CONFINED SPACE ENTRY

PERMIT-REQUIRED CONFINED SPACE PROGRAM
All Superintendents and Project Mangers

DETERMINATION
All confined spaces that employees may enter need to be identified before entry. Some confined spaces may have inherent hazards or introduced hazards by the work performed. Confined spaces may be regulated by 29CFR1926 Rules for Construction or 29CFR 1910 General Industry.

Confined spaces with hazards defined under OSHA's 1910.146 are Permit-required Confined Spaces requiring evaluation, development of entry procedures, development and issuance of a custom permit and employee training.

Below are examples of confined spaces that will require compliance with 1910.146 Permit-required Confined Spaces.

HAZARDS
Hazards present or potential may come from the following:

Atmospheric - inherent to the space - such as Hydrogen Sulfide, Methane, chlorine and sodium dioxide and oxygen deficiency

Engulfment - from sewage depth, storm flow, diversion or plug failure.

Introduced by work (task) performed - welding, sawing grinding, use of internal combustion power tools, etc.

POLICY
Many confined spaces will not contain a hazard as mentioned above and may or may not be considered a Permit-required Confined Space. Nevertheless, any employees including subcontractor employees are required to notify the Bradbury Stamm Safety Director for determination. It is Bradbury Stamm's policy to develop specific permits for each space. In order to do so, the Project Manager or Superintendent will contact the Safety Director to develop and write a custom entry permit, perform training and ensure proper equipment will be used.

EQUIPMENT
Typically, entry into permit –required confined spaces will require:

- 4 channel air monitor testing for oxygen, flammable gases, carbon monoxide and hydrogen sulfide gases,

- ventilators

- means of rescue.

Some spaces after initial entry and modification maybe declared “Non permit-required confined spaces”. If so, this designation will be at the discretion of Bradbury Stamm Safety Director and will still require daily or more frequently air monitoring and documentation.

For assistance with confined spaces call Bradbury Stamm Safety Director John Brown at (505) 577-7930.

Bradbury Stamm Construction Since 1923

Sample

Permit-required Confined Space Program for Lift Stations

John Smith, Superintendent
Joe Smith, Project Manger
John Brown, Safety Director

Determination

The excavation for the repair to the fire main at the ABC Project is consider a permit required confined space due the following potential hazards:

Hazards

Hazards present or potential may come from the following:

Atmospheric- introduced by work activities such as cutting, grinding or welding.

Engulfment- from water supply to the main opened in case of fire or from water in line released during line breaking.

Lock-out/tag-out of the water supply line and control of the water key will retained by Valley Fire Protection and supervised by a Bradbury Stamm representative.

Hazard Control Methods

Before entry, the fire main excavation will be equipped with a ventilator, air monitor and retrieval equipment, entrant equipped with body harness and attendant whose sole duty is to monitor the entrant.

Additionally, before the space is entered the Entry Superintendent (BSC) must fill out this permit.

Date _____ Time of Entry _____ Time Permit is canceled _____

Entrants Name _____

Attendants Name _____

Entry Superintendent: John Smith or John Brown

Purpose of entry _____ Describe work to be done and process (Example: remove elbow, by disconnecting bolts, weld bracket, use of cutting torch or Quickie Saw, any electrical tools including lights)

_____
_____
_____
_____
_____

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Sample

Hazard Control

Is retrieval set-up? _____ Is ventilation fan set-up? _____ Clean source of air? _____ If ventilation gas powered fan must have inlet tube.

	Record Meter Readings Below			
Time	**Oxygen %**	**H2S ppm**	**LEL %**	**CO ppm**

Bradbury Stamm Construction Since 1923

Sample

Non Permit-required Confined Space determination and Procedures for Water Tanks at ABC

John Smith, BSC Project Manger
John Brown, BSC Safety Director
Joe Smith, BSC Superintendent

Work Process

BSC subcontractor employees will be working in the water tank to repair and resurface the existing water tank. The tank is a enclosed space with a hatch at the top. After draining the tank, BSC's Sally Sample will be responsible for implementing lock-out/tag-out controls to assure the tank cannot refill or flood. This maybe accomplished by locking out valves or blind flanges.

After sampling the air with a air monitor to ensure there are no flammable gases D&R tank employees will cut a large opening into the tank. Oce this opening is created the natural air flow will convert the tank into a "Non Permit-required Confined Space". Employees will enter and drive hoisting and aerial platform equipment into the space to perform their work.
The space is confined per OSHA1926.6(ii) and in compliance with1926.6(i). Bradbury Stamm will comply with OSHA's 1910.146 Permit-required Confined Space Standard. Employees entering the water tank will be called entrants.

Hazards

1. It is possible that organic matter within in the sludge basin when disturbed and watered will create an oxygen depleting atmosphere.
2. Although unlikely demolition equipment (saws, grinders, torches) may introduce a hazardous atmospheric conditions to the basins.

Hazard Control Methods

Atmospheric

1. Before entry, the atmosphere will be sampled with an air monitor and recorded on this document by the Superintendent. If the presence of flammable gases, oxygen deficiency, or carbon monoxide are detected the space will not be entered. If the monitors sound the alarm, evacuate the basins. If carbon monoxide or oxygen deficiency is detected notify John Brown at 681-4307.
2. The entrant employees will check and record the air monitor readings every hour.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Entrants Name(s) _____, _____, _____, _____.

Bradbury Stamm Construction Since 1923

Sample

Record Meter Readings Below

Time **Oxygen %** **H2S ppm** **LEL %**

CO ppm **Initials**

Bradbury Stamm Construction Since 1923

Sample

Non Permit-required Confined Space for ABC Aeration Basins and Clarifiers
John Smith, BSC Project Manger
John Brown, BSC Safety Director
Joe Smith, BSC Superintendent

Work Process

BSC employees and subcontractor employees will be working in the aeration basins and clarifiers. The an enclosed without a top, roof or cover. After draining the basin or clarifier, BSC's Joe Smith and Sally Sample will be responsible for implementing lock-out/tag-out controls to assure the basin and clarifiers cannot refill or flood. This maybe accomplished by locking out valves, blind flanges, closing gates or constructing bulkheads.

After draining and cleaning, the basin or clarifier atmosphere will be tested to assure carbon monoxide <35ppm, hydrogen sulfide <10 ppm, oxygen levels at 19.5% and flammable gases at less then 10% of the LEL. If so, the space will be declared a "Non Permit-required Confined Space". Employees will enter and drive hoisting and aerial platform equipment into the space to perform their work.
The space is confined per OSHA1926.6(ii) and in compliance with1926.6(i). Bradbury Stamm will comply with OSHA's 1910.146 Permit-required Confined Space Standard. Employees entering the water tank will be called entrants.

Hazards

1. It is possible that organic matter within in the sludge basin when disturbed and watered will create an oxygen depleting atmosphere.
2. Although unlikely demolition equipment (saws, grinders, torches) may introduce a hazardous atmospheric conditions to the basins.

Hazard Control Methods

Atmospheric

1. Before entry, the atmosphere will be sampled with an air monitor and recorded on this document by the Superintendent. If the presence of flammable gases, oxygen deficiency, or carbon monoxide are detected the space will not be entered. If the monitors sound the alarm, evacuate the basins. If carbon monoxide or oxygen deficiency is detected notify John Brown at 681-4307.
2. The entrant employees will check and record the air monitor readings every hour.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Entrants Name(s) _____, _____, _____, _____.

Bradbury Stamm Construction Since 1923

Sample

Record Meter Readings Below

Time **Oxygen %** **H2S ppm** **LEL %**
CO ppm **Initials**

Bradbury Stamm Construction Since 1923

Sample

Non Permit-required Confined Space for ABC Southside Reclamation Facility Digester
Joe Smith, BSC Project Manger
John Brown, BSC Safety Director
John Smith, BSC Superintendent

Work Process

BSC employees will be working in Digester #4 to support the floating lid, erect and disassemble scaffolding, demolishing concrete and casting concrete in place. "Hot Work" is not anticipated. If "Hot Work" become necessary a "Hot Work" permit will be filled out before and those protocols followed.

After each draining of the digester, BSC's John Smith will be responsible for implementing lock-out/tag-out controls with the COA to assure the digester cannot refill or flood. This maybe accomplished by locking out valves, blind flanges, closing gates or constructing bulkheads.

After draining and cleaning, the digester atmosphere will be tested to assure carbon monoxide <35ppm, hydrogen sulfide <10 ppm, oxygen levels at 19.5% and flammable gases at less then 10% of the LEL. If so, the space will be declared a "Non Permit-required Confined Space". Employees will enter and drive hoisting and aerial platform equipment into the space to perform their work. Two (2) air monitors will be used: 1 near the top and another near the bottom. Both monitors will be check and their readings recorded every 30 minutes during entry on the Non Permit-required confined space permit. If the monitors alarm sound the employees will immediately evacuate the space.

The space is confined per OSHA1926.6(ii) and in compliance with1926.6(i). Bradbury Stamm will comply with OSHA's 1910.146 Permit-required Confined Space Standard. Employees entering the water tank will be called entrants.

Hazards

1. It is possible that organic matter within in the sludge basin when disturbed and watered will create an oxygen depleting atmosphere.
2. Although unlikely demolition equipment (saws, grinders, torches) may introduce a hazardous atmospheric conditions to the basins.
3. Explosive cases may collect in the digester from adjacent digesters or leaks in valves and piping systems. The lower manway at the southwest side of the digester must be removed during all entries.

Hazard Control Methods

Atmospheric

1. Before entry, the atmosphere will be sampled with an air monitor and recorded on this document by the Superintendent. If the presence of flammable gases, oxygen deficiency, or carbon monoxide are detected the space will not be entered. If the monitors sound the alarm, evacuate the basins. If carbon monoxide or oxygen deficiency is detected notify John Brown at 577-7930.
2. The entrant employees will check and record the air monitor readings every hour.

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Sample

3. A safety meeting will be held each day with the entrants to remind them of the hazards and controls set forth above.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Entrants Name(s) _____, _____, _____, _____.

Time	Oxygen %	Record Meter Readings Below H2S ppm	LEL %	CO ppm	Initials

Bradbury Stamm Construction Since 1923

Sample

Non Permit-required Confined Space determination and Procedures for Water Tanks at ABC
John Smith, BSC Project Manger
John Brown, BSC Safety Director
Joe Smith, BSC Superintendent

Work Process

BSC subcontractor employees will be working in the water tank to repair and resurface the existing water tank. The tank is a enclosed space with a hatch at the top. After draining the tank, BSC's Joe Smith will be responsible for implementing lock-out/tag-out controls to assure the tank cannot refill or flood. This maybe accomplished by locking out valves or blind flanges.

After sampling the air with a air monitor to ensure there are no flammable gases D&R tank employees will cut a large opening into the tank. Oce this opening is created the natural air flow will convert the tank into a "Non Permit-required Confined Space". Employees will enter and drive hoisting and aerial platform equipment into the space to perform their work.
The space is confined per OSHA1926.6(ii) and in compliance with1926.6(i). Bradbury Stamm will comply with OSHA's 1910.146 Permit-required Confined Space Standard. Employees entering the water tank will be called entrants.

Hazards

Most hazards, existing or potential, in this tank earning the Permit-required Confined Space designation will be atmospheric.

1. It is unlikely the tank will have any hazardous gas other than a low oxygen levels if there is lots of rust or standing water with microorganisms.
2. After the entry door is cut the other source of atmospheric hazards will all be introduced from equipment exhaust, welding and oxyacetylene cutting and vapors from coating materials.

Hazard Control Methods

Atmospheric

1. Before entry, the atmosphere will be sampled with an air monitor and recorded on this document by the Superintendent. If the presence of flammable gases, oxygen deficiency, or carbon monoxide are detected the space will be ventilated before cutting the door.
2. Once the door is cut and removed, post air monitors in areas where entrants can see and hear the alarm.
3. If air monitors will be sound the alarm, evacuate the space until atmospheric hazards subside.
4. The entrant employees will check and record the air monitor readings every hour on this document.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Bradbury Stamm Construction Since 1923

Sample

Entrants Name(s) _____, _____, _____, _____.

Time	Oxygen %	Record Meter Readings Below H2S ppm	LEL %	CO ppm	Initials

Bradbury Stamm Construction Since 1923

Sample

Non permit-required Confined Space determination and Procedures for Aeration Basins at the ABC Wastewater Treatment Plant

John Smith, Foreman
John Brown, BSC Safety Director
Joe Smith, BSC Superintendent

Work Process

BSC employees and subcontractor employees will be working in the shored bore pits welding steel casing section together. The basins are open top structures with natural air flow. The space is confined per OSHA1926.6(ii) and in compliance with1926.6(i). Bradbury Stamm will comply with OSHA's 1910.146 Permit-required Confined Space Standard. Employees entering the pipeline will be called entrants.

Hazards

1. It is possible that organic matter within in the sludge basin when disturbed and watered will create an oxygen depleting atmosphere.
2. Although unlikely demolition equipment (saws, grinders, torches) may introduce a hazardous atmospheric conditions to the basins.

Hazard Control Methods

Atmospheric

1. Before entry, the atmosphere will be sampled with an air monitor and recorded on this document by the Superintendent. If the presence of flammable gases, oxygen deficiency, or carbon monoxide are detected the space will not be entered. If the monitors sound the alarm, evacuate the basins. If carbon monoxide or oxygen deficiency is detected notify John Brown at 681-4307.
2. The entrant employees will check and record the air monitor readings every hour.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Entrants Name(s) _____, _____, _____, _____.

Bradbury Stamm Construction Since 1923

Sample

Record Meter Readings Below

Time	Oxygen %	H2S ppm	LEL %	CO ppm	Initials

Bradbury Stamm Construction Since 1923

Sample

Non Permit-required Confined Space determination and Procedures for Water Tanks at ABC
John Smith, BSC Project Manger
John Brown, BSC Safety Director
Joe Smith, BSC Superintendent

Work Process

BSC subcontractor employees will be working in the water tank to repair and resurface the existing water tank. The tank is a enclosed space with a hatch at the top. After draining the tank, BSC's Joe Smith will be responsible for implementing lock-out/tag-out controls to assure the tank cannot refill or flood. This maybe accomplished by locking out valves or blind flanges.

After sampling the air with a air monitor to ensure there are no flammable gases D&R tank employees will cut a large opening into the tank. Oce this opening is created the natural air flow will convert the tank into a "Non Permit-required Confined Space". Employees will enter and drive hoisting and aerial platform equipment into the space to perform their work.
The space is confined per OSHA1926.6(ii) and in compliance with1926.6(i). Bradbury Stamm will comply with OSHA's 1910.146 Permit-required Confined Space Standard. Employees entering the water tank will be called entrants.

Hazards

1. It is possible that organic matter within in the sludge basin when disturbed and watered will create an oxygen depleting atmosphere.
2. Although unlikely demolition equipment (saws, grinders, torches) may introduce a hazardous atmospheric conditions to the basins.

Hazard Control Methods

Atmospheric

1. Before entry, the atmosphere will be sampled with an air monitor and recorded on this document by the Superintendent. If the presence of flammable gases, oxygen deficiency, or carbon monoxide are detected the space will not be entered. If the monitors sound the alarm, evacuate the basins. If carbon monoxide or oxygen deficiency is detected notify John Brown at 681-4307.
2. The entrant employees will check and record the air monitor readings every hour.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Entrants Name(s) _____, _____, _____, _____.

Bradbury Stamm Construction Since 1923

Sample

Record Meter Readings Below

Time	Oxygen %	CO ppm	H2S ppm	Initials	LEL %

Bradbury Stamm Construction Since 1923

Sample

Permit-required Confined Space Program for The Pre-Treatment Facility (PTF) at ABC Water Reclamation Facility
Joe Smith, Superintendent
John Brown, Safety Director

Determination
All confined spaces located at or in the PTF building are Permit-required Confined Spaces.
Hazards
Hazards present or potential may come from the following:
Atmospheric- inherent to the space- such as Hydrogen Sulfide, Methane, chlorine and sodium dioxide and oxygen deficiency;
Engulfment- from sewage depth, storm flow, diversion or plug failure, or leaky gates;
Introduced by work (task) performed- welding, sawing grinding, use of internal combustion power tools, etc.

Hazard Control Methods

Before entry each space will be vented, monitored, retrieval equipment set-up, entrant equipped with body harness and attendant whose sole duty is to monitor the entrant.

Additionally, before the space is entered the Entry Superintendent must fill out this permit.

Date _____ Time of Entry _____ Time Permit is canceled _____

Entrants Name _____

Attendants Name _____

Entry Superintendent: Joe Smith

Purpose of entry _____ Describe work to be done and process (Example: remove pumps, by disconnecting bolts, use of cutting torch or Quickie Saw, any electrical tools including lights)
_____
_____
_____
_____
_____

Hazard Control
Is tripod set-up? _____ Is ventilation fan set-up? _____ Clean source of air? _____ If ventilation gas powered fan must have inlet tube.
Are 2 (two) air monitors available? _____ Are both reading the same or close? _____

Bradbury Stamm Construction Since 1923

Sample

Record Meter Readings Below

Time	Oxygen %	H2S ppm	LEL %	CO ppm	

Bradbury Stamm Construction Since 1923

Sample

Permit-required Confined Space determination and Procedures for Water Tanks at ABC
Joe Smith, BSC Project Manger
John Brown, BSC Safety Director
John Smith, BSC Superintendent

Work Process
BSC subcontractor employees will be working in the water tank to vacuum out filter media in a aqueous state containing sand, gravel and anthracite. The tank is a enclosed space with a hatchway at the side near the top. John Smith will be responsible for implementing lock-out/ tag-out of computer actuated controls as well as physically closing the valves to assure the tank cannot refill or flood:

Hazards
1. Engulfment from water entering the tank.
2. Media placement may create dust hazard atmospheric conditions in the tank.

Hazard Control Methods

Lock-out at the following points:
1. At the well building
2. Close valve at treatment building from well to tanks.
3. Close valves from backwash tanks.
4. Use computer to actuate valves to closed position. Log out and secure computer.

During media extraction the ventilation will be provided by vacuum truck.
During media placement, a manhole blower, dust masks and supplied air will be provided the entrant.

Lock-out/tag-out has been completed ELIMINATING engulfment hazards. COA
_____

John Smith, BSC Superintendent

_____

John Brown, BSC Safety Director

_____

Date _____ Time of Entry _____ Time Permit is cancelled
_____

Entrants Name(s) _____, _____, _____,
_____.

Bradbury Stamm Construction Since 1923

Sample

Permit-required Confined Space Program for the Pre-Treatment Facility (PTF) at ABC Water Reclamation Facility
John Smith, Superintendent
John Brown, Safety Director

Determination
All confined spaces located at or in the PTF building are Permit-required Confined Spaces.
Hazards
Hazards present or potential may come from the following:
Atmospheric- inherent to the space- such as Hydrogen Sulfide, Methane, chlorine and sodium dioxide and oxygen deficiency;
Engulfment- from sewage depth, storm flow, diversion or plug failure, or leaky gates;
Introduced by work (task) performed- welding, sawing grinding, use of internal combustion power tools, etc.

Hazard Control Methods

Before entry each space will be vented, monitored, retrieval equipment set-up, entrant equipped with body harness and attendant whose sole duty is to monitor the entrant.

Additionally, before the space is entered the Entry Superintendent must fill out this permit.

Date _____ Time of Entry _____ Time Permit is canceled _____

Entrants Name _____

Attendants Name _____

Entry Superintendent: John Smith

Purpose of entry _____ Describe work to be done and process (Example: remove pumps, by disconnecting bolts, use of cutting torch or Quickie Saw, any electrical tools including lights)
_____
_____
_____
_____
_____

Hazard Control
Is tripod set-up? _____ Is ventilation fan set-up? _____ Clean source of air? _____ If ventilation gas powered fan must have inlet tube.
Are 2 (two) air monitors available? _____ Are both reading the same or close? _____

Bradbury Stamm Construction Since 1923

Sample

Record Meter Readings Below

Time	Oxygen %	H2S ppm	LEL %	CO ppm

Bradbury Stamm Construction Since 1923

Sample

Permit-required Confined Space Program for Lift Stations
John Smith, Superintendent
Joe Smith, Project Manger
John Brown, Safety Director

Determination
The Sludge Digester is a Confined Space with an atmospheric and engulfment hazard and has bee determined to be a Permit-required Confined Space per 1910.146.

Hazards
Hazards present or potential may come from the following:

Atmospheric- inherent to the space- such as Hydrogen Sulfide, Methane and oxygen deficiency

Engulfment- from sewage process piping and remote control valve operation.

Introduced by work (task) performed- welding, sawing grinding, sand blasting and coating.

Hazard Control Methods

Before entry each this space will be vented, monitored, retrieval equipment set-up, entrant equipped with body harness and attendant whose sole duty is to monitor the entrant.

Additionally, before the space is entered the Entry Superintendent must fill out this permit.

Date _____ Time of Entry _____ Time Permit is cancelled _____

Entrants Name _____

Attendants Name _____

Entry Superintendent: John Smith

Purpose of entry _____ Describe work to be done and process (Example: remove pumps, by disconnecting bolts, use of cutting torch or Quickie Saw, any electrical tools including lights)
_____
_____
_____
_____
_____

Hazard Control

Bradbury Stamm Construction Since 1923

Sample

Lock-out/tag-out of the COA's controlled piping and valves? _____ Where? _____. Verified by? _____

Is tripod set-up? _____ Is ventilation fan set-up? _____ Clean source of air? _____ If ventilation gas powered fan must have inlet tube.

Are 2 (two) air monitors available? _____ Are both reading the same or close? _____

Record Meter Readings Below

Time	Oxygen %	H2S ppm	LEL %	CO ppm