety conditions for employees, to meet the requirements for practices and procedures to protect employees in general industry from the hazards of entry into permit-required confined spaces.

2. Scope

This procedure applies to all St. Croix Tissue, St. Croix Chipping, Woodland Pulp personnel, contractors and service suppliers while on company property and involved in a permit-required confined space entry.

Employees Who May Enter Confined Spaces - employees who may enter confined spaces shall comply with the confined space entry procedures contained herein and with those procedures stipulated by their supervisor. To comply, employees shall carry out the following tasks:

1) Store, clean, maintain and guard against damage, equipment used for confined space entry.

2) Report any deficiencies or malfunction of equipment to a supervisor.
3) Understand emergency procedures in case of an accident in a confined space.
4) Under no circumstance enter a confined space that is suspect of having a non-respirable atmosphere, even to rescue a fellow employee.

3. Policy

All employees shall follow, at a minimum, the requirements for permit-required confined spaces as outlined in OSHA 29 CFR 1910.146 Subpart J General Environmental Controls, Title "Permit-Required confined Space" and Appendices A, B, C, D, E and F.

4. Definitions

Acceptable entry conditions mean the conditions that must exist in a permit 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 means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized entrant means an employee who is authorized by the employer to enter a permit space.

Blanking or blinding means the absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Certified Breathing Air is air designed for breathing purposes. Mill compressed air cannot be used for breathing purposes.

Confined space means a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- 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 means of entry.); and
- Is not designed for continuous employee occupancy.

Double block and bleed means the closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency means any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.

Emergency Contact Number – The main gate dispatches the Rescue Team**.** Phone 207-427-3311 and press Zero (0) if using a cell phone. Note: if 911 is called from a cellphone or internal phone within the Tissue building, the call will go to outside rescue services.

Engulfment means the surrounding and 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 means 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) means the written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in paragraph (f) of this section.

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

> **NOTE:** An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);

- Airborne combustible dust at a concentration that meets or exceeds its LFL;

NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.

- Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

- Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environmental Control, or in Subpart Z, Toxic and Hazardous Substances, of this Part and which could result in employee exposure in excess of its dose or permissible exposure limit;

NOTE: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

- Any other atmospheric condition that is immediately dangerous to life or health.

- For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, section 1910.1200 of this Part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hot work permit means the employer's written authorization to perform operations (for example, riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

Immediately dangerous to life or health (IDLH) means 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 space.

NOTE: Some materials -- hydrogen fluoride gas and cadmium vapor, for example -- may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Inerting means the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

NOTE: This procedure produces an IDLH oxygen-deficient atmosphere.

Isolation means the process by which a permit 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 and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.

Line and equipment opening means the intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Non-permit confined space means 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 means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

- Contains or has a potential to contain a hazardous atmosphere;
- Contains a material that has the potential for engulfing an entrant;
- Has an internal configuration such that a n 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
- Contains any other recognized serious safety or health hazard.

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit system means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Personal Protective Equipment (PPE) – PPE must be worn as the hazard dictates.

Prohibited condition means any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Rescue Team means the personnel designated to rescue employees from permit spaces.

Retrieval system means 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 spaces.

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

> **NOTE:** Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during entry.

Tools – where explosive atmospheres may be encountered, only use non-sparking tools. If electrical tools must be sued, or welding performed, the atmosphere must be continuously tested for explosive vapors during the time the sources of ignition are used. Only reduced voltage (6 or 12 volts) lights or ground fault interrupters will be used for confined space entry.

5. Responsibilities

5.1 Safety Manager & Administrative Assistant are responsible for:

- Communications, Awareness & Training.
- Ensuring the OSHA standards are followed.
- Verifying that confined space permits are completed properly.
- Downgrading a confined space when appropriate.
- Updating the confined space procedure when necessary.
- Ensuring that all entry supervisors, attendants, and entrants are fully trained in their duties before they are assigned to their duties.
- Maintaining a permanent record for training that will be up-dated annually.
- Reviewing confined space entry permits to verify completion of permit.
    - If while reviewing these entry permits a specific confined space is found to require special safety modifications, notification will be made to the safety manager and the department manager.

5.2 Team Leaders, Supervisors & Management are responsible for:

- Communicating changes in safety procedure
- Scheduling employees to attend training
- Ensuring that confined space issues brought to their attention are immediately addressed.

5.3 Mill Employees, Contractors, and Service Suppliers are responsible for:

- Understanding and following the mill's confined space procedure.
- Completing the confined space permits correctly.
- Removing the permit after the completion of the entry and sending cancelled permit to the Safety Manager.
- Reporting to the area supervisors or manager any issues or concerns noted during the confined space entry.

6. Entry Supervisor

Entry Supervisor is responsible for: determining if acceptable entry conditions are present and maintained; authorizes entry; can terminate the entry if required.

Duties include the following:

- Knows the hazards that may be faced during the entry and will brief the attendant and all entrants.
- Checks that all entries have been made on the permit tag.
- Ensures all air tests have been completed and documented by a trained and qualified person according to the requirements on the tag.
- Ensures that all safety equipment, work equipment, and procedures specified by the permit are in place before endorsing the permit and allowing the entry to begin.
- Verifies through contacting the area supervisor that four members of the rescue team are on site and available to respond and the means of summoning them are operable.
- Removes unauthorized individuals who enter or attempt to enter the permitted area.
- Determines that entry operations remain consistent with terms of the entry permit and procedures and that acceptable entry conditions are maintained by periodically visually checking the entry.
- When the duties of the entry supervisor are transferred to another trained person the new entry supervisor will go to the entry site to ensure that entries to the space are being done according to the entry procedure and to inform the attendant and entrants of the change.
- Any employee, who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the required pre- entry testing.
- The entry supervisor will have the authority to terminate the entry when conditions warrant such actions.

- Makes sure the confined space is crossed off with an 'X', red Danger tape, and a No Entry Confined Space sign if a door is not able to be shut.
    - This also applies if the entry attendant and entrant will be leaving the space for breaks, lunch, or after the work is done but before the space can be shut / closed.

7. Entry Attendant

Is an individual stationed outside a permitted space that monitors the authorized entrants and performs the following assigned duties:

- Knows the hazards that may be faced during entry
- Is aware of possible behavioral effects of hazard exposure in entrants
- Attendant has the authority to recall an entrant from the space or deny entry if he thinks the entrant is behaving unusually.
    - In such cases the medical department will be called.
- Continuously maintains an accurate count of authorized entrants in the space.
- Continuously maintains gas meter readings while entrants are in the space.
- Ensures monitoring equipment is working properly monitoring the gases at all times
    - Some types of monitors do not read gas levels while charging.
- Ensure all entrants are wearing harnesses unless there is an exception noted on the permit
- Remains outside the permit space during entry operations until relieved by another trained attendant
- Maintains communication with entrants either visually or vocally to monitor entrant's status or the need to evacuate the space.
- Monitors activity inside and outside the space to ensure entrant's safety and will order the entrants to evacuate when conditions warrant such an order .
- Keep all unauthorized persons from entering the space and contact the entry supervisor of such activity
- Perform non-entry rescues. Under no circumstances will the attendant enter the vessel. Their role is to get help.
  Be familiar with how to summon help when needed.
- Have a radio so they can call the main gate if necessary.
- Must not be on cell phones talking or texting while entrants are in space
- Performs no other duties that might interfere with the attendants' primary duty to protect and monitor the entrants.
- Ensures there is no music playing inside the space
- Makes sure the confined space is crossed off with an 'X', red Danger tape, and a No Entry Confined Space sign if a door is not able to be shut.

- This also applies if the entry attendant and entrant will be leaving the space for breaks, lunch, or after the work is done but before the space can be shut / closed.

8. Entrant

Is an employee who is authorized to enter a confined space and has the following duties and obligations:

- Know the hazards involved during entry
- Properly use safety equipment supplied
- Wear safety harness as required
- Do not listen to music while in a confined space
- Communicate with the attendant as necessary
- Alert the attendant of unsafe conditions
- Exit the confined space whenever an unsafe or prohibited condition forms
- Any employee who enters the space, or that employee's authorized representative, shall be provided an opportunity to observe the required pre- entry testing.

9. Procedure

a. Permit – Required Confined Space Procedure

This program is mandatory whenever confined spaces must be entered for inspection, cleaning or repairs. This procedure covers entry into any tank, manhole, vessel or confined area, including sewers, that are ordinarily used for containment of materials and that are not ordinarily occupied by people.

All confined spaces at our facility are considered Permit-Required Confined spaces. The safety manager or designee if not available, is the only person who can downgrade a confined space. Because of the many different types of confined spaces at our facility, this procedure will serve as a minimum.

In preparation of a confined space, the following steps must be performed:

- The product normally found in the vessel will be safely removed before entry into a confined space is made.
- The atmosphere in the confined space will be tested by a qualified person for oxygen percentage, combustible and a toxic gas to determine its suitability just before entry is made. To be qualified a person will have the understanding, knowledge and skills to perform this duty. Training will establish the employee's proficiency and will be documented with the employee's name, signature of trainer and the dates of training.

An attendant is required for the person conducting the test if the tester is required to break the plane of the entry point.

- The training for using the mill supplied meters will consist of the following: background information, proper usage and possible problems that may be encountered followed by a practical hands-on demonstration. The employee must demonstrate to the trainer an acceptable understanding of the proper use of such instrument. Training will be done annually before the annual outage for those you use the meters.

- The confined space must be thoroughly ventilated by use of fans or blowers (if air tests warrant) and it is preferable to exhaust vapors through roof manholes to facilitate dispersion into surrounding air, thereby reducing the chance of pockets forming at ground level.

- Continuous monitoring is required on every confined space. An alternative that may be used with department manager's permission is gas detection tubes at a regular interval to be defined by the entry supervisor based on conditions of the confined space. Exceptions may be made during major outages.

- For confined spaces, with only top manholes, air must be carried to the bottom of the confined space. Mechanical ventilation systems, where applicable, shall be set at 100% outside air. Where possible, open additional manholes to increase air circulation. Use portable blowers to augment natural circulation if needed. After a suitable ventilation period, repeat the testing. Entry may not begin until testing demonstrates that the hazardous atmosphere has been eliminated or air-breathing equipment (airline/SCBA) is worn.

- No entry shall be made if combustible gases are present. Any questions concerning a confined space entry should be referred to the safety manager or designee for assistance.

- If a confined space has been evacuated due to failure of an atmospheric test, workers will not return to the area until a SUPERVISOR who has completed the gas detector training has used a direct reading gas detector to evaluate the situation and has determined that it is safe to do so.

- A confined space entry permit must be completed prior to entry into a confined space to verify that all sections of the confined space entry procedure have been completed, including verifying that the rescue team is available. The permit will be located at the entrance of the confined space and will be signed by the entry supervisor and the individual who performed the gas testing.

- Outside contractors will be informed of potential risks and a meeting between a Mill supervisor and a supervisor(s) representing contractors entering the confined space will take place before entry to coordinate activities such that contractors are not endangering other contractors or Mill employees. If outside contractors are entering a confined space, the entry permit must include a signature from the contractor in charge of the particular job.

    - As the Host Employer, the Construction Standard (29 CFR 1926.1200.1203) requires that the host employer inform controlling contractors of each know n space, hazards within those spaces and precautions implemented in previous entries in writing.

- The confined space will require re-testing of the atmosphere and re-issuing of a new confined space entry permit under the following conditions:

- Confined space permits will be considered valid only during the shift they are issued. When entry supervisors who authorized the permit are relieved, they will inform their relief of permits issued and the oncoming entry supervisor will re-issue permits for any work not completed.

    - The exception for this would be during extended outages. One permit can be used for the entire outage as long as an attachment shows all the gas testing results, entrants, safety attendants and supervisor in charge of crew. Completed permits must be sent to the safety department as soon as the confined space entry has been completed.

- Wherever confined space entry procedures are interrupted for any period of time, the procedure for testing and entry must be repeated.

- Make sure the confined space is crossed off with an 'X', red Danger tape, and a No Entry Confined Space sign if a door is not able to be shut.
    - This also applies if the entry attendant and entrant will be leaving the space for breaks, lunch, or after the work is done but before the space can be shut / closed.
- All lines connected to the confined space, including sewer connections, will be checked as a source of hazard.

- Both the Lockout and Line and Equipment Opening Procedures must be followed.

- Before entering the confined space served by pipeline carrying liquid, steam or other gases under pressure or at extreme temperatures, all valves carrying these elements must be tightly closed, chained locked and tagged.

- All electrical current to the confined space or associated equipment must be discontinued using the electrical lockout procedure.

- To retrieve personnel from vertical spaces more than 5 feet deep, emergency equipment intended for immediate rescue shall be located at or near the entry point. This may be items such as tripods, retrieval devices, harnesses, rope, fans, etc.

- At times, we will have planned entries that require supplied air. In this case the attendant must always be supplied with the same type of equipment as the entrant. For example, if the entrant is in SCBA then the attendant must have SCBA available to them as well. If the entrant is in supplied air then the attendant must have immediate access to supplied air.

b. Procedure for Confined Space Entry

A properly trained attendant and entry person will always be assigned to any task involving confined space entry.

Each employee entering a confined space shall be properly attired in protective equipment as needed

All employees entering the confined space will check the confined space entry permit to ensure that it is valid

Entry into a confined space requires an employee to wear a chest or full body harness. The entry attendant will always keep in contact, either visually or by radio, with the person in the confined space. In the case where entanglement causes more of a hazard than not having a lifeline, exceptions will be made. Before this occurs however the safety manager or designee must be briefed and will make the determination. A full body harness will still be required. Vessels with constricted entryways may require wristlets or other types of retrieval devices.

Make sure the confined space is crossed off with an 'X', red Danger tape, and a No Entry Confined Space sign if a door is not able to be shut.

- This also applies if the entry attendant and entrant will be leaving the space for breaks, lunch, or after the work is done but before the space can be shut / closed.

c. Procedure for Downgrading a Confined Space

Only the Safety Manager, Safety Superintendent, or designee can downgrade a permit required confined space.

1. Obtain downgrading form (see attached)
2. Ensure all hazards have been eliminated from the space

3. Conduct Gas monitoring to ensure that no gaseous hazards are present
4. Complete downgrading form
5. Post form at entrance to space with the confined space permit.
6. Collect form when entry is complete

d. Immediate Evacuation of a Confined Space

Immediate evacuation of a confined space shall occur in the event of any of the following conditions:

- Attendant has to leave without a qualified replacement.
- Any change in behavior for any of the entrants.
- Any building alarms such as fire, chemical or evacuation.
- Personal alarms.
- Alarms from a continuous air monitor or unacceptable test results on gas detection tube.
- Radio failure.
- Unauthorized persons entering the space.
- Failure of any components of air supply equipment (breathing air).
- Failure of support equipment such as ventilator fans, retrieval equipment.
- Any recognized serious safety or related hazard such as changes in work areas that may impact the space or have a potential to impact the confined space entry.

e. Returning the Confined Space to Operations

Ensure that all work inside the vessel has been completed, all equipment removed, and all employees accounted for. Then, and only then, will the electrical and valve locks be removed. The expired confined space entry permits will be sent to the Safety / Medical Department where they will be maintained on file for one year.

NOTE: The back of the entry permit has locations for personnel involved with the entry to list other protective measures taken or that possibly should be taken in the future for a safe entry into the specific confined space listed on the permit.

f. Sewer Entry

Special precautions must be taken before entering sewers as they pose special hazards. A sewer at this mill would be any underground process or sanitary piping and possibly some collection sumps. The Safety Manager, or designee, will determine if a confined space entry is a sewer entry.

The following conditions must be met, where applicable, before entering any sewer:

- Provide adequate ventilation.
- Continuous monitoring for oxygen
- Continuous monitoring for combustible gases
- Test for chlorine dioxide
- Test for hydrogen sulfide
- Test for sulfur dioxide
- Lock out all valves, gates, etc. leading into sewer, both upstream and downstream.
    - If it is absolutely impossible to lock out all valves, gates, etc. an observer must be placed at those locations to prevent any valves, gates, etc. from being inadvertently opened while people are in the sewers.
- A minimum of two (2) rescue team members trained in confined space rescue, will be in full rescue gear and standing by the point of entry.
- Additional responsibilities of attendants are:
    - Tend the lifeline
    - Radios
    - Observe personnel in sewers at all times
    - Observe gas monitoring devices
    - Know location of nearest mill phone to call Security, which would then activate the rescue team. The main gate dispatches the Rescue Team**.** The main gate phone number is 207-427-3311. Note: if 911 is called from a phone in the tissue mill, or from a cell phone, the call will go to outside rescue services.

- All personnel entering sewers may be required to wear either self-contained breathing apparatus or air-line respirators with egress cylinder, depending on the results of the atmospheric testing completed.
- Vessel entry permit must be signed by the entry supervisor and the safety manager or designee**,** regardless of time of day or night.
- Gas Testing Limits:
    - Oxygen -- 19.5% to 23.5%
    - Sulfur Dioxide -- less than 2 ppm
    - Hydrogen sulfide -- less than 10 ppm
    - Flammable vapors (LEL) -- below 10%
    - Temperature less than 120 F.

NOTE: Any time toxic gases are detected in a vessel, even if less than the minimum required standard, a continuous monitor should be used to monitor the air to verify that these gases do not increase above the acceptable levels while work is being performed.

10.Summary

St. Croix Tissue, St. Croix Chipping, and Woodland Pulp have the responsibility to establish a written, comprehensive program which includes provisions for working in confined spaces.

These provisions entail preventing unauthorized entries, identifying and evaluating hazards, establishing procedures for safe permit space entry, issuing and maintaining proper equipment, using outside attendants, establishing rescue and emergency procedures, identifying duties and job classifications of employees entering and/or working in confined spaces, establishing a system for issuing entry permits, developing post-entry procedures, and conducting post-illness/injury reviews.

The written plan will be reviewed annually for accuracy and completeness.

The written plan and its elements will be updated in the following situations:

1. When there is reason to believe that provisions of the program may not protect employees.
2. When new processes and/or technologies are introduced.
3. When job duties mentioned in the program are changed.
4. When locations mentioned in the program are changed.
5. When requirements for written confined space entry programs have changed in accordance with applicable standards, codes and regulations.
6. When any other elements are changed.

11.Distribution

- SCT Intranet
- WP Intranet

Appendix A: Atmospheric Testing and Monitoring

1. PROCEDURES FOR ATMOSPHERIC TESTING AND MONITORING

Atmospheric testing is necessary for two purposes: evaluation of the hazards of the permit space and verification that acceptable entry conditions for entry into that space exist.

1) Evaluation Testing

The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that appropriate entry procedures can be developed, and acceptable entry conditions stipulated for that space. A minimum of three tests should be performed to identify atmospheric hazards in confined spaces. These tests must be performed in the following sequence:

- Oxygen Content
- Flammability
- Toxicity

2) Verification Testing

The atmosphere of a permit space which may contain a hazardous atmosphere should be tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions.

3) Duration of Testing

Measurement of values for each atmospheric parameter should be made for at least the minimum response time of the test instrument specified by the manufacturer.

4) Testing Stratified Atmospheres

When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope should be tested a distance of approximately 4 feet in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress should be slowed to accommodate the sampling speed and detector response.

5) Equipment Calibration

To ensure that the atmospheric testing equipment is functioning properly, any direct reading test device should not be used without performing the following three operations:

- Inspection
- Calibration

- Bump
- Test

All three operations should be performed according to specific manufacturer's instructions.

Woodland Pulp performs the Calibration once a month for all gas meters. The Bump tests are performed for each gas meter, once a day, usually on the night shift.

If a gas meter is being used passed the Bump Test date on the meter, the meter needs to be taken to the Electrical Shop and bump tested. All confined spaces will need to be stopped and entrants removed until a gas meter with the correct Bump Test date has been provided.

2. AIR MONITORING GUIDE

1) **Calibrate Instrument**
2) **Inspect Instrument**

Check physical condition of instrument (case, meter, attachments, hoses for cracks)

- Review instructions to insure you know how to use the device and interpret results.

3) **Perform Function Test**
   - Oxygen sensor: breathe into sampling device to reduce the oxygen level below 19.5%. The oxygen alarm should sound.
   - Combustible gas sensor: remove cap of solvent magic marker or open a cigarette lighter without a flame near the sampling device until it reaches a 10% reading. The gas sensor should sound.
   - Always perform a function test in the field before use.
   - Never perform a function test in the suspected atmosphere.

4) **Pre-Test Space**
   - Zero instrument in known fresh air.
   - Test entire space, top to bottom, every four feet and in the direction of travel.
   - Order of tests:
     - ◊ Oxygen
     - ◊ Flammability
     - ◊ Toxicity

5) **Monitor the Space**
   - If continuous monitoring is required, position the instrument near the workers breathing zone.

Appendix B: Ventilation of Confined Spaces

Ventilation is one of the most effective means of controlling hazardous atmospheres in confined spaces. In this procedure, clean air replaces contaminated air by natural or forced (mechanical) ventilation.

1. FACTORS IN VENTILATING CONFINED SPACES

When ventilating a confined space, the following factors must by taken into consideration:

1) **Volume of air:**

This determines the capacity of the blower or ejector.

2) **Type of atmosphere:**

This will determine the type of blower or ejector used and the length of time needed to ventilate until it is safe for people to enter the space.

3) **Access to space:**

This determine how to get the ventilating air into and out of the space.

4) **Power requirements and availability:**

This will influence the power source and fan motor size. A portable generator may be required as a source of power.

5) **Cost, efficiency, and maintenance:**

This may have an effect on the type of device that is selected and what is necessary to keep it working properly.

6) **Shape of space:**

This will affect the type of directional device needed and the amount of air pressure required to provide sufficient ventilation.

7) **Source of clean air:**

This is necessary to ensure adequate ventilation.

8) **Length of time ventilation is needed:**

This is determined by the type of contaminant and the work that is to be done in the space.

9) **Type of work to be done:**

This determines whether local exhaust ventilation or general ventilation is required.

2. VENTILATION GUIDE

1) Select fan with a capacity to quickly replace the air in the space. Limitations are pasted on the fan housing.
2) Use reliable, grounded electrical power.

3) Eliminate any hazardous atmosphere. Exhaust toxic and flammable air; supply fresh air when oxygen-deficient.
4) Provide constant circulation of fresh air while space is occupied.
    - Natural ventilation is allowable only on “non-permit” entry.
    - Direct high-velocity supply ventilation to mix the air throughout the space.
    - Capture contaminants during hot work or cleaning with solvents by using additional local (or point) exhaust.

    Pure oxygen is not "fresh air". Never use bottled oxygen for ventilation.

5) Arrange ductwork to ensure safety:
    - Locate supply fan intake away from flammable or toxic air.
    - Position exhaust fan outlet to avoid recirculation of bad air or endangering others outside the space.
    - Position exhaust duct inlet next to the source of contaminants.
    - Keep ducts short and straight.
    - Make sure air circulates through entire space and does not short-circuit.
6) Monitor the air to ensure ventilation is keeping the air safe to breathe.

Appendix C: Filling Out a Confined Space Permit SOP

Standard Operating Procedure

Document ID:	Title:	Print Date:
SCT-SAF-	**Filling Out a Confined Space Permit**	
Equipment ID:	Prepared By: **Kristen Worden**	Date Prepared: 3/2/2016
Revision	Standard:	Date Reviewed:

Purpose: **To correctly and consistently fill out a confined space permit.**

Scope: **All SCT Areas**

Responsibilities: **SCT Operations & Maintenance Personnel**

Definitions: **PPE – Personal Protective Equipment**

Procedure:

1.0 Preparation for Confined Space Permit

1.1 **Supervisor and Attendant to fill this out together to make sure all the information is accurate and verified.**

1.2 **If the confined space usually has something in it, the space should be washed, cleaned, and dried. All hazardous lines should be isolated, locked out, and/or tagged out. A zero energy state checklist needs to be filled out. Tank signs are to be read and safety precautions reviewed.**

1.3 **If a hot work permit is needed for grinding or welding for example, a hot work permit should be filled out and the area mechanical ventilation is required.**

1.4 **A line breaking permit should be completed if needed and lines connected to the sewer should be blanked.**

1.5 **Engulfment danger needs to be eliminated, a fire extinguisher should be in the area, and the SCBA/rescue equipment needs to be within 5 minutes of the location of the confined space.**

1.6 **Any electrical equipment to be used during entry will be ground fault protected.**

CONFINED SPACE ENTRY PERMIT
For Emergency Call 9-1-1 or Radio 700911

Space to be entered: _____
Location: _____ Purpose of entry: _____
Current Entry Supervisor: _____ Date: Start_____ End_____
Location of Lock Box: _____

PREPARATION OF CONFINED SPACE

	Required Yes	Required No	Completed Yes	Completed No		Required Yes	Required No	Com Yes
Washed and cleaned					Fire Extinguisher			
Drained					SCBA available in general area			
Mechanically Ventilated (Required when welding)					Electrical equipment 12 volt or ground fault protected			
All hazardous lines isolated					Radioactive devices locked out			
Isolation valves closed and locked/tagged					Read tank sign			
Zero energy state checklist completed					Review safety precautions			
Personal monitor required					Lines connected to sewer are blanked			
Hot work permit					Line Breaking permit used when required			
Equipment Eliminated					Atmospheric test in compliance			

Potential hazards of space: _____
Additional entry information including special procedures: _____
Additional equipment for entry: _____
Communication procedure for entry: ☐ Radio ☐ Verbal ☐ Other _____
☐ Retrieval equipment / harnesses available
☐ Verified rescuers are on site (minimum of 4)
Below List Rescuers Names and Radio Numbers

1.7 **All potential hazards of the space will be written out, as well as any additional information that could include special procedures or additional equipment if needed to enter the space.**

1.8 **Communication should be checked off, as well as the names of the people who are on the Rescue Team with the corresponding radio numbers.**

2.0 PPE for Entry

2.1 **Check off in each list what is required to enter the space.**

2.2 **Eye/Face protection is required as well as Safety shoes.**

2.3 **Body protection will always be a harness in case a rescue is needed. If there is a climb or drop of four (4) feet or above, a lanyard is required.**

PPE for entry:

Boots	Gloves	Eye / Face	Hard Hat	Body Protection	Hearing Protection	Insulated Mats / Blankets
☐ Leather	☐ Leather	☐ Safety glasses	☐ Yes	☐ Harness	☐ Muffs / Plugs	☐ Yes
☐ Rubber	☐ Rubber	☐ Goggles	☐ No	☐ Lanyard	☐ Double	☐ No
	☐ Cut-Proof	☐ Face shield		☐ Not Required	☐ Not Required	
	☐ Not Required	☐ Welding Shield				

3.0 Atmospheric Tests

3.1 **The time the contaminants are monitored as well as the initials of the person doing the testing and the date need to be completed.**

3.2 **The MX6 Gas Meter needs at least 5 minutes to acclimate it to the environment it is placed in. After the time has passed, record the values given. If the meter does not test for something, such as Ammonia, write NA in that space.**

3.3 **The Factory Equipment Number and Bump Test Date must also be completed.**

ATMOSPHERIC TESTS

Times Monitored								
Tester Initials / Date								
Contaminant	OSHA Limits	Results	Results	Results	Results	Results	Results	Results
% of Oxygen (O_2)	19.5%-23.5%							
Combustible % of L.E.L.	Maximum 10%							
Carbon Monoxide (CO)	35 ppm or less							
Hydrogen Sulfide (H_2S)	10 ppm or less							
Chlorine Dioxide (ClO_2)	0.1 ppm or less							
Formaldehyde (HCHO)	0.75 ppm or less							
Sulphur Dioxide (SO_2)	2 ppm or less							
Ammonia (NH_3)	25 ppm or less							
Gas Meter	Factory Equip #							
Gas Meter	Bump Test Date							

4.0 Names

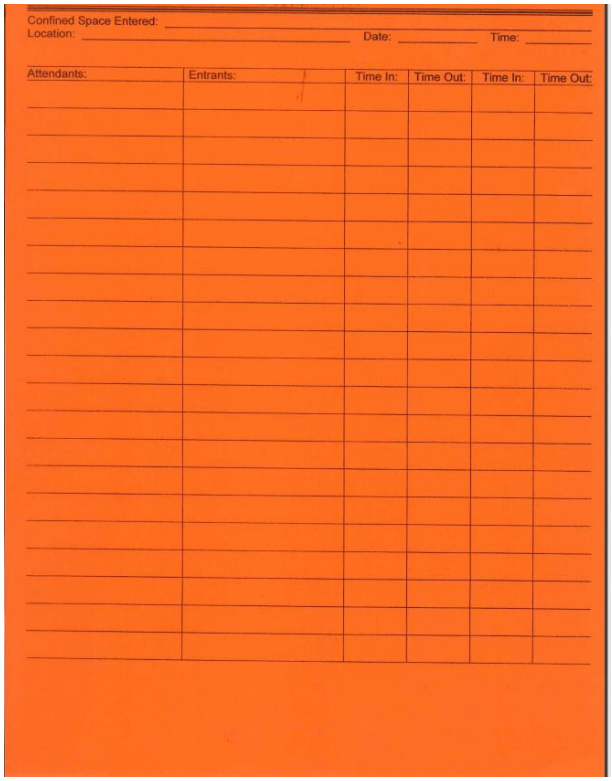
4.1 **The name of the current attendant must be written down as well as the signature of the attendant.**

4.2 **The authorized entrant is the person(s) that are entering the confined space. If the entrant(s) are a third party, such as contractors, they need to sign their name on the form.**

4.3 **The Supervisor needs to sign the form after verifying the information is correct.**

Name of current attendant:
Name of authorized entrant:
Entry Leader Authorizing Initial Entry:
Supervisor Signature:

4.4 **On the back of the permit is a place to keep track of the people entering and exiting the confined space as well as times in and out. This will help to keep track of people. The Attendants will write their name down. The Attendant will keep track of entrants, what time they go in, and what time they exit the confined space.**


Confined Space Entered:
Location: Date: Time:

Attendants:	Entrants:	Time In:	Time Out:	Time In:	Time Out:

5.0 Approval

5.1 **Submit the SOP to the Admin Assistant for proper routing/indexing.**

5.2 **Process: OPS Dep Leader Maint Dep Leader Safety Leader Mill Manager**

5.3 **If any changes are needed the SOP will have to restart the process.**

5.4 **Once the SOP is approved the Admin Assistant will assign it a Document ID and convert it into a protected PDF document**

Appendix D: Downgrading CSE

Non-Permit Required Spaces

Date: _____ Time: _____ Confined Space: _____

Person Requesting the downgrade to a non-permit confined space: _____

Have all people involved in the confined space been informed? Yes ☐ No ☐

Will permit space be entered? Yes ☐ No ☐
If no, then prevent employees from entering space. Do task from outside of space.

Who will be entering the space: Contractors ☐ Employees ☐

Does the space have known or potential hazards? Yes ☐ No ☐

If yes, can the hazards be eliminated? (If no, no action needed) Yes ☐ No ☐

Will the space be reclassify to a non-permit required confined space? Yes ☐ No ☐

Safety Representative:

Confined Space Entry Supervisor: _____

RETURN TO SAFETY DEPARTMENT WHEN JOB IS COMPLETE.
****

NOTICE THIS CONFINED SPACE HAS BEEN DOWNGRADED TO A NON-PERMIT REQUIRED SPACE.